QUESTION PAPERS
END TERM EXAMINATION
MAY- 2019
(EAST DELHI CAMPUS)

MBA, MBA (Business Analytics)
Ph.D,BBA and BA (H) ECONOMICS
2nd & 4th SEMESTER

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(EAST DELHI CAMPUS)

QUESTION PAPERS FOR MBA,MBA (Business Analytics) Ph.D, BBA&BA (H) ECONOMICS END TERM EXAMINATION MAY - 2019

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2nd Semester MBA

END SEMESTER EXAMINATION- May, 2019

PAPER CODE: MGT-21 PAPER-Human Resource Management

Time: 3:00 Hours *Max. Marks: 60*

All Questions are compulsory.

1. Write short note on the followings: (2.5* 8 =20 marks)
   a) Machinery to resolve Industrial dispute
   b) Methods of training evaluation
   c) E- recruitment
   d) Techniques of Job analysis
   e) Succession planning
   f) Job specification and job description
   g) Partial and total disablement (Under Employees compensation Act, 1923)
   h) Concept of provident fund, gratuity and pension

2. a) Identify the recruitment sources that the companies should tap-
   i) A mobile service company wants to hire temporary field sales officers.
   ii) A branded chain of eye retail hiring for optometrists

   b) There is increase in number of complaints by various departments with delays in filling up of vacancies: Long recruitment cycle. You as the head of the department want to identify the reason for this issue. Identify the dimensions that you would explore in order to nip the problem being expressed.
   (5 * 2 = 10 marks)

3 What is performance appraisal? Discuss the future of traditional methods of performance appraisal in light of growing acceptance of artificial intelligence. (2+8= 10 Marks)

5. '*Assessment of training need is the first and most important step in designing a training program*'. Elaborate the statement? How e-learning is poised to revolutionize the domain of training and development in India. (3+7=10 Marks)

6. What is recruitment? Discuss any four metrics to measure efficiency of recruitment process of any company. (2+8=10 Marks)

Present value interest factor of an (ordinary) annuity of $1 per period at i% for n periods, PVIFA(i,n).

Period	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	1.808	1.783	1.759	1.736	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528
3	2.624	2.577	2.531	2.487	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.387	3.312	3.240	3.170	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589
5	4.100	3.993	3.890	3.791	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	4.767	4.623	4.486	4.355	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	5.389	5.206	5.033	4.868	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605
8	5.971	5.747	5.535	5.335	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	6.515	6.247	5.995	5.759	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	7.024	6.710	6.418	6.145	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192
11	7.499	7.139	6.805	6.495	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327
12	7.943	7.536	7.161	6.814	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439
13	8.358	7.904	7.487	7.103	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533
14	8.745	8.244	7.786	7.367	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611
15	9.108	8.559	8.061	7.606	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675

Present value interest factor of $1 per period at i% for n periods, PVIF(i,n).

Period	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.873	0.857	0.842	0.826	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.816	0.794	0.772	0.751	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.763	0.735	0.708	0.683	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.713	0.681	0.650	0.621	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.666	0.630	0.596	0.564	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.623	0.583	0.547	0.513	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.582	0.540	0.502	0.467	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.544	0.500	0.460	0.424	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.508	0.463	0.422	0.386	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.475	0.429	0.388	0.350	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.444	0.397	0.356	0.319	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.415	0.368	0.326	0.290	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.388	0.340	0.299	0.263	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.362	0.315	0.275	0.239	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065
16	0.339	0.292	0.252	0.218	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054
17	0.317	0.270	0.231	0.198	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045
18	0.296	0.250	0.212	0.180	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038
19	0.277	0.232	0.194	0.164	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031
20	0.258	0.215	0.178	0.149	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026

Total No. of Pages 4

II SEMESTER, MBA

END SEMESTER EXAMINATION *May/June-2019*

MGT-22 FINANCIAL MANAGEMENT

Time: 3:00 Hours *Max. Marks: 60*

Note: All questions are compulsory

Q.1 Write short notes on **any three** of following: (5 Marks each)

a) Time value of money
b) Financing decision in financial management
c) Wealth maximization
d) Internal rate of return

Q.2 a) Company X is considering investing in a project that requires an initial investment of ₹3500 with an expected cash flow generated over 3 years as given in the table below:

CFAT and its probability of occurrence

Year I		Year II		Year III	
CFAT	Probability	CFAT	Probability	CFAT	Probability
900	0.2	900	0.1	900	0.3
1200	0.2	1200	0.3	1200	0.2
1800	0.3	1800	0.4	1890	0.3
2200	0.3	2200	0.2	2200	0.2

a) What is expected NPV of the project when risk-free rate of interest in the market is 10%? (6 Marks)
b) Calculate the riskiness of project by calculating standard deviation (4 Marks)

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Q.2 b) A company goes for expansion policy of existing plant. Expansion project costs ₹ 1200 million. Working capital is 100 million. Annual capacity of the plant is 50,000 units sold at the rate of ₹2500. The variable cost to sales ratio is 50%. The fixed cost per annum is 450 million excluding depreciation. The set-up cost of one time would be ₹100 million. Working capital requirement will be 10% of sales. The company would utilize the capacity of plant as shown in table below:

Year	0	1	2	3	4	5
Capacity utilization (%)	30	30	50	70	100	100

The salvage value of machine will be 15% of the cost. Determine the cash flows for each of year of the expansion project. Depreciation is on straight-line basis. Present value is **not to be** computed (10 Marks)

Q.3 Bhaskar Manufacture Ltd. has equity share capital of ₹500,000 (face value of ₹ 100). To meet the expenditure of an expansion program, the company wishes to raise ₹300,000 and is having following alternatives as sources of funds:

Plan A: To have full money from issue of equity
Plan B: To have ₹ 100,000 from equity shares and ₹ 200,000 from borrowings from financial institution at 10% p.a.
Plan C: To have full money from borrowings at 10% p.a.
Plan D: To have ₹ 100,000 in equity and ₹200,000 from 8% preference shares

The company has present earnings of ₹150,000. The corporate tax rate is 50%.

Select the **most suitable plan** to raise required funds. (2 x 4 + 1 = 9 Marks)

Q.3.b) Calculate the degree of operating leverage and degree of financial leverage according to the data given below for companies A and B: (3X2 = 6 marks)

	A	B
Output in Units	70,000	25,000
Fixed costs	10,000	13,000
Variable cost/ unit	0.2	1.5
Interest on borrowed funds	5,000	18,000
Selling price per unit	0.6	5

OR

Q.3

Brightways Ltd. faces four possible economic conditions very poor, poor, normal and good. Brightways' possible level of sales and operating expenses with their probability of occurrence are given in table below:

Expected Sales, EBIT, ROI with associated probabilities

	Poor	Poor	Normal	Normal	Good
Probability	0.10	0.15	0.35	0.30	0.05
Sales	660	710	800	880	1160
Costs:					
Variable cost	330	355	400	440	580
Fixed cost	280	280	280	280	280
Total Cost	610	635	680	720	860
EBIT	50	75	120	160	300
ROI	10%	15%	24%	32%	60%

The company is considering two financial plans for an investment of ₹500,000:

1. Raise entire funds by issuing 50,000 ordinary shares at 10 per share
2. Or to raise ₹250,000 by issuing 25,000 shares of ₹10 each and borrow 250,000 at 15%.

The tax rate of 50%.

a) What are the effects of alternative plans on shareholders' earnings? Which plan out of two is best in given scenarios (10+ 2 = 12 marks)
b) Does state of economy have a bearing on choice of financial plan, please state in context of information given about Bright ways. (3 marks)

Q.4 A. Mr Sunil takes a loan of INR 100,000 at 14% rate of interest for purchasing a car. The loan has to be repaid over the next 5 years.

a) Estimate the equal annual instalment to be given by Mr Sunil to repay his principal plus interest in the 5 years. (3 Marks)
b) Prepare schedule of loan amortization (5 Marks)

Q.4 B. How much amount should be invested now so that Mr Sunil receives INR 100,000 each year in perpetuity at an interest rate of 10%? (2 Marks)

Total No. of Pages 6+1 page of t-table

Roll No.....

II SEMESTER

MBA (General)

END SEMESTER EXAMINATION *May/June-2019*

PAPER CODE MGT-23 &

TITLE OF PAPER Business Research Methods

Time: 3:00 Hours *Max. Marks: 60*

Note: Assume suitable missing data, if any.
Read the Instructions Carefully with each question
Statistical table for t test are provided with the paper

Q1. Short Answer Questions (15)
(Attempt any 5 parts from (a) – (f), 3 Marks each)

a. Explain the role of business research in business decision making. Give an example of pure research explaining its use in business decision making.

b. Discuss two applications of factor analysis in business research.

c. Compare the cross-sectional and longitudinal research designs providing an example of each.

d. Identify and explain three sources of errors in survey research.

e. Describe random and stratified sampling methods in probability sampling.

f. Explain type 1 and type 2 error in hypothesis testing.

P.T.O.

Q2. Long Answer Questions
(Attempt any 3 parts from (a) – (d), 5 Marks each) (15)

a.

i. What is questionnaire?
ii. Discuss the difference between structured and unstructured questionnaires.
iii. Discuss the two main points that you will take into account while drafting a questionnaire?

b. What do you mean by primary data? Explain three methods of collecting primary data?

c.

i. Differentiate between comparative and non-comparative scaling.
ii. Explain the comparative scaling method - paired comparison scaling.
iii. Explain the non-comparative scaling method - itemized rating scaling.

d. Describe the sampling design process. Discuss two factors that calls for the use of large samples.

Q3. A sample of 20 undergraduate students answered the following questions

What is your gender?
What is your age?
What is your height?
What is your major area of study?
Are you planning to attend a graduate school?
What is your current CGPA?
What starting salary you are expecting if you seek campus placement?
How satisfied you are with the facilities available in the campus (rate o a scale of 1 to 5)?

Based on the survey answer the following questions

i. Classify the variables Gender, Height, CGPA and Satisfaction on the scale of measurement. (2)

ii. Is the data cross-sectional or time series? (1)

iii. Make a frequency distribution of majors selected by the students and show it graphically using a bar chart. (3)

iv. Make a frequency distribution of current CGPA and show it graphically in a histogram. (3)

v. Compute the mean and variance of age. (2)

vi. Draw a scatter plot between current CGPA (X) and expected salary (Y). Interpret the relationship. (2)

vii. Make a cross tabulation of Majors and Grad School variables. (2)

Student	Gender	Age	Height	Major	Grad School	CGPA	Exp. Salary (1000 INR)	Satisfaction
1	Male	18	69	Marketing	Yes	3.19	40	2
2	Male	21	67	IT	No	3.11	50	2
3	Male	20	68	Economics	No	3.02	50	4
4	Male	18	79	Economics	Yes	4.00	50	5
5	Male	19	67	IT	Yes	2.75	40	1
6	Male	20	70	Accounting	Yes	3.24	60	5
7	Male	20	68	Economics	Yes	2.93	50	4
8	Male	21	71	IT	Yes	3.26	40	1
9	female	20	62	Marketing	No	3.21	45	4
10	Male	19	70	Accounting	Yes	3.23	50	3
11	Male	25	67	Accounting	No	3.77	60	4
12	female	19	65	Accounting	No	3.71	40	5
13	female	20	65	Accounting	No	3.20	45	3
14	female	21	65	Marketing	Yes	2.94	40	4
15	female	18	66	Marketing	Yes	3.22	40	3
16	Male	20	69	IT	No	3.34	60	5
17	female	18	64	Economics	No	3.09	40	1
18	Male	20	67	IT	No	3.72	50	4
19	Male	23	70	Economics	No	2.50	50	2
20	female	20	62	Marketing	No	2.21	55	3

Q4. Attempt **any 2** parts from (a) to (c) (7.5)

a. Shown below is the excel output of the regression analysis conducted on the following data of prices for books and the number of pages that each book contains.

Data		
Book	**Pages (x)**	**Price (y)**
A	500	7
B	700	7.5
C	750	9
D	590	6.5
E	540	7.5
F	650	7
G	480	4.5

Summary Output	
Regression Statistics	
Multiple R	0.75027
R Square	0.56291
Adjusted R Square	0.47549
Standard Error	0.98061
Observations	7

ANOVA					
	Df	SS	MS	F	Significance F
Regression	1	6.192	6.192	6.439	0.0520
Residual	5	4.808	0.962		
Total	6	11			

	Coefficients	Standard Error	t Stat	p-value
Intercept	1.0415	2.3772	0.4381	0.6796
X	0.0099	0.0039	2.5375	0.05204

i. Form the simple linear regression equation to determine the price of the book based on the number of pages.

ii. Based on the regression model predict the price of the book if number of pages equals 600.

iii. What is the coefficient of determination? Explain its meaning.

iv. Comment on the significance of the regression model and the significance of the regression coefficient (X). Use $\alpha = 0.10$.

(7.5)

b. Models of 3 cars (A, B, and C) were compared for gasoline consumption. For each model of car, 15 cars were randomly selected and subjected to standard driving procedures. The average miles/gallon obtained for each model of car and sample standard deviations are shown below.

	Car A	Car B	Car C
Average Mile/Gallon	42	49	44
Sample Standard Deviation	4	5	3

Use the above data and test to see if the mean gasoline consumption for all three models of cars is the same assuming $\alpha = 0.05$ based on critical value approach, assuming tabulated value of $F = 11.7$.

(7.5)

c. Two major automobile manufacturers have produced compact cars with the same size engines. We are interested in determining whether or not there is a significant difference in the MPG (miles per gallon) of the two brands of automobiles. A random sample of eight cars from each manufacturer is selected, and eight drivers are

selected to drive each automobile for a specified distance. The following data show the results of the test.

Driver	Manufacturer A	Manufacturer B
1	32	28
2	27	22
3	26	27
4	26	24
5	25	24
6	29	25
7	31	28
8	25	27

i. Formulate the hypothesis to prove the researcher's claim that there is difference in the MPG (miles per gallon) of the two brands of automobiles.

ii. Identify and compute the value of appropriate test statistic.

iii. At 90% confidence using the critical value approach is there conclusive evidence to prove the researcher's claim.

t Table

cum. prob	$t_{.50}$	$t_{.75}$	$t_{.80}$	$t_{.85}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$	$t_{.999}$	$t_{.9995}$
one-tail	0.50	0.25	0.20	0.15	0.10	0.05	0.025	0.01	0.005	0.001	0.0005
two-tails	1.00	0.50	0.40	0.30	0.20	0.10	0.05	0.02	0.01	0.002	0.001
df											
1	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	318.31	636.62
2	0.000	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.000	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.000	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.000	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.000	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.000	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.000	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.551
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.660	3.232	3.460
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.639	3.195	3.416
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.390
1000	0.000	0.675	0.842	1.037	1.282	1.646	1.962	2.330	2.581	3.098	3.300
z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291
	0%	50%	60%	70%	80%	90%	95%	98%	99%	99.8%	99.9%
	Confidence Level										

Total No. of Pages 2 Roll No.....

II SEMESTER MBA

END SEMESTER EXAMINATION May/June-2019

PAPER CODE MGT 24 TITLE OF PAPER Business Environment

Time: 3:00 Hours Max. Marks : 60

Note : Q.6 is compulsory. Attempt any three out of the remaining questions.
All questions carry equal marks.

1. (a) Examine the criticality of the factors of internal and external business environment with respect to changing situations.
(b) What is the purpose of Business Environmental Scanning? How will you overcome the uncertainties involved in it?

2. (a) What are the common threats that challenge any economy?
(b) What types of Political Risk a business is likely to face in a foreign country? Explain in detail.

3. (a) What is a business cycle? Draw a hypothetical graph showing the various phases of business cycle. Explain taking example of any business firm.
(b)What issues should a business person consider while doing business in a cross-cultural environment?

4. (a) What are the motives behind MNC's entering into another country? What measures can be taken to restrict dumping by MNC's?
(b) Do you think that the recent developments in the US politics such as the election of the new President and their policies will have adverse impact on Global Outsourcing?

5. (a) What is the role of WTO in settling disputes regarding trade policies of any country?
(b) Discuss the financing policies of World bank and its assistance to India.

6. Softcore Consultancy Services is in the IT sector. It is currently facing a shortage of skilled manpower and is fuelling a hike in the employee salaries, which has been boosting a 10% to 40% growth during the last couple of years. While there is an abundance of trainable human resources, a dearth in the skilled labour is being felt across the industry and that has resulted in a hike in salaries.

Typically, salary jumps happen not only in the conventional manner of being promoted but also because of professionals changing jobs more frequently. The increase in salaries varies from job to job, and ranks highest in the IT sector where employees get a hike of over 40% when they join a new establishment. There is no dearth in the entry level human resources as there is a large supply, but a severe shortage is felt in the middle level positions.

According to Mr. Raj, the CEO of Software, many new captive and third party off-shore facilities that are being setup in the country have led to a competition for skilled human resources that are already scarce. This is also leading to an ever-widening, demand-supply gap and a rise in the average salary of all positions, apart from pushing up the attrition in the existing facilities, he said.

There is a new trend of employees moving to MNCs abroad for higher salaries and global experience. The salary package and the working environment factor are far better in countries like United States as compared to India. Then returning to India with a global experience paves a way for a higher pay and better position.This is also one reason for the shortage of skilled manpower and hike in employee salaries in the IT sector.

Questions-

a. What are the problems that the Software is facing? Suggest some remedies for the same.

b. Do you support Globalization? Give reasons for the same.

Total No. of Pages(2)___ — 14 —

Roll No. ..

2nd SEMESTER MBA (East Campus)

END SEMESTER EXAMINATION ~~May-2018~~ May-2019

PAPER CODE : MGT-25 &

TITLE OF PAPER: Knowledge and Intellectual Capital Management

Time: 3:00 Hours *Max. Marks : 60*

Note : There is choice in question seven only. Write neatly and precisely. Highlight the keywords.

Q.1) The Royal Botanical Gardens has been established for more than 120 years and has the following mission statement: "The Royal Botanical Gardens belongs to the nation. Our mission is to increase knowledge and appreciation of plants, their importance and their conservation, by managing and displaying living and preserved collections and through botanical and horticultural research." Located towards the edge of the city, the gardens are visited regularly throughout the year by many local families and are an internationally well known tourist attraction. Despite charging admission, it is one of the top five visitor attractions in the country. Every year it answers many thousands of inquiries from universities and research establishments, including pharmaceutical companies from all over the world and charges for advice and access to its collection. Inquiries include requests for access to the plant collection for horticultural work, seeds for propagation or samples for chemical analysis to seek novel pharmaceutical compounds for commercial exploitation. It receives an annual grant in aid from Central Government, which is fixed once every five years. The grant is due for review in three years' time. The finance director has decided that, in order to strengthen its case when meeting the government representatives to negotiate the grant, the management board should be able to present a balanced scorecard demonstrating the performance of the gardens. He has asked you, the senior management accountant, to help him. Many members of the board, which consists of eminent scientists, are unfamiliar with the concept of a balanced scorecard.

(a) Describe the benefit of the Balance Scorecards. [5]

(b) Discuss the process you would employ to develop a suitable balanced scorecard for the Royal Botanical Gardens and give examples of measures that would be incorporated within it. [5]

Q.2) Describe the codification and personalization strategy in knowledge management . Explain the various methods used by Danone to enable KM in the organization. [5+5=10]

Q.3) Describe Intellectual Capital, Relational Capital, Structural Capital, Social Capital taking OLA as example. [2.5+2.5+2.5+2.5 =10]

Q.4) What is the role of RSC in a customer relationship ? What does an RSC offer that is not already contained in client's SLAs ? What opportunities and challenges involved in building an RSC ? [3+3+4 =10]

Q.5) Critically analyse that whether AI be ultimately taking over the human intelligence ?[5]

Q.6) What barriers knowledge manager faces while implementing the KM in the organization ?[5]

Q.7) Explain **any two** of the following

a.) Peer Assist

b.) ERP

c.) Knowledge Map [5+5=10]

Total No. of Pages 3 Roll No.....

II SEMESTER MBA (General)

END SEMESTER EXAMINATION *May/June-2019*

PAPER CODE MGT-26 &

TITLE OF PAPER Operations and Supply Chain Management

Time: 3:00 Hours *Max. Marks: 60*

Note: Assume suitable missing data, if any.
Read the Instructions Carefully with each question

Q1. Short Answer Questions
(Attempt any 5 parts from (a) – (f), 4 Marks each) (20)

a. Briefly describe the alternative methods of capacity build-up? Discuss the advantages and disadvantages of Expansionist versus Wait-and-See expansion strategy.

b. Inventory is a necessary evil. Explain.

c. Briefly discuss four dimensions of quality a consumer looks for in manufactured products.

d. State the fundamental objective of a firm's location strategy. Discuss two major factors that determine the selection of location by an industrial goods-producing firm.

e. Define Supply Chain. What is the primary objective of a supply chain? List the key attributes of an effective supply chain management and important flows in the supply chains.

f. Briefly explain primary functions and relations between the operations & supply chain management and marketing function of an organisation.

Q2. Long Answer Questions

(Attempt any 3 parts from (a) – (d), 6 Marks each) (18)

a. Describe the TQM philosophy and identify its major characteristics. Why is Total Quality Management much more effective than end of production line inspection?

b. What do you mean by facility layout planning? State any two objectives of facility layout decision. Briefly describe process and product layout, giving an example of a suitable industry to which it is applicable.

c. Define Procurement. Discuss two functions of procurement. Different between the transactional and collaborative supplier relationship management.

d. What do you understand by selective inventory control? Discuss the ABC classification of inventory with an example.

Q3. Applications based questions

(Attempt any 2 from part (a) – (c)) (22)

a. A company is designing a product layout for a new product. It plans to use this production line 8 hours a day in order to meet a schedule of 400 units per day. The tasks necessary to produce this product are detailed in the table below.

Task	Predecessor	Time (seconds)
A	-	50
B	A	36
C	-	26
D	-	22
E	B, D	70
F	C, E	30

i. Draw the network diagram describing the precedence relation given in the above table.

ii. Without regard to a production schedule, what is the minimum possible cycle time (in seconds) for this situation? What is the required cycle time (in seconds) in order to meet the schedule?

iii. Balance this line with 4 work stations. Compute the utilization of each workstation.

b.

i. Discuss one application for both short-range and long-range forecasts in operations and supply chain planning.

ii. Use exponential smoothing with $\alpha = 0.2$ to calculate smoothed averages and a forecast for period 7 from the data below. Assume the forecast for the initial period is 7. Calculate the mean absolute parentage error for the developed forecasted model.

Period	1	2	3	4	5	6
Demand	10	8	7	10	12	9

c. Webster Chemical Company produces mastics and caulking for the construction industry. The product is blended in large mixers and then pumped into tubes and capped. Webster is concerned whether the filling process for tubes of caulking is in statistical control. The process should be centered on 8 ounces per tube. Six samples of eight tubes each are taken and each tube is weighed in ounces. Draw control chart for range and conclude on process variability. (Given $D_4 = 1.864$, $D_3 = 0.136$)

	Observations							
Sample	1	2	3	4	5	6	7	8
1	7.98	8.34	8.02	7.94	8.44	7.68	7.81	8.11
2	8.23	8.12	7.98	8.41	8.31	8.18	7.99	8.06
3	7.89	7.77	7.91	8.04	8.00	7.89	7.93	8.09
4	8.24	8.18	7.83	8.05	7.90	8.16	7.97	8.07
5	7.87	8.13	7.92	7.99	8.10	7.81	8.14	7.88
6	8.13	8.14	8.11	8.13	8.14	8.12	8.13	8.14

Total No. of Pages 3 —18— Roll No.....

II SEMESTER

MBA

END SEMESTER EXAMINATION *May/June-2019*

PAPER CODE MGT 27 **TITLE OF PAPER- Management Accounting**

Time: 3:00 Hours *Max. Marks : 60*

Note :Attempt any *Four* questions.
All questions carry equal marks.
Use of calculator is allowed.

Q.1. Super Toys Ltd manufactures low-range mechanical toys. Fixed costs amount to ₹27,00,000 per year. Variable costs per toy are ₹ 230, and the average price per toy is ₹500.

a. How many toys must Super Toys sell to break-even?
b. If Super Toys sells 16,000 toys in a year, what is the operating income?
c. If Super Toys' variable costs decrease to ₹ 200 per toy while the price and Fixed costs remain unchanged, what is the new break-even point?

Q.2. Sagar Ltd. has outsourced the manufacturing of 20,000 units of a particular spare part at the rate of ₹ 35 per unit. There is a proposal that the product be produced in the factory itself. For this purpose, an additional machine costing ₹ 5,00,000 with a capacity of 30,000 units and a life of 5 years will be required. The firm will have to acquire funds for this machinery and interest payable on the loan is 18% p.a. A foreman with a monthly salary of ₹ 20,000 per month will have to be engaged. The cost of materials required will be ₹ 6 per unit and wages ₹ 4.50 per unit. The variable overheads are 150% of labour and fixed expenses will be recovered @ 200% of wages.

The existing Fixed costs of the firm are ₹ 1,00,000.

Advise the firm on whether to accept the proposal or not.

P.T.O.

Q.3. Deluxe Company produces a popular candy bar called Shiva. The candy is produced in India and exported to the United States. Recently the company adopted the following standards for one 5-ounce bar of the candy:

Direct material (5.5 ounce @ ₹ 40).	=	₹ 220
Direct labour (0.05 hour @ ₹ 26).	=	₹ 1.30
Standard Prime Cost	=	₹ 221.30

During the first week of operation, the company experienced the following actual results:

- Bars produced : 1,00,000
- Ounces of Direct material purchased : 5,70,000 ounces @ ₹ 45
- There are no beginning and ending inventories of direct material
- Direct labour : 5200 hours at ₹ 25.50

a) Compute price and usage variance for direct material
b) Compute the rate variance and the efficiency variance for direct labour.

Q.4. A department attains a sale of ₹ 60,00,000 at 80% of its normal capacity and its expenses are as follows:

Administrative expenses	Amount (₹)	Selling Costs	Amount (₹)
Office salaries	9,00,000	Salaries	8% of sales
General expenses	2% of sales	Travelling Expenses	2% of sales
Depreciation	75,000	Sales office expenses	1% of sales
Rates and taxes	87,500	General Expenses	1% of sales

The distribution costs are wages- ₹ 1,50,000; Rent-1% of sales; and other expenses 4% of sales.

Draw up a flexible administration overhead, selling and distribution overhead costs budget, operating at 80%, 100% and 110% of normal capacity.

P. T.O.

Q.5. Riverdale Printing firm has following data relating to one product, *Art Of Design* Book and the ABC cost pools:

Annual Production 40000 units

Direct Material per unit ₹ 37

Direct Labour per unit ₹ 8

Manufacturing Overhead cost pools:

Cost Pool	Cost(₹)	Cost Driver	All Books	Art of Design
Material ordering	840000	No. of purchase orders	120000 orders	1200
Material Inspection	525000	No. of receiving report.	2100 receiving reports	315
Equipment setup	2500000	No. of setups	125 setups	1
Quality Control	1000000	No. of inspections	5000 inspections	500
Other	25000000	Direct Labour Cost	₹ 12500000	DirectLabour ₹320000

(a)Calculate the overhead rate per unit of activity for each of the five cost pools.

(b)Calculate the total overhead assigned to the production of the *Art Of Design.*

Q.6. Write short notes on (any three)-

(a)Zero based budgeting

(b)Responsibility accounting

(c)Role of Management accountant in an organisation

(d)Sunk cost, Semi-variable cost and Irrelevant cost

(e)Fixed and flexible budget

Total No. of Pages 1 — 21 — Roll No. ..

2nd SEMESTER **MBA (East Campus)**

END SEMESTER EXAMINATION ***May-2019***

PAPER CODE : MGT-28 &

TITLE OF PAPER: Information Technology and Innovation Management

Time: 3:00 Hours ***Max. Marks : 60***

Note : Attempt any six questions from Q.2 to Q.8.
All questions from Q.2 to Q.8 carry equal marks.

Q.1)Normalize the below table in third normal form [12]

Full Names	Physical Address	Movies rented	Salutation	Category
Janet Jones	First Street Plot No 4	Pirates of the Caribbean, Clash of the Titans	Ms.	Action, Action
Robert Phil	3rd Street 34	Forgetting Sarah Marshal, Daddy's Little Girls	Mr.	Romance, Romance
Robert Phil	5th Avenue	Clash of the Titans	Mr.	Action

Q.2) Describe the ETL process. Name any two open source ETL Tools [6]

Q.3) Describe S curve in the case of technological progress in the telecom industry by citing examples.[6]

Q.4) Apply Teece Model to predict the profitability of Apple iPhone in future. Suggest any changes in iPhone model [6]

Q.5) Describe various data warehouse schemas [6]

Q.6) Explain how credibility lever will help in driving large level change in the organization.[6]

Q.7) Draw As-is process swimlane diagram of the Training and Placement process at USME and write proper assumptions . [6]

Q.8) Draw a blockchain conceptual schema of any one of the following and explain with proper labelling the different entities :

auto part supply chain management of any automobile company or Performing KYC in any finance industry [6]

Total No. of Pages: 4

Delhi Technological University

USME, East Delhi Campus

End Semester Examination May 2019

Course:	**MBA**	Semester: **IV**	
Subject/Paper:	**Project Management**	Sub/Paper Code: **MGT-41**	
Max. Marks:	**60**	Max Time: **3 Hours**	

Questions 1 to 3 are compulsory. Attempt any one of remaining from questions 4 and 5.

Question 1: Give the best fit answer for each of 20 sub-questions in a table: (1x20 Marks)

i)With the _____ approach model, enough funds are allocated to the project to determine if the initial assumptions concerning costs, benefits, etc. were accurate. When the funds are gone, the assumptions are re-evaluated to determine what to do next.

a. scoring
b. window-of-opportunity
c. discovery-driven planning
d. criteria-based

ii)Effective Project Portfolio Management attempts to link the organization's projects _____.

a. exclusively to the budget
b. to the human resource constraints
c. directly to the goals and strategy of the organization
d. directly to the corporate culture

iii)As compared to the functional manager, the project manager should more often use what approach to solving problems?

a. An analytical approach
b. His or her positional power
c. A systems approach
d. A departmental approach

iv)Which of the following choices represent the best mix of skills and attributes for Project Team Members (PTMs)?

a. High technical skills, problem-solving ability, political sensitivity, goal orientation, high self-esteem
b. High technical skills, willingness to take orders from PM, self-control
c. Problem-solving ability, technical skills, modest opinion of self
d. Ability to take orders, good work habits, individual contributor

v)The process of managing risk in a project is:

a. done at the beginning of the project planning cycle.
b. selected by the management team.
c. not part of the PMBOK.
d. a dynamic process throughout the project life cycle.

P.T.O.

vi)What is the RACI matrix?

a. Resource Allocation & Cost Inventory matrix
b. Matrix of Responsible and Certified Individuals
c. Responsible, Accountable, Consult & Inform matrix
d. Recently Added Control Incident reporting matrix

vii)One well-known effort to improve project management is the creation of a formal _____ in many organizations, which is responsible for the evaluation and improvement of an organization's project management "*maturity*," or skill and experience in managing projects.

a. project management office
b. program management office
c. project management consortium
d. Chief Project Manager position

viii)The largest amount of effort applied to a project is during the _____ phase.

a. conception
b. planning, scheduling, monitoring, and control
c. selection
d. evaluation and termination

ix)The _____ is the key input for establishing the monitoring and control systems for the project.

a. schedule
b. budget
c. Organization chart
d. PERT Chart
e.

x)Which of the following is strongly recommended for managing projects?

a. Microsoft Project
b. The Normal Distribution
c. Simulation
d. No single tool is always recommended. The PM should investigate several appropriate tools.

xi)When a project is crashed it

a. is damaged badly.
b. is completed in less time.
c. costs less.
d. has fewer activities

xii)Resource Levelling aims to minimize variations in resource usage by:

a. Keeping resources constant
b. Shifting tasks within their slack allowances.
c. Eliminating slack
d. Signing fixed-cost contracts.

xiii)A good project monitoring system will require _____ as compared to commonly used systems:

a) Greater up-front planning time & investment.
b) Less cost.
c) More time & money, but reduce risk to zero.
d) Outside consultants to manage them.

xiv)Percent completion is important in EVA and its calculation is estimated by:

a. The 50-50 rule.
b. The 0-100 percent rule.
c. The critical input use rule.
d. There is no universally accepted calculation for percent completion.

IV-SEMESTER MBA (USME East Delhi Campus)

END SEMESTER EXAMINATION *May/June-2019*

PAPER CODE: MGT-42 & TITLE OF PAPER: Entrepreneurship Development

Time: 3:00 Hours *Max. Marks :60*

Instructions :

- Answer all question (Total 5 questions, having a and b parts)
- All questions carry equal marks
- Assume suitable missing data, if any.

Q.1[a] How entrepreneurship is important for economic growth of the any country?

[b] Explain various Traits and Qualities of an Entrepreneur. Differentiate between Manager, Administrator and Entrepreneur.

Q.2[a] Differentiate between Entrepreneurs and Intrapreneurs and support your answer with suitable example.

[b] What should be various considerations which an entrepreneur considers before launching any new business venture/ enterprise? Support your answer with suitable example.

Q.3[a] Explain various aspects of Business Feasibilities. How business feasibility exercise by any entrepreneur affects their business success.

[b] How business plan is formulated? Support your answer with suitable example of your choice.

Q.4[a] Explain the role of Small and Medium Enterprises (SMEs) in the economic development of India.

[b] Explain various managerial issues in running SMEs.

Q.5[a] What are the various institution and organisation which supports Management of Small Business in India, support your answer with suitable example of your choice of only one such institute/organisation.

[b] Why innovation is very important for any entrepreneur in free market economy of any country? Support your answer with suitable example.

Total No. of Pages 3 — 25 — Roll No. .....

IVth SEMESTER MBA

END SEMESTER EXAMINATION May-2019

MGT-43 Business Intelligence

Time: 3:00 Hours Max. Marks: 60

NOTE: All Questions compulsory. Attempt any five questions. Assume Suitable missing data, if any

Q1. Consider the following dataset, where each record represents the weather condition and the class attribute shows whether people generally play sports in that weather condition or not. Construct decision tree classifier using ID3 algorithm. Also, write various rule. [10+2]

Outlook	Temperature(°F)	Humidity (%)	Windy	Class
Sunny	75	70	True	Play
Sunny	80	90	True	Don't Play
Sunny	85	85	False	Don't Play
Sunny	72	95	False	Play
Sunny	69	70	False	Play
Overcast	72	90	True	Play
Overcast	83	78	False	Play
Overcast	64	65	True	Play
Overcast	81	75	False	Don't Play
Rain	71	80	True	Don't Play
Rain	65	70	True	Don't Play
Rain	75	80	False	Play
Rain	68	80	False	Play
Rain	70	96	False	Play

Q2. (i) Data warehousing is the only viable means to resolve the information crisis and to provide strategic information. List two reasons to support this assertion and explain them. [6]

(ii) What are the three major types of metadata in a data warehouse? Briefly mention the purpose of each type. Also, give examples supporting each type of meta data.[6]

Q3. (i) Why is data integration required in a data warehouse, more so there than in an operational application? Also, explain why data in data warehouse requires time element. [6]

(ii) You are the data analyst on the project team of an insurance company. You are building a data warehouse for a business intelligence system of the company. List the possible data sources from which you will bring the data into your data warehouse. State your assumptions. [6]

P.T.O.

Q4. (i) BigBook, Inc. is a large book distributor with domestic and international distribution channels. The company orders from publishers and distributes publications to all the leading booksellers. Initially, you want to build a data warehouse to analyze shipments that are made from the company's many stores. Determine the metrics or facts and the business dimensions. Prepare an information package diagram. [8]
(ii)-Explain the classification process with the help of a schematic diagram. [4]

Q5. (i) Consider the following data set consisting of the marks the of two subjects of seven individuals. Use k-means clustering two clusters the following dataset. [6]

Record	Subject 1	Subject 2
R1	1.0	1.0
R2	2.0	1.5
R3	4.0	3.0
R4	7.0	5.0
R5	5.0	3.5
R6	5.0	4.5
R7	4.5	3.5

(ii) Explain any three advantages of the STAR schema. Also describe the composition of the primary keys for the dimension and fact tables. [6]

Q6.(i) What do you understand by association rule mining? Apply Apriori algorithm to the following dataset to find strong association rules. Assume min_sup=25% and min_conf = 80%. [6]

Trans_ID	Item_ID
1	A,B,C
2	B,D
3	B,C
4	A,B,D
5	A,C
6	B,C
7	A,C
8	A,B,C,E
9	A,B,C

(ii) Differentiate between OLAP and OLTP. [6]

Q7.(i) Why is the entity-relationship modeling technique not suitable for the data warehouse? How is dimensional modeling different? [6]
(ii)Explain how do you compute the dissimilarity between objects described by the following type of variables: (a) Numerical variables (b) Asymmetric binary variable (c) Symmetric binary variables (d) Ratio scaled variables (e) Ordinal variables. [6]

-END-

Ramchandran

In the light of above statement, define potential appraisal and also mention the rationale behind it. How is an employee's potential appraised? You can also explain your answer with some real-life examples from corporate India.

QN. 6. What are the reasons for work-life imbalance of Indian women professionals? Reflect on the evils of work-life imbalance on women professionals in India. Suggest how to balance between work life and home life of women professionals in India.

QN. 7. Who are Generation - Y employees? Highlight their salient characteristics. What are the key issues involved in managing Generation Y employees?

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Total No. of Pages: 04

Second Semester MBA- BA

END SEMESTER EXAMINATION *May -2019*

PAPER CODE: MB 201 & TITLE OF PAPER: Human Resource Management

Time: 3:00 Hours *Max. Marks :* 60

Note : (i) Answer in all FIVE questions including Question Number 1 on Case study which is compulsory.
(ii) Question no 1 on Case Study carries 20 marks and question Nos. 2 to 7 carry 10 marks each.

QN. 1. Go through the following Case Study and answer the questions given at the end of the study:

XYZ Limited is a public sector undertaking with a staff strength of around 1,200 including 300 officers. As per the recruitment policy of the Company, most employees join as trainees and post completion of training, are absorbed at the lowest level. Thus, most start as Technician/Operator Trainees, and officers, as Management Trainees. The company avoided the direct recruitments for higher positions and endorsed the idea of internal job promotions and did so only in case of urgent requirements which could not be filled by eligible candidates from within the organization..

In eighties, the company urgently needed one Junior Engineer (Instrumentation) to take charge of one of its plants. At that time, the company had four Junior Engineers (JEs) in position who had joined as Management Trainees and had been regularized just the previous year. Immediately above them was an Assistant Engineer,

who in turn reported to the Project Manager. The company released an advertisement for the post of JE, seeking applications from those with at least two years' experience in the field. One Mr. Ramesh Chaudhari, who had four years' experience in a private concern applied and was selected. He found the terms of appointment lucrative and joined the company in September 1983. As four JEs were already working in the company, Chaudhari became the Junior-most JE. As per the promotion policy of the company; the four JEs would become eligible for promotion to the post of 'Assistant Engineer' in 1986 (on completion of four years' service) and Chaudhari in 1987.

In October 1984, the Assistant Engineer left his job and hence, the company decided to fill the vacancy by direct recruitment. In the advertisement it was stipulated that the applicants should have a minimum of five years' experience. Chaudhari met the specification since he had four years previous experience plus one year in XYZ Ltd. Therefore, he applied for the post through proper channel. The company decided to call the eligible candidates for interview. Accordingly, Chaudhari was also called along with the external candidates. He performed exceedingly well in the interview and was found suitable for the post. The General Manager (GM), who was chairman of the selection committee, congratulated Chaudhari and told him that he had been selected.

However, the GM changed his mind subsequently and asked the Personnel Officer not to issue the appointment letter to Chaudhari. He gave the following reasons for reverting his decision:

1. Mr. Chaudhari would get a higher post after completion of just over one year's service in the organization as against the normal requirement of four years.
2. When Mr. Chaudhari joined, he was junior to the four JEs by about one year. If he was offered the higher post, he would suddenly become their boss. This would demoralise the JEs-in

fact they had already decided to seek jobs elsewhere if Chaudhari became Assistant Engineer.

The GM was convinced that he could not afford to lose four JEs and therefore, he chose not to appoint Chaudhari.

Questions

1. If Chaudhari had been an external candidate, would he have got the job? As an internal candidate, did he deserve to be treated in a different way?
2. Did the management make a mistake in calling Chaudhari for an interview and selecting him, when he was "too junior" in the organization?

QN. 2. "If I have six hours to chop down a tree, I would spend the first four sharpening the axe." - *Abraham Lincoln*

In the light of this statement, appreciate the importance of human resource planning (HRP) in modern day organizations. Also delineate the HRP process generally followed by Indian business organizations.

QN. 3. What are the objectives of employee training? Distinguish between training, development and education. Discuss the steps involved in conducting a training programme in a systematic way.

QN. 4. Identify the causes of employee grievance. Justify the need for grievance redressal. Also, outline the grievance redressal procedure followed by Indian organizations.

QN. 5. "People are like icebergs. What you see above the surface (i.e. performance) is only a small part. A large part of the attributes needed to perform excellently in a future job, which I call potential, is not immediately visible. It is hidden below surface." - *K.*

Total No. of Pages 4

II SEMESTER, MBA(BA)

END SEMESTER EXAMINATION *May/June-2019*

MB-203 FINANCIAL MANAGEMENT

Time: 3:00 Hours *Max. Marks: 60*

Note: All questions are compulsory

Q.1 Write short notes on **any three** of following: (5 Marks each)

a) Time value of money
b) Profitability Index
c) Wealth maximization
d) Trading on Equity

Q.2 A. Certainty Enterprises is considering two projects A and B with initial outlays of ₹50,00,000 and ₹60,00,000. The inflows of the projects are sensitive to the economic conditions that are expected to prevail over 10 years; the life of each of the project. The cash flows for the 4 different economic conditions of Excellent, Good, Average and Poor with their respective probabilities are as below:

		Cash Flows (₹Lakhs)	
	Probability	A	B
Initial cost	Certain	-50	-60
Excellent	0.30	15	18
Good	0.20	12	14
Average	0.30	10	12
Poor	0.20	8	7

Required rate of return is 15%.

a) What is the net present value of the projects under the different economic conditions? (6 Marks)
b) What NPV you expect for each of the project (ENPV)? (2 Marks)
c) If the life of both projects was only 1 year, what would be risk associated with the project based on standard deviation and coefficient of variation? (4 Marks)

Q.2.B. The management of Capital Choosers Ltd has 5 projects A, B, C, D and E on hand. The initial outlays, annual cash flows and life of projects is given below:

	Project A	Project B	Project C	Project D	Project E
Initial Outlay (₹Lakhs)	100	150	175	180	135
Expected annual cash flow (₹Lakhs)	22	34	49	43	37
Life of project years	10	9	6	8	7

a) Find NPV and Profitability Index of each project assuming the cost of capital to be 15%. (5 Marks)

b) Rank project on basis of PI criteria. Which project will be chosen if there is a budget constraint of ₹500 lakh and projects are divisible? (3 Marks)

Q.3.A. Bhaskar Manufacture Ltd. has equity share capital of ₹500,000 (face value of ₹ 100). To meet the expenditure of an expansion program, the company wishes to raise ₹300,000 and is having following alternatives as sources of funds:

Plan A: To have full money from issue of equity
Plan B: To have ₹ 100,000 from equity shares and ₹ 200,000 from borrowings from financial institution at 10% p.a.
Plan C: To have full money from borrowings at 10% p.a.

The company has present earnings of ₹150,000. The corporate tax rate is 50%.

a) Calculate EPS for all plans & advise the most suitable plan to raise required funds.
((3x 2)+ 2 = 8 Marks)

Q.3.B. Calculate the degree of operating leverage and degree of financial leverage according to the data given below for companies A and B: (3X2 = 6 marks)

	A	B
Output in Units	70,000	25,000
Fixed costs	10,000	13,000
Variable cost/ unit	0.2	1.5
Interest on borrowed funds	5,000	18,000
Selling price per unit	0.6	5

Q.3.C. Financial leverage is a double-edged sword. Do you agree, why?

OR —31—

Q.3

Brightways Ltd. faces three possible economic conditions very poor, poor, normal and good. Brightways' possible level of sales and operating expenses with their probability of occurrence are given in table below:

Expected Sales, EBIT, ROI with associated probabilities

	Poor Poor		Normal		Good
Probability	0.10	0.15	0.35	0.30	0.05
Sales	660	710	800	880	1160
Costs:					
Variable cost	330	355	400	440	580
Fixed cost	280	280	280	280	280
Total Cost	610	635	680	720	860
EBIT	50	75	120	160	300
ROI	10%	15%	24%	32%	60%

The company is considering two financial plans:

1. Raise entire funds by issuing 50,000 ordinary shares at 10 per share
2. Or to raise ₹250,000 by issuing 25,000 shares of ₹10 each and borrow 250,000 at 15%.

The tax rate of 50%.

a) What are the effects of alternative plans on shareholders' earnings? (10 marks)

b) Does state of economy have a bearing on choice of financial plan, please state in context of information given about Bright ways. (3 marks)

c) Financial leverage is a double-edged sword. Do you agree? (2 Marks)

Q.4 A. Mr Sunil takes a loan of INR 100,000 at 14% rate of interest for purchasing a car. The loan has to be repaid over the next 5 years.

a) Estimate the equal annual instalment to be given by Mr Sunil to repay his principal plus interest in the 5 years. (3 Marks)

b) Prepare schedule of loan amortization (5 Marks)

Q.4 B. How much amount should be invested now so that Mr Sunil receives INR 100,000 each year in perpetuity at an interest rate of 10%? (2 Marks)

Present value interest factor of an (ordinary) annuity of $1 per period at i% for n periods, PVIFA(i,n).

Period	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	1.808	1.783	1.759	1.736	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528
3	2.624	2.577	2.531	2.487	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.387	3.312	3.240	3.170	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589
5	4.100	3.993	3.890	3.791	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	4.767	4.623	4.486	4.355	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	5.389	5.206	5.033	4.868	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605
8	5.971	5.747	5.535	5.335	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	6.515	6.247	5.995	5.759	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	7.024	6.710	6.418	6.145	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192
11	7.499	7.139	6.805	6.495	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327
12	7.943	7.536	7.161	6.814	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439
13	8.358	7.904	7.487	7.103	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533
14	8.745	8.244	7.786	7.367	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611
15	9.108	8.559	8.061	7.606	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675
16	9.447	8.851	8.313	7.824	7.379	6.974	6.604	6.265	5.954	5.668	5.405	5.162	4.938	4.730
17	9.763	9.122	8.544	8.022	7.549	7.120	6.729	6.373	6.047	5.749	5.475	5.222	4.990	4.775
18	10.059	9.372	8.756	8.201	7.702	7.250	6.840	6.467	6.128	5.818	5.534	5.273	5.033	4.812
19	10.336	9.604	8.950	8.365	7.839	7.366	6.938	6.550	6.198	5.877	5.584	5.316	5.070	4.843
20	10.594	9.818	9.129	8.514	7.963	7.469	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870
25	11.654	10.675	9.823	9.077	8.422	7.843	7.330	6.873	6.464	6.097	5.766	5.467	5.195	4.948
30	12.409	11.258	10.274	9.427	8.694	8.055	7.496	7.003	6.566	6.177	5.829	5.517	5.235	4.979

Present value interest factor of $1 per period at i% for n periods, PVIF(i,n).

riod	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	
1	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.
2	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.
3	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.
4	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0
5	0.784	0.747	0.713	0.681	0.650	0.621	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0
6	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0
7	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0
8	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0
9	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0
10	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0
11	0.585	0.527	0.475	0.429	0.388	0.350	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0
12	0.557	0.497	0.444	0.397	0.356	0.319	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0
13	0.530	0.469	0.415	0.368	0.326	0.290	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0
14	0.505	0.442	0.388	0.340	0.299	0.263	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0
15	0.481	0.417	0.362	0.315	0.275	0.239	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0
16	0.458	0.394	0.339	0.292	0.252	0.218	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0
17	0.436	0.371	0.317	0.270	0.231	0.198	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0
18	0.416	0.350	0.296	0.250	0.212	0.180	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0
19	0.396	0.331	0.277	0.232	0.194	0.164	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0
20	0.377	0.312	0.258	0.215	0.178	0.149	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0
25	0.295	0.233	0.184	0.146	0.116	0.092	0.074	0.059	0.047	0.038	0.030	0.024	0.020	0.016	0.013	0

Roll No. _____

Total No. of Pages: 2

USME, DTU East Campus

2nd Semester MBA (Business Analytics)

END SEMESTER EXAMINATION- MAY 2019

PAPER CODE: MB 204 TITLE OF PAPER- **Data Warehousing and Data Mining**

Time: 3:00 Hours *Max. Marks: 60*

Note: Write your Roll no. on the top of this question paper.
Marks are indicated against each question. Parts of a question must be answered together.

Q1. Answer **all** the following questions: **[5* 4 marks = 20 marks]**

a) Describe the characteristics of different categories of clustering algorithms.

b) Differentiate between OLAP and OLTP systems.

c) Explain the architecture of a data mining system with the help of a schematic diagram.

d) What is principal component analysis? Explain the steps involved.

e) Explain the representation of text documents, weighting scheme and retrieval of documents using vector-space model with an example.

Q2. Attempt **any four** out of the following: **[4* 4 marks = 16 marks]**

a) Describe ROLAP and MOLAP models.

b) Define data cube. Explain the operations of data cube with suitable examples.

c) Explain the different types of data transformation methods with example.

d) What is data discretization? Give two methods of concept hierarchy generation for numeric data.

e) Describe in detail the application of data mining in retail or finance sector by taking two scenario cases.

Q3. Attempt **any three** out of the following questions: **[3* 6 marks = 18 marks]**

a) Suppose that a data warehouse for Big University consists of the following four dimensions: student, course, semester, and instructor, and two measures count and avg grade. When at the lowest conceptual level (e.g., for a given student, course, semester, and instructor combination), the avg grade measure stores the actual course grade of the student. At higher conceptual levels, avg grade stores the average grade for the given combination.

(i) Draw a snowflake schema diagram for the data warehouse.

(ii) Starting with the base cuboid [student; course; semester; instructor], what specific OLAP operations (e.g., roll-up from semester to year) should one perform in order to list the average grade of CS courses for each Big University student.

b) Describe the k-means clustering algorithm in detail and give its limitations.

c) Explain different types of data mining functionalities with examples.

d) Find the clusters from given euclidean distance matrix of six points by using single link hierarchical clustering algorithm and draw the dendrogram.

	P1	P2	P3	P4	P5	P6
P1	0	0.24	0.22	0.37	0.34	0.23
P2		0	0.15	0.20	0.14	0.25
P3			0	0.15	0.28	0.11
P4				0	0.29	0.22
P5					0	0.39
P6						0

Q4. Answer **any three** out of the following questions: **[3* 2 marks = 6 marks]**

a) What is data warehouse?

b) Discuss the issues to be considered during data integration.

c) Describe binning with an example.

d) Explain the types of sampling with an example.

***

Lauren Home collection. At a lower price point, polo blue labels have been developed, and will be distributed exclusively in PRL stores in the USA, and in specialty stores in Europe, Asia and Australia. In arrangement with its licensee in department stores, the company has developed Lauren for women and Lauren bedding and bath products. The recently acquired club Monaco concept (formerly a fifteen category Canadian company) has been rationalized to three categories of men's women's and accessories. This brand extension strategy has required and will continue to require, a very large advertising budget. The company uses a combination of television and multi page magazine advertising intends to illustrate the luxurious aspect of the brands. Advertising expenses in 2002 amounted to almost $80 million, or approximately 4 percent of net sales.

The global strategy

Based on a belief that there are enormous opportunities in Western Europe the company has plans to open new Ralph Laruen stores in Europe through the next several years. similarly development is planned in Asia, specifically in Japan, Hong Kong and Korea, these latter countries being managed by licensed partners. Currently , the USA accounts for almost 73 percent of company sales. Europe and Japan represent approximately 10 percent each, and Canada, Korea, Australia and other small markets account for the remaining 7 percent of sales. Thus in the past Lauren has relied heavily on US sales. Much of this has come from department stores.

Case Questions –

[i] What is the company's growth strategy, mention in brief ? [6]

[ii] Company targets which segment of consumers for its lifestyle brands and why do you think they select segment give reasons from firm's perspectives ? [8]

[iii] Company has major sales from US market i.e. 73%. Is it too much dependent on one market and should it focus extensively on other market as well. Justify your answer . [6]

DELHI TECHNOLOGY UNIVERSITY

USME, EAST DELHI CAMPUS

END-TERM EXAMINATION -2018-19 — May – June

COURSE: INTERNATIONAL MARKETING
SUBJECT CODE : MB -205
MAX MARKS : 60
Sem - II
END SEMISTER
MAX TIME – 180 MIN.

ALL QUESTIONS ARE COMPULSORY IN PART A & B
PART A 5 QUESTIONS OF 8 MARKS EACH

PART –A

Q.1 "Reduction in import tariffs has resulted in bringing up new non-tariffs marketing business by developed countries". Critically examine the statement with the help of illustrations from trade.

Q.2 "Effective international marketing research is crucial to present marketing failures". Justify the 1 statement with suitable examples.

Q.3 As the international marketing manager of Avon bicycles, identify alternative channels of distribution for bicycles in African countries. Develop criteria for appropriate marketing channels.

Q.4 "Communication is crucial to a firm's success in international markets". Justify statement with suitable illustration from commercial movies.

Q.5 Critically evaluate India's rise on the global stage and identify international marketing opportunities in India.

Contd – 2

SECTION-B (20 MARKS)

CASE STUDY (COMPULSORY)

PLANET RALPH : THE GLOBAL MARKETING STRATEGY OF POLO RALPH LAUREN

Deirdre Bird, Providence College, and Helen Caldwell, Providence College

Polo Ralph Lauren (PRL) is a highly successful US company. The thirty-fifth anniversary of the company has been covered in glowing terms across the globe. For example, Ralph Lauren was interviewed for the prestigious British Broadsheet, The Sunday Times, followed by a lecture at the British Museum in London. Vogue magazine profiled Lauren as "The man behind the Mega-Brand" while making the cover of both GQ (as a Man of the year) and Architectural Digest. Time magazine presented Ralph Lauren as "A Bronx Cowboy in Europe," Outlining Lauren's rise from Bronx kid Ralph Lifschitz to world famous designer Ralph Lauren.

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Today's world of luxury in fashion-

The primary customers for luxury products tend to be women aged between 30 and 50 in the upper income brackets , where the household earns over $ 100,000. In the USA , this categorization accounts for over fifteen million households. In the upper middle category (with household incomes of $ 75,000 to $ 100,000), there are an additional twelve million households. However, in what has come to be termed the "democratization of luxury, " people in all income brackets want to participate in the luxury market, even if that means buying nothing more than a $4 chai latte at Starbucks, or a $20 scarf at Gucci. Ralph Lauren recognized this himself when he described the desire for luxury as "aspirational".

Approximately thirty five companies share 60 percent of the luxury goods market. The six top competitors, one of which is Polo Ralph Lauren, have annual revenues greater than $1 billion; fifteen to twenty companies have revenues between $500 million and $1 billion. And ten have revenues between $100 million and $500 million. These companies tend to have a product focus and thus do not all compete on

equal terms in the various luxury categories. For instance, Richemont, a Swiss conglomerate, deals largely in watches, jewelry, and writing instruments, with brands such as Cartier, Piaget, and Mont Blanc. Hermes focuses on leather goods, selling ladies' bags for upwards of $4000. LVMH is the industry leader in luxury goods, followed by Richemont, and Gucci Group. Coming in fourth in the industry is Polo Ralph Lauren.

The Polo Ralph Lauren Concept

PRL is a family controlled company, in that it's Chairman and CEO is designer and founder Ralph Laruen. However, the company is quoted publicity on the New York Stock Exchange. The company derives its revenues from three sources : retail, wholesale and licensing. The retail segment operates over 236 outlet and full price stores, including the magnificent flagship stores in Manhattan, London, Paris, Boston and Brusseles. Retails sales contributed almost $1 billion to revenue in 2002. The wholesale segment consists of two units, Polo Brands and collection Brands, with each unit selling its own discrete brands to department and specialty stores, and to PRL owned and licensed retail stores. This segment is responsible for the majority of the corporation's net sales (almost $1.2 Billion in fiscal year 2002). The licensing segment accounts for almost 10 percent of total sales, generating revenue from royalties through licensing alliances, whereby the licensee is granted the right to use the company's trademarks in connection with manufacturing and sales of certain products in specific geographical areas. As a result of a corporate strategy of increasing its global presence. PRL acquired its Italian licensee, Poloco S.A.S. thus allowing for greater integration of its European wholesale operations.

The Polo Ralph Lauren strategy

PRL intents to grow by brand extension and by globalization. In its brand extensions , the company aims to expand by "creating luxury and lifestyle brands that inspire people to live their dreams". The company has developed apparel labels which segment the upper end of the luxury market into Purple Label, Women's collection and black label, and in its home furnishings division it has developed the Ralph

Total No. of Pages 3

Roll No.....

II SEMESTER

MBA (Business Analytics)

END SEMESTER EXAMINATION *May/June-2019*

PAPER CODE MB 206 &

TITLE OF PAPER Operations and Supply Chain Management

Time: 3:00 Hours *Max. Marks: 60*

Note: Assume suitable missing data, if any.
Read the Instructions Carefully with each question

Q1. Short Answer Questions
(Attempt any 5 parts from (a) – (f), 4 Marks each) (20)

a. Briefly describe the alternative methods of capacity build-up? Discuss the advantages and disadvantages of Expansionist versus Wait-and-See expansion strategy.

b. Inventory is a necessary evil. Explain.

c. Briefly discuss four dimensions of quality a consumer looks for in manufactured products.

d. State the fundamental objective of a firm's location strategy. Discuss two major factors that determine the selection of location by an industrial goods-producing firm.

e. Define Supply Chain. What is the primary objective of a supply chain? List the key attributes of an effective supply chain management and important flows in the supply chains.

f. Briefly explain primary functions and relations between the operations & supply chain management and marketing function of an organisation.

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Q2. Long Answer Questions

(Attempt any 3 parts from (a) – (d), 6 Marks each) (18)

a. Describe the TQM philosophy and identify its major characteristics. Why is Total Quality Management much more effective than end of production line inspection?

b. What do you mean by facility layout planning? State any two objectives of facility layout decision. Briefly describe process and product layout, giving an example of a suitable industry to which it is applicable.

c. Define Procurement. Discuss two functions of procurement. Different between the transactional and collaborative supplier relationship management.

d. What do you understand by selective inventory control? Discuss the ABC classification of inventory with an example.

Q3. Applications based questions

(Attempt any 2 from part (a) – (c)) (22)

a. A company is designing a product layout for a new product. It plans to use this production line 8 hours a day in order to meet a schedule of 400 units per day, The tasks necessary to produce this product are detailed in the table below.

Task	Predecessor	Time (seconds)
A	-	50
B	A	36
C	-	26
D	-	22
E	B, D	70
F	C, E	30

i. Draw the network diagram describing the precedence relation given in the above table.

ii. Without regard to a production schedule, what is the minimum possible cycle time (in seconds) for this situation? What is the required cycle time (in seconds) in order to meet the schedule?

iii. Balance this line with 4 work stations. Compute the utilization of each workstation.

b.

i. Discuss one application for both short-range and long-range forecasts in operations and supply chain planning.

ii. Use exponential smoothing with $\alpha = 0.2$ to calculate smoothed averages and a forecast for period 7 from the data below. Assume the forecast for the initial period is 7. Calculate the mean absolute parentage error for the developed forecasted model.

Period	1	2	3	4	5	6
Demand	10	8	7	10	12	9

c. Webster Chemical Company produces mastics and caulking for the construction industry. The product is blended in large mixers and then pumped into tubes and capped. Webster is concerned whether the filling process for tubes of caulking is in statistical control. The process should be centered on 8 ounces per tube. Six samples of eight tubes each are taken and each tube is weighed in ounces. Draw control chart for range and conclude on process variability. (Given $D_4 = 1.864$, $D_3 = 0.136$)

	Observations							
Sample	1	2	3	4	5	6	7	8
1	7.98	8.34	8.02	7.94	8.44	7.68	7.81	8.11
2	8.23	8.12	7.98	8.41	8.31	8.18	7.99	8.06
3	7.89	7.77	7.91	8.04	8.00	7.89	7.93	8.09
4	8.24	8.18	7.83	8.05	7.90	8.16	7.97	8.07
5	7.87	8.13	7.92	7.99	8.10	7.81	8.14	7.88
6	8.13	8.14	8.11	8.13	8.14	8.12	8.13	8.14

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II SEMESTER **MBA(Business Analytics)**

END SEMESTER EXAMINATION *May/June-2019*

PAPER CODE: MB207& TITLE OF PAPER: Predictive Modelling

Time: 3:00 Hours *Max. Marks: 60*

Note: Answer any five questions out of the given six questions.
All questions carry equal marks.
Assume suitable missing data, if any.

Q.1[a] Differentiate between classification and regression algorithms in machine learning. (6)

[b] The average room prices (in US$) paid at hotel *"Homeaway"* by various nationalities while travelling abroad (away from their home country) in 2018 were recorded as follows:

174 161 167 171 163 141 147 154

i) Compute *Z* score. Are there any outliers? Explain. (3)

ii) Describe the shape of the above data set. (3)

Q.2[a]What is the difference in calculating average value through the various measures of central tendencies (mean, median and mode)? What are the advantages and disadvantages of each? (6)

[b] Analysis of the monthly wages of twofirms gives the following data:

	Firm A	Firm B
Number of workers	500	600
Variances	81	100
Average Wages (in INR)	186	175

i) Which firm pays out a larger wage bill? (2)

ii) In which firm does greater variability occur? (2)

iii) What is the average wage if firm A and firm B are combined? (2)

Q.3 An agent for a residential real estate company in a suburb located outside of Washington, DC; has the business objectives of developing more accurate estimates of the monthly rental cost for apartments. Towards that goal, the agent would like to use the size

of an apartment, as defined by square footage to predict the monthly rental cost. The agent collects the following data of 7 one-bedroom apartments:

size(in'00sq.ft.)	3	5	4	7	2	1	9
monthly rental cost(in'000$)	6	9	8	11	4	3	14

i) Construct a scatter plot. (3)

ii) Use least square method to determine the regression model for the above problem. (3)

iii) Interpret the meaning of regression coefficients b_0 and b_1 in this problem. (3)

iv) Predict the monthly rent for an apartment that has size as 800 sq. ft. (3)

Q.4[a] The residuals for 10 consecutive time periods are as follows:

Time Period	1	2	3	4	5	6	7	8	9	10
Residual	-5	-4	-3	-2	-1	+1	+2	+3	+4	+5

Compute Durbin-Watson statistic to check the autocorrelation among the residuals. (6)

[b] The following ANOVA summary table is for multiple regression model with two independent variables. Complete the table and find Adjusted R^2 : (6)

Source	Degree of freedom	Sum of squares	Mean squares	F statistic
Regression	2	60		
Error	18	120		
Total	20	180		

Q.5[a] A prospective MBA student wanted to predict starting salary upon graduation, based on program per- year tuition. If $RSS=21.8$ and $TSS=64$ for this problem; determine the coefficient of determination R^2 and interpret its meaning. (6)

[b] Consider the following logistic regression equation:

$$ln(\text{Estimated odds ratio})=0.1+0.5X_1+0.2X_2$$

i) Interpret the meaning of the above logistic regression coefficients. (2)

ii) If $X_1=2$ and $X_2=1.5$, compute the estimated odds ratio. (2)

iii) On the basis of results of (ii), compute the estimated probability of an event of interest. (2)

Q.6 Consider the following correlation matrix, related to three variables with unities in the diagonal spaces:

Variables		Variables		
		A	B	C
	A	1.000	0.709	0.204
	B	0.709	1.000	0.051
	C	0.204	0.051	1.000

Use the Principal Component Method of factor analysis to determine the factor loadings the first Principal Component for the above matrix. (1

Total no. of Pages:01 —41— Roll no.....

2nd SEMESTER MBA (Analytics)

END SEMESTER EXAMINATION *May/June-2019*

PAPER CODE : MB 208

TITLE OF PAPER : Changing Paradigm in Leadership

Time: 3:00 Hours *Max. Marks : 50*

Note: Answer any five questions.
All questions carry equal marks. (5+5 = 10)

Q.1 [a] What are the different kinds of social Power?
[b] Discuss their suitability for different situations.

Q.2 [a] What are the 7 constituent elements of a State according to the Arthashastra?
[b] Enumerate the essentials of Foreign Policy according to Chanakya.

Q.3 [a] Discuss Ethos, Pathos and Logos as means of persuasion.
[b] What are Inductive Reasoning and Deductive Reasoning?

Q.4 [a] Highlight Creative tools that leaders can use for idea generation to solve problems.
[b] Discuss the Benefits of Innovation in the organisational context

Q.5 [a] How can -- 'Delaying Gratification help a leader reach his goals'
[b] Discuss i) the dark side of Charisma, ii) unethical persuasion

Q.6 [a] Explain the dimensions of Transformational Leadership
[b]Enumerate the differences between Transformational Leadership and Transactional Leadership

6.1.a) Calculate intercept and slope parameters using MLE for the following model.

$$y_t = \beta_0 + \beta_1 x_t + \varepsilon_t$$

6.1.b) Why MLE cannot be used for estimation in ARCH/GARCH model?

6.2) (5 marks)

6.2.a) A coin is flipped 100 times. Given that there were 40 heads, find the MLE for the probability p of heads.

6.2.b) For exponential distribution, there were 10 observations as described below:

x	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}
Value	2	3	1	3	4	2	4	1	3	1

Find MLE estimate for λ.

Q7

7.1) (5 marks) Define following:

(i) Multicollinearity
(ii) ARCH-in-mean
(iii) Unbiased estimates
(iv) Log-Log transformation and interpretation
(v) Type-1 error

7.2) (5 marks) Define SLR for two variable model (y *and* x_1), next define MLR using a three-variable model (y *and* x_1, x_2). When does SLR and MLR estimates on slope estimate of x_1 are equal? Define and derive omitted variable bias for slope estimate of x_1 and use this explain positive and negative bias.

(9)

Total No. of Pages 4 *Roll No.....*

IV SEMESTER **MBA**

END SEMESTER EXAMINATION ***May/June-2019***

PAPER CODE: MGF-08
TITLE of Paper: Financial Modeling and Analysis

Time: 3:00 Hours *Max. Marks : 60*

Note : Answer any 6 out of 7 questions
All questions carry equal marks. (10)
Assume suitable missing data, if any.

Q1)

1.1) (5 marks) What is meant by weak stationarity? Please write the properties of integrated series.

1.2) (5 marks) From the U.K. private sector housing starts (X) for the period 1948 to 1984, Terence Mills obtained the following regression results:

$$\widehat{\Delta X}_t = 31.03 - 0.188 X_{t-1}$$
$$\text{se} = (12.50) \quad (0.080)$$
$$(t =)\tau \quad (-2.35)$$

Note: The 5 percent critical τ value is −2.95 and the 10 percent critical τ value is −2.60.

1.2.a. On the basis of these results, is the housing starts time series stationary or nonstationary?
Alternatively, is there a unit root in this time series? How do you know? (3 marks)

1.2.b. If you were to use the usual t test, is the observed t value statistically significant? On this basis, would you have concluded that this time series is stationary? (1 mark)

1.2.c) What is meant by a trend-stationary process (TSP) and a difference-stationary process (DSP)? (1 mark)

Q2)

2.1) (5 marks) What is the error correction mechanism (ECM)? What is its relationship with cointegration?

2.2) (5 marks)

2.2.a) (3marks) What is a random walk (model)? "For a random walk stochastic process, the variance is infinite." Do you agree? Why?

2.2.b) (2 marks) What is the connection between cointegration and spurious regression?

Q3)

3.1) (5 marks) For dependant variable Y, three models were estimated. The results are given below:

	Model 1	Model 2	Model 3
Constant	39.4380 (20.2392)	40.5082 (20.8204)	43.1662 (10.0172)
X_1	0.0054 (4.4417)	0.0016 (3.4848)	0.0014 (2.6836)
X_2	0.2833 (9.9599)	0.2499 (8.0803)	0.1491 (1.0010)
X_3	—	-6.28E-08 (-2.4060)	-5.54E-08 (-1.9612)
X_4	—	—	0.0008 (0.6918)
Adjusted R^2	0.7741	0.7892	0.7904
F value	140.5332	101.0906	75.4496

3.1.a) Which model will you choose and why?

3.1.b) On the basis of restricted F test decided between model 1 and 2.

3.2) (5 marks) List and explain desirable properties of good estimator.

Q 4)

4.1) (5 marks)

4.1.a) What is the difference between t-test and F-test?

4.1.b) Using a data, following two regression results were obtained (Parenthesis include standard error of the estimator):

$$y = 11.19 + 0.0689x_1 + 0.0126x_2 + 0.00098x_3 + 0.0144x_4 + 0.0108x_5$$

(5.21) (0.0121) (0.0026) (0.00110) (0.0161) (0.0072)

$N = 353$, $SSR = 183.186$, $R^2 = 0.6278$

$$y = 11.12 + 0.0713x_1 + 0.0202x_2$$

(5.21) (0.0125) (0.0013)

$N = 353$, $SSR = 198.311$, $R^2 = 0.5971$

Test the statistical significance of x_1, x_2 *and* x_3 individually and jointly. While doing so, also write down the degrees of freedom for test statistic utilized to test the significance.

4.2) (5 marks)

4.2.a) Describe the nature of stochastic error term **(2 marks)**

4.2.b) What of goodness of fit? How appropriate is the game of maximizing R^2? **(3 marks)**

Q5)

5.1) (5 marks) State the linearity property of slope parameter ($\hat{\beta}$), state the properties of linear weight parameter (k_i). For the following data, find out slope parameter ($\hat{\beta}$) and $k_i s$ and using these prove the linearity property for slope parameter:

x_i	y_i
95	85
85	95
80	70
70	65
60	70

5.2) (5 marks)

5.2.a) Write down the ARCH and GARCH models. What is the condition of stationarity of ARCH and GARCH models?

5.2.b) Describe the steps involved in LM testing procedure in testing for ARCH effects.

Q6)

6.1) (5 marks)

Total No. of Pages:01

4th SEMESTER — — 44 — Roll No.....

MBA

END SEMESTER EXAMINATION *May/June-2019*

PAPER CODE: MGH-07

TITLE OF PAPER: Performance Management

Time: 3:00 Hours *Max. Marks : 60*

Note: Answer any five questions.
All questions carry equal marks. (6+6 = 12)

Q.1 [a] What are the steps needed to build an effective workforce for an MNC?

[b] What factors should be considered in the selection of an expatriate (person staying outside native country)?

Q.2 [a] Define HRM and outline its Objectives and Features.

[b]Why has the HRM function increased in stature and influence in many organisations?

Q.3 [a] What are the Objectives of Compensation Planning system?

[b] How do organisations conduct Wage and salary surveys?

Q.4 [a] What are the characteristics of an Effective Performance Appraisal System?

[b] Discuss i) 360 degree Feedback System; and ii) Confidential Report evaluation method

Q.5 [a] Enumerate the benefits of Training for Employees and the benefits to Employers

[b] How are Training and Development different from one another?

Q.6 [a] What are the factors influencing Compensation Levels?

[b] Discuss the reasons for Wage Differentials in organisations.

Total No. of Page: 2

4th Semester MBA

END SEMESTER EXAMINATION- May 2019

PAPER CODE: MGH-08 PAPER-Training and Development

Time: 3:00 Hours *Max. Marks: 60*

All Questions are compulsory.

1. Comment on following real life business problems. (6*5=30 Marks)

a) Assume that you have to prepare older employees with little computer experience to attend a training program on use of internet. How will you ensure their high level readiness for training? How will you determine their readiness for training?

b) Assume that you are training a group of employees to repair a loose wire in an electrical socket. After demonstrating the procedure, you let the trainee to do it. Trainee correctly demonstrate the process and repairs the connection in first attempt. Has learning occurred?

c) There is an increase in number of complaints by various departments regarding delays in filling up of vacancies: Long recruitment cycle. You as the head of the department want to identify the reason for this issue. Identify the dimensions that you would explore in order to nip the problem being expressed.

d) Assume that you are working as Training Manager in a manufacturing company. Management has significantly reduced the training budget for the year. Discuss how would you utilize the technology-based training methods to address the issue of resource constraint.

e) A company has recently hired 100 young employees to head its 100 branches. These branches are already manned by employees in their late forties and fifties. As head of Learning and Development department, what type of management development program will

you introduce to help young recruits to gain acceptance and appreciation of more experienced and aged employees.

2. '*Assessment of training need is the first and most important step in designing a training program*'. Elaborate the statement? How e-learning is poised to revolutionize the domain of training and development in India. (3+7=10 Marks)

3. Why should we consider age and generational differences as part of need assessment? Discuss the relevance of self-efficacy in training need assessment. (5+5=10 Marks)

4. Discuss various models of training and development. Discuss significance of pre-training preparation for trainer and trainee both. (6+4=10 Marks)

Total No. of Pages (4)___ *Roll No. .....*

4TH SEMESTER MBA (East Campus)

END SEMESTER EXAMINATION *May-2019*

PAPER CODE : MGI 07 &

TITLE OF PAPER: E-Governance

Time: 3:00 Hours *Max. Marks : 60*

Note : Attempt any one question in between Q.6 and Q.7

Q.1) Explain the Strategic Importance of Collaboration in E-Governance [6]

Q.2) Explain the significance of Feedback system in improving E-Governance Performance [6]

Q.3) Describe how the competence level of actors influence the E-Governance Project [12]

Q.4) Explain the SAP-LAP framework with an appropriate example [12]

Q.5) Explain the drivers of E-Governance project performance in detail [12]

Q.6) Draw the Hypothesis for measuring performance parameters in NAM project and explain with logic (micro and macro variables) why particular hypothesis is taken [12]

Q.7) Conduct Environment Analysis for any E-Governance project [12]

Total No. of Pages 3

RGH No. .....

IVth SEMESTER

MBA

END SEMESTER EXAMINATION May-2019

MGI-10 E-Learning and Knowledge Management

Time: 3:00 Hours *Max. Marks: 60*

NOTE: Question 1 is compulsory. Attempt any 5 questions from the remaining. Assume Suitable missing data , if any

Q1. Answer the questions following:

(i) What do you understand by cross-validation? Explain its types. [3]

(ii) Why accuracy is not a suitable performance metric to evaluate a classifier developed from imbalanced data. [3]

(iii) Differentiate between tacit and explicit knowledge. [3]

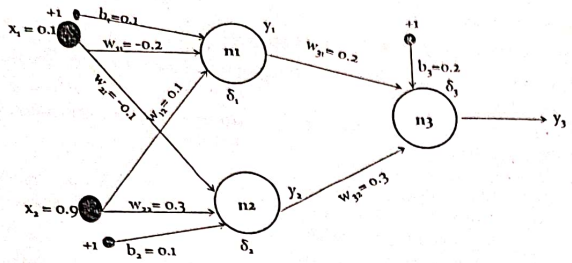
(iv) Differentiate between data, information and knowledge with the help of a example. [3]

Q2. a) Consider the following dataset for a credit card promotion company. The credit card company has authorized a new life insurance promotion. We are interested in building a classification model for deciding whether to send the customer promotional material. Build a Naïve Bayes classifier and predict the label of the following record. X= (MP=Y WP=Y, CCI=N, S=F). [6]

Customer Id	Magazine Promotion (MP)	Watch Promotion (WP)	Credit card Insurance (CCI)	Gender (G)	Life Insurance Promotion
1	Y	N	N	M	N
2	Y	Y	Y	F	Y
3	N	N	N	M	N
4	Y	Y	Y	M	Y
5	Y	N	N	F	Y
6	N	N	N	F	N
7	Y	Y	Y	M	Y
8	N	N	N	M	N
9	Y	Y	Y	M	N
10	N	Y	N	F	Y

b) Explain with the help of an schematic diagram various steps to develop a prediction model. [6]

Q3. Perform a complete forward and backward sweep of the feedforward network shown below using the back-propagation algorithm. The activation function in all the neurons are log-sigmoid functions. Assume target output = 0.9, η= 0.25. [12]



Q4. a) How the knowledge is created in an organization? Explain the steps involved in knowledge creation. Also, explain the Knowledge Management System Life Cycle. [6]
b) What is the problem of learning with the imbalanced data? What are the various ways to deal with this problem? Explain any one technique with the help of an example.[6]

Q5. a) What is bias and variance? Also, discuss bias-variance trade-off with the help of an example. [6]
b) Describe the various components of knowledge management. [6]

Q6. a) What do you understand by unsupervised learning? Explain any two examples of unsupervised learning. [6]
b) Consider the following data points. A1(2; 10); A2(2; 5); A3(8; 4); B1(5; 8); B2(7; 5); B3(6; 4); C1(1; 2); C2(4; 9). The distance function is Euclidean distance. Use the k-means clustering to cluster the above data set (use k = 2). [6]

Q7. a) Consider the training examples shown in the table for a binary classification problem. [6]

Instance	a1	a2	a3	Target class
1	T	T	1.0	+
2	T	T	6.0	+
3	T	F	5.0	-
4	F	F	4.0	+
5	F	T	7.0	-
6	F	T	3.0	-
7	F	F	8.0	-
8	T	F	7.0	+
9	F	T	5.0	-

(i)What is the entropy of above collection of training examples w.r.t the +ve class?
(ii) What are the information gain of a1 and a2 relative the these training examples?
b) How the knowledge is created in an organization? Explain the steps involved in knowledge creation. [6]

END

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Course: MBA **Semester: IV**

Subject: Marketing of Services **Subject code: MGM09**

Maximum Marks: 60 **Maximum Time: 3 hours**

Note: Answer all three questions. Some questions have a choice and each answer must be marked with the appropriate question number for the choice of question attempted.

Questions have to attempted based on the case situation given below:

Case:

The hassle of buying: A customer interview

The shop floor design of the Scandinavian home goods stores forces you to walk through every single display area. You have to spend hours there, even if you just want to buy a single piece of furniture. Customer services are very limited, and once you've selected items from the huge storage area, managed to put them in or on your cart, waited in the long queue to check out and arranged any delivery and installation, you still wait for another week to get your furniture fixed and ready for use. There's even another stop if you need an official invoice of your purchase. It is an inconvenient and time-consuming in-store experience.

Every time I shop at this store I swear I won't be back again. But I keep coming back.

"Peak-end rule"

In what has come to be known as his "peak-end rule," Noble prize-winning psychologist Daniel Kahneman pointed out people could remember only two things during an experience process: how we feel at the peak (no matter whether the ultimate experience was good or bad) and at the end. These peak-end feelings summarize our whole experience process and are stored in our brain at a subconscious level. These feelings will eventually direct our next buying decisions; whereas, the proportion and duration of pleasure or pain throughout the whole experience process do almost nothing to our memories. We remember only the peak and the end.

Think about my experience at this store. Though my disappointments make absolute sense, it's actually my peak-end experience that takes charge and drives me to go back again. So what's my peak-end? To me, it's the value of the products for the money I pay, the free-to-trial shopping experience and the effective display that demonstrates practical and efficient use of the products. What's more, the canteen is good, as is the 10-cent ice-cream I buy at the exit counter! In my case, my peak-end memories override any unpleasant feelings and evolve into a positive experience that drives me back.

There are three essential elements: the peak and end (most memorable) experiences; brand values; and consumer needs. I would expect any brand that wants to get my business would have to deliver your most unique brand values and meet (or exceed) the most critical needs and expectations of your target customers through peak and end experiences.

Q1. Which theory of services domain would help frame an effective experience for this customer, as described in the first paragraph of the case?

a) Name the theory and its broad characteristics 12 marks
b) Describe the relevant parts of that theory which relate to the situation in this paragraph 12 marks

Q2. If you were to design a store experience for the above situation, describe the following:

a) How would you create a service blueprint or servicescape? Describe the process and key elements. 12 marks

Or

b) What is the process of creating a new service product? Describe all stages briefly12 marks

Q3. Answer any two of the following questions, in terms of your managerial response to the above situation:

a) What would be the key aspects of mapping service touchpoints when designing the experience for above situation, given the "peak end" experience framework? How does this relate to identification of key attributes, using the quality theory/practices?12 marks
b) How would Russell's framework help design such a service? How does that help design delight points and manage expectations? 6 + 6 marks
c) What is the concept of service value? How does the concept explain why the customer would keep going back to the store? 6+6 marks
d) Explain through the gap model, which service gap areas the store should focus on if they want to create a service delivery that exceeds expectations at every service touchpoint at all stages of the customer journey through the store.

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Roll No. _____

Total No. of Pages: 2

USME, DTU East Campus

4th Semester MBA

END SEMESTER EXAMINATION- MAY 2019

PAPER CODE: MGM 10 TITLE OF PAPER- Digital Marketing

Time: 3:00 Hours *Max. Marks: 60*

Note: Write your Roll no. on the top of this question paper.
Marks are indicated against each question. Parts of a question must be answered together.

Q1. Differentiate between the following with the help of suitable examples:

(Attempt **any four** out of the following) **[4* 4 marks = 16 marks]**

a) House of Brands and Branded House strategies in the context of the virtual medium offered by the internet. Use corporate examples to illustrate the point.

b) Explicit and Implied consumer online behaviour

c) Creativity driven challenges and Solution-driven challenges in the context of branded challenges on niche crowd-sourcing online platforms.

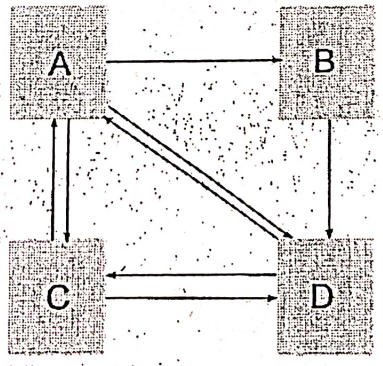
d) Operational, Analytical and Collaborative CRM

e) Deterministic and Non-deterministic Targeting

Q2. Attempt **any five** out of the following questions: **[5* 4 marks= 20 marks]**

a) What is Metcalf Law? Discuss how community network value is determined using consumer co-creation model based on Metcalf law.

b) Apply random surfer model on the following figure to determine the page rank, the most and the least important web pages amongst the following A, B, C, and D web pages. Contrast these results with the one that uses total degree as the web page importance.



c) Describe the model to measure campaign effectiveness using quantitative tag analysis (TF-IBF). How would you measure the inter-campaign similarity?

d) Explain any two important Black Hat Tactics with examples.

e) For a publisher the CPM rates are Rs 60 and CPC is Rs 6. The average CTR of display ads is 0.2 per cent. Discuss the implications of CTR on CPC and CPM and which buying model would be better for the marketer in this case. In general, which of the two models-CPC and CPM, is more preferable for brand building purpose and which one is preferable for the lowest delivering highest ROI?

f) Discuss the website dimensions that contribute to the brand in online space through traffic building and give some metrics for each dimension.

Q3. Attempt **any three** out of the following questions: **[3* 6 marks = 18 marks]**

a) Illustrate with an example the use of keyword funnel (using the AIDA framework) for a new smart phone entrant in a competitive market.

b) What are the different SEO phases? Explain website audit and its main elements for SEO.

c) Explain how Ad Rank is computed in Ad Auction Model? What are the primacy effects on Ad Rank?

d) Write short note on the following:

(i) Netnography

(ii) Folksonomies

(iii) Cyberbranding

Q4. Answer **all** the following questions: **[3* 2 marks = 6 marks]**

a) Describe the role of cookies in online CRM.

b) What are the factors that affect EdgeRank on facebook?

c) What are CRM processes?

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Total No. of Pages 3 Roll No.....

4th SEMESTER B.Tech./M.Tech./MBA/Ph.D/ B.Tech. (Evel)

END SEMESTER EXAMINATION ***May/June-2019***

MGS-07 Supply Chain Strategy & Innovation

Time: 3:00 Hours *Max. Marks :60*

Note : Answer any 6 questions
All questions carry 10 marks.
Assume suitable missing data, if any.

Q.1[a] Assume a new iPhone is expected to hit the market.Briefly describe its demand and supply characteristics throughout the product life cycle. (5)

[b] Ryder Dedicated Logistics is a 3PL provider with a 7 year contract to design manage and operate all of Whirlpool Corporation's inbound logistics. What are the advantages and disadvantages of this arrangement? (5)

Q.2[a] Apply the Ansoff matrix to organizational supply chain strategies. Briefly explain the model with relevant examples. (5)

[b] Compare efficient and responsive supply chains. (5)

Q.3[a] Briefly describe the challenges to achieving and maintaining strategic fit. Provide examples where relevant. (5)

[b] i) My hairdresser provides free wifi and tea while waiting for an appointment. What strategy does she follow? Briefly describe the strategic activities necessary to keep her store operational. (2.5)

ii) What strategy does Walmart follow? Briefly describe the strategic activities necessary for the strategy. (2.5)

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Q.4[a] Reva Cars is planning to enter into a strategic alliance with Park Supplies Ltd. What parameters should Reva cars consider to determine the appropriateness of the strategic alliance. (5)

[b] Why do you think a tailored supply chain is necessary? What are the different ways a supply chain may be tailored. Give examples where relevant. (5)

Q.5[a] What challenge does mass customisation pose to retailers and suppliers? Using women's clothing as an example represent with the help of a diagram the spectrum of market opportunity against the dimensions price and supply chain structure. (5)

[b]. Globalisation has helped many countries have access to uninterrupted fresh food supplies. How has this effected local suppliers? What kind of supply chains do we need to support and develop as globally responsible citizens? Be innovative in your answers and give examples where relevant. (5)

Q6 [a] Explain the difference between implied demand uncertainty and demand uncertainty using the example of iPhone 6 Plus. (2)

[b] What do you expect the level of implied demand uncertainty to be for jasmine rice produced by Thailand at a supermarket? How would this impact margins, supply ? (2)

[c] Walmart and P&G plan promotions jointly. What is this an example of? What are the benefits of this approach? What would happen if promotions are not jointly planned? (4)

[d] Explain how dell is an example of mass customisation. (2)

Q7 [a] Briefly list 3PL implementation issues? (4)

[b] Why do firms offer product choice with limited variability. Explain with example. (4)

[c] Where would you place the following ... (2)
spectrum

1) Local mom and pop store
2) Fedex
3) Tata Steel plant
4) India Post

End-Term Examination May/June 2019

Total No of Pages: 2 pages + 2 cases **Roll No: _____**

Course: MBA Batch 2017-19 **Semester: IV**

Subject: Operations Research and Strategy **Subject code: MGS-10E**

Maximum Marks: 60 Marks **Maximum Time: 3.0hrs.**

Instructions:

Printouts of the following cases are attached:
1. Case: Wal-Mart China: Sustainable Operations Strategy
2. Case: Trouble at Tessei

Notes and textbooks NOT permitted in the exam.
Answer ALL questions.
Assume suitable missing data, if any.
The maximum word limit for each question is 750 words.

Question 1:
What are the characteristics of emerging ecosystems like that of AppleTV+, Amazon Prime and Netflix? The traditional supply chain concept may not be appropriate to manage operations in such ecosystems. Discuss and suggest what possible theory you would apply to manage such ecosystems strategically. (10 marks)

P.T.O

Question 2:
What steps can be taken to ensure coupling of operations to strategy plans? Explain the 6 Stage framework useful for a closed-loop management system to link strategy and operations. Mention some tools that are useful at each stage. (20 marks)

Question 3:
Based on the Case: Trouble at Tessi, what are the key operational challenges that Yabe is facing? What concepts in service can lead to a turnaround and what steps would you recommend? (10 marks)

Question 4:
Based on the Case: Walmart China, what are the distinguishing features of Walmart China's distribution system? What initiatives has Walmart China taken to implement sustainability? How can Walmart improve sustainability in its distribution and retail operations? (20 marks)

HARVARD | BUSINESS | SCHOOL

9-615-044
REV: OCTOBER 20, 2015

ETHAN BERNSTEIN
RYAN W. BUELL

Trouble at Tessei

Teruo Yabe, the newly appointed Director and General Manager of Tessei, walked Tokyo Station's quarter-mile Platform 21 enroute to his office. It was August 2005, and Yabe knew that his office, located just below the tracks, would provide respite from the afternoon heat and a chance to reflect. Number 21 was one of four platforms where Tessei's Tokyo employees cleaned Shinkansen ("bullet") trains (Exhibit 1). From arrival to departure, each train was only in the station for twelve minutes. Providing time for passengers to disembark and board left Tessei only seven minutes per train to complete its work (Exhibit 2).

A subsidiary of the East Japan Railway Company (JR East), Tessei was struggling. As of 2004, safety issues, operational mistakes (including crews failing to finish their work in seven minutes), customer complaints, and employee turnover were all at or near historic highs. As JR East continued to increase the frequency of departures in Tokyo, it needed more from Tessei, but it kept getting less.

Earlier in 2005, Yabe had reached retirement age after a distinguished 39-year career at JR East in safety, operations, and management (Exhibit 3). In traditional Japanese companies like JR East, upon reaching retirement age, senior managers with successful careers were often offered senior positions at subsidiaries, a practice called *Amakudari* ("descent from Heaven"). Working with JR East staff, Yabe had been considering positions at two prestigious subsidiaries when the Vice Chairman suddenly called him directly and asked him to lead a turnaround at Tessei. With no background in cleaning, Yabe had mixed feelings, especially given Tessei's negative reputation within JR East.

Turning around Tessei would not be easy. Tessei's work represented one of the most complicated cleaning operations in the world. Cleaning a Shinkansen train in exactly seven minutes was the equivalent to cleaning six Boeing 737s in less than half the typical time it took to clean one. Japanese customers, who paid as much to ride the Shinkansen as they would pay to ride an airplane, demanded perfect, on-time cleanliness, so every mistake was costly.

Meanwhile, recruiting talented, motivated individuals to Tessei was very difficult in Japan, where train cleaning was considered a "3K" job: *kitanai* (dirty), *kitsui* (difficult), and *kiken* (dangerous). During his first month, Yabe had worked alongside many of Tessei's front line employees, speaking with them about their experiences on the job, and learning how the work took its toll (Exhibit 4). Many who had come to work at Tessei had difficulties finding other jobs, due to unfavorable career histories (Exhibit 5). "In a way, they have 'drifted' to Tessei," Yabe thought, ending up there almost as unintentionally as he had.

As he descended beneath the platform, Yabe knew it was time for action. He wondered which levers—operational and organizational—he should pull first to get Tessei back on track.

Professors Ethan Bernstein and Ryan W. Buell prepared this case. The authors gratefully acknowledge the support of Mayuka Yamazaki and the HBS Japan Research Center in conducting the field research for this case. This case was reviewed and approved before publication by a company designate. Funding for the development of this case was provided by Harvard Business School and not by the company. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

Company Background

Tetsudo Seibi Kabushiki Kaisha (a railway maintenance company, commonly called Tessei) was founded in 1952 to clean train cars on Japanese National Railways (JR). When JR was privatized and split into six regional companies in 1987, Tessei became a subsidiary of JR East.

The company's primary objective was to clean JR East's Shinkansen trains. With a maximum operating speed of 320 kilometers per hour (200 miles per hour), Shinkansen trains were commonly referred to as *bullet trains* in English, due to their bullet-like shape and high speed. In 2005, over 325 million passengers rode the Japanese Shinkansen system, making it the most ridden high-speed rail network in the world, and JR East accounted for 39% of this volume (Exhibit 6).[1] Owing to the exacting demands of travelers and the complex logistics of coordinating a highly-utilized railway system (Shinkansen trains sometimes operated only three minutes apart even when traveling at 320 kilometers per hour), Shinkansen trains adhered to strict schedules. In 2003 for example, Shinkansen trains had an average arrival time of within six seconds of schedule.[2]

Tessei's principal revenue source was fees from JR East. Managerial misconduct in the early 2000s had led to a reduction in the commission fees paid to Tessei by JR East. Consequently, from 2001 to 2005, company revenue had declined 12%, while the number of cars cleaned had increased by the same percentage (Exhibits 7 and 8). In response, the company sought to cut costs by increasing its proportion of part-time employees.[a] As of 2005, the majority of Tessei's employees worked part time (Exhibit 9). The average worker was 53 years old, had held a number of previous jobs, and often had encountered difficulties on their career path.

Turnover was a major challenge. Tessei hired 20-30 part-time employees per month, as many proved unable to endure the hard work the job entailed. Safety was another important issue. The number of on-the-job accidents reported by Tessei employees had risen sharply from 2001 to 2005 (Exhibit 10). Complaints from customers were also on the rise. Commonly reported issues included untidy bathrooms and forgotten items left behind on the Shinkansen that were not returned.

Working at Tessei

There were four stations at which Tessei cleaned Shinkansen trains including: Tokyo, Ueno, Oyama, and Tabata. The largest of these was Tokyo station where Tessei crews cleaned 120 trains (with a total of 120,000 seats) each shift, and up to 168 trains a day during the high season. Crews worked two 8.5 hour shifts per day, from 6:00 am to 11:00 pm. Each crew typically had 22 members and cleaned 20 trains a day.

The process by which Tessei employees cleaned Shinkansen trains was highly standardized. The cleaning operation in every car included collecting garbage, cleaning the floor, wiping dirty tray tables, cleaning the bathrooms, exchanging seat covers (in business and first class cars), and retrieving lost items. For passenger comfort, the crew was also tasked with rotating seats 180-degrees, since Shinkansen trains reversed direction rather than turning around between arrival and departure.

In seven minutes, one person cleaned a regular 100-seat car, three people cleaned a business-class car, four people cleaned a first-class car, and three people cleaned all of the bathrooms, all under the supervision of a team leader. The train-cleaning process was complicated by a variety of factors. First,

[a] Part-time employees earned ¥1,050 per hour ($9.50 USD), whereas full-time employees earned ¥910 per hour ($8.23 USD). However, full-time employees also earned benefits and bonuses, such that their total annual salary was 1.2 times higher than that of part-time employees.

Shinkansen trains were not standardized. In order to accommodate more destinations with a limited platform capacity, JR East would often pair trains in the station, so that different routes with common tracks could share a platform. Depending on their destination and whether they had been paired, Shinkansen differed in length, ranging from 6-car to 17-car configurations (Exhibit 11). The mix of coaches also varied among trains, including regular, first-class, business-class, and two-story varieties (Exhibit 12). Finally, trains arrived and departed from different platforms, and from different locations on each platform, depending on the train length and coach configuration. Because of the limited time available to complete each cleaning, employees needed to be in the right place when a train arrived.

Owing to the exacting demands of the cleaning process and the dangers inherent in the workplace, Tessei trained employees to work "appropriately," stressing the importance of working efficiently, providing clean trains, improving service quality, and not getting injured. Tessei's Cleaning Manual, which was given to each new hire, provided detailed descriptions of each work process, as well as guidelines governing the state of employees' physical condition, clothing, and cleaning supplies (Exhibit 13). Each new hire also received on-the-job training from Tessei's more experienced supervisors.

At the beginning of each day, employees would change into their uniforms and clock in. Next, they would verify and confirm their assigned work roles, note their assigned group and cleaning tasks for the day, and review the details of each assignment, which included model-specific instructions, arriving train numbers, arrival times, track numbers, and track positions. Employees were expected to complete these preparations in time to participate in the group warm-up exercises before the cleaning day began.

The Cleaning Process

During their shifts, employees came to the platform three minutes prior to the scheduled arrival of an assigned train. Once there, they would empty the platform's garbage cans and stand in a position that corresponded with the stopping position of their assigned car door (Exhibit 14). Employees would stand in this position until all passengers had disembarked from the train. After the last passenger exited, employees would check the forbidden movement indicator, a signal above the platform, which confirmed it was safe to board the train. Prior to boarding, employees would point at this indicator and shout "*Ok!*" for confirmation. From this moment, employees had seven minutes to board the train, complete their cleaning assignments, and exit.

A crew supervisor would secure each entry door in an open position for the employees and hang a "cleaning in progress" sign, to prevent customers from boarding the Shinkansen while Tessei's work was underway. Once aboard the train, bathroom cleaners would begin moving through the bathrooms in each coach, cleaning toilets and washbasins, restocking toilet paper, and emptying trash. Those assigned to clean the main cabins of particular cars would set out their tools, which included a flexible broom, dustpan, and bag of supplies. Tools were organized and positioned in their designated places, in the front of each car on the far side of the train deck, where they would not obstruct walkways.

With tools in position, cabin cleaners would begin by putting on gloves and removing garbage. Checking the cabin's overhead racks, the area beneath each seat, and the netting in front of first class seats, cabin cleaners would collect any foreign objects that they found. Larger refuse and forgotten items (which at the conclusion of the cleaning process would be taken to the station's lost and found) were to be collected by hand, while smaller debris was to be swept up using a flexible broom. Employees were trained to move forward while picking up garbage, rather than collecting it while facing backwards, and were instructed to take extra care not to spill leftover drinks while collecting them. After finishing the main section of the cabin, employees would empty the garbage room and

verify that its door was left completely closed. Employees would then remove and store their gloves, in order to keep the seat upholstery and headrest cover cloths clean.

Next, employees were required to rotate the seats. Completing this part of the process required verifying that all tray tables and footrests were stowed in their upright positions. Depending on the type of car, rotation was an automated or manual process. With automation, the rotation took place at the push of a button. Before pushing the button, employees called *"Rotating seat!"* to prevent the injury of their colleagues. Manual rotation required a particular posture to prevent back injury.

With seats rotated, employees would begin the process of cleaning table trays. Each tray was opened 45-degrees to check for stains. Stained and spotted trays were thoroughly wiped, as were all window frames. Once trays were clean, employees would turn their attention to cleaning the floor. A floor cloth was used to wipe up badly soiled areas, followed by a flexible broom to remove debris. Employees were taught how to lightly press and sweep so that the bristle tops did not rise above the floor. Broom bristles would primarily collect dust balls and hair, which employees would remove in the break room between cleaning assignments with special combs. Employees were required to sweep the inside of the train, including the washrooms, from left to right, moving forward, and sweeping in three directions to collect debris in the deck. Employees used dust pans to collect debris in most cars, and cordless vacuums to collect it in first-class cabins.

With floors cleaned, employees would change each seat's disposable headrest cover (called a *motare*), which was affixed to each headrest with velcro. Depending on the type of seat, this activity sometimes involved manually raising or lowering the headrests. Furthermore, motares came in different sizes, and it was up to each employee to make sure they had supplies that were compatible with their assigned train.

With headrest covers changed, employees would raise the blinds at each seat, and double-check that blind hooks were in their specified positions. Next, employees would move from the back of the car to the front, pushing on each backrest to ensure that every seat was properly locked. Then, standing at the front of the car, the employee would conduct a visual check, pointing and calling out, *"Motare! Blind! Seating direction!"* to ensure completion of all tasks. Finally, the employee would gather their cleaning supplies and exit the train, to make way for oncoming passengers.

Once the process was complete, employees would return to the designated Tessei rooms beneath the platform to prepare for their next assignments (**Exhibits 15 and 16**).

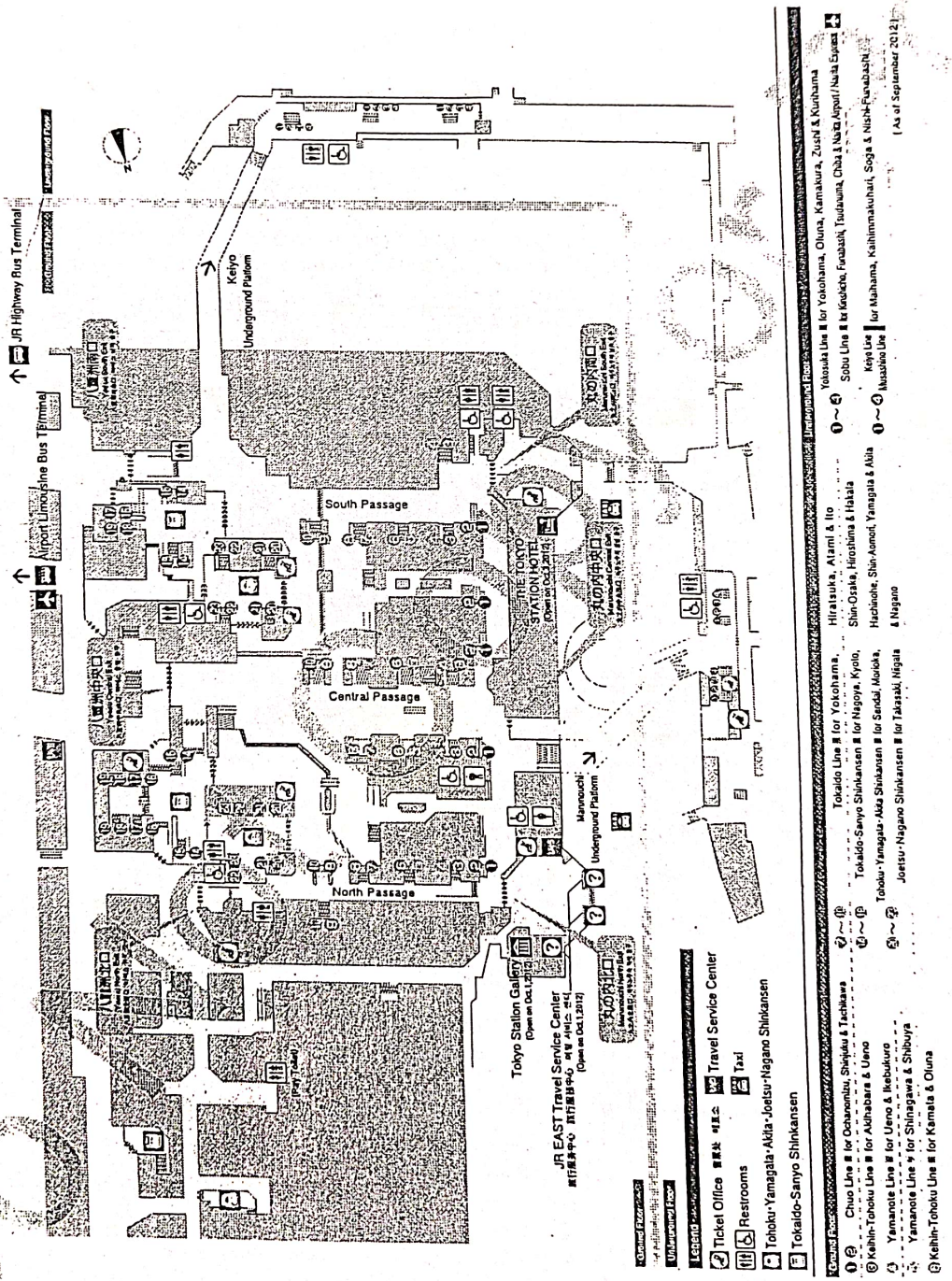
Mind the Gap

Yabe reflected on the challenge he had inherited. Tessei's mandate was to provide clean trains and improve the service experiences of JR East's customers, but the company appeared to be falling short on both dimensions. Its quality, timeliness, customer and employee satisfaction, and safety records all seemed subpar.

With an unrelenting seven-minute deadline for each assignment, there was little room for error; and yet, being on the front line for thirty days had revealed a laundry list of inefficiencies. Yabe believed that Tessei could do better, but how?

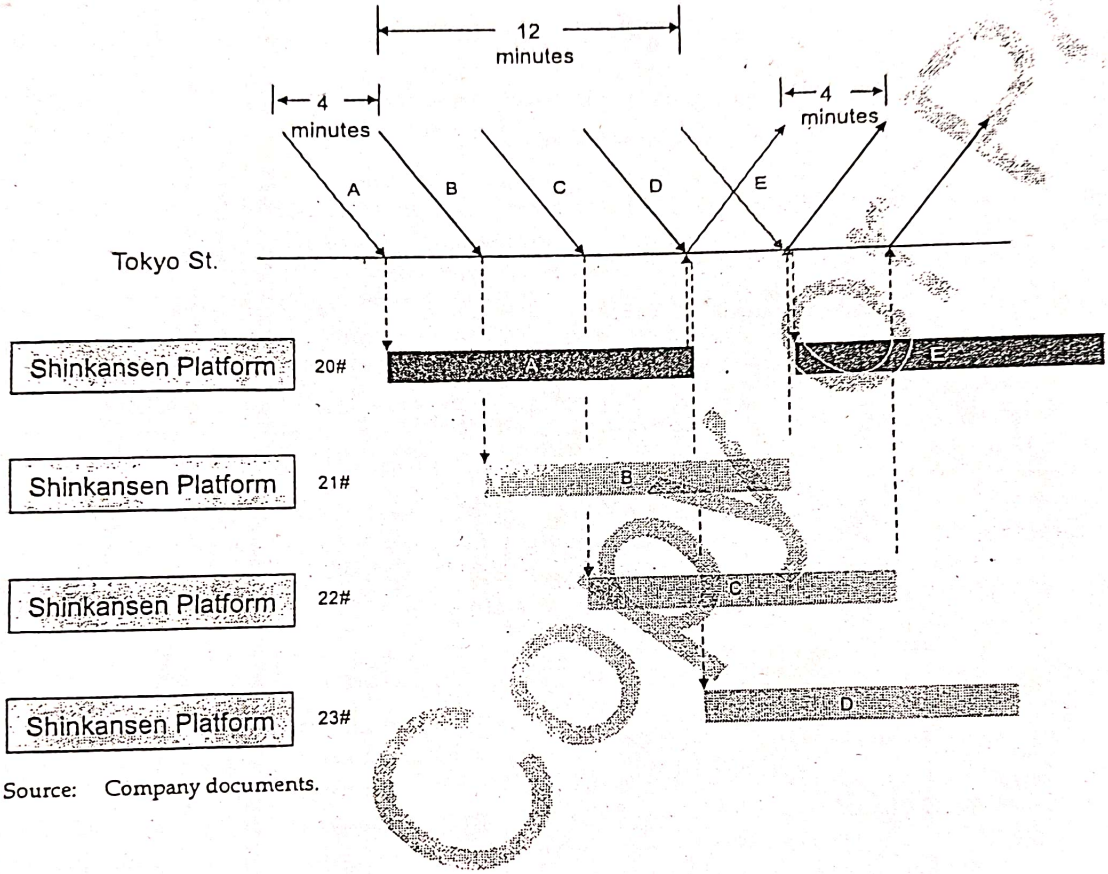
Yabe weighed his options. The months ahead would present an opportunity for him to make a significant change at Tessei, but which levers should he pull first?

Exhibit 1 Tokyo Station Platform Map



Source: Company documents.

Exhibit 2 Sequencing of Train Arrival, Cleaning, and Departure



Source: Company documents.

Exhibit 3 Teruo Yabe

- 1966: Graduates high school; joins Japan National Railways
- 1966-1979:
  - Train crew, inspection, working at a local bureau of JNR
  - Then moved to operation safety division at JNR HQ.
  - As a person in charge of safety system, he got involved in system developments and investigation and cause analysis of accidents.
- 1980: Deputy manager in charge of safety policy at Japan Railway East*
  - Involved in making the JR East's first safety plan and the plan on investments for safety. He put focus not only systems but on human factor.
- 1995: Manager, transport dept., Tokyo branch
- 1998: Stationmaster, Tachikawa station
- 2000: General manager of transport dept., Yokohama branch
- 2001: General manager, transport dept., Tokyo branch
- 2005: Joined Tetsudo Seibi (later renamed TESSEI) as a board member, general manager of corporate planning

Source: Company documents.

Exhibit 4 Quotes From Employees about Their Front Line Experiences

- "Customers see me and say to their children, 'Look, if you do not listen to your parents, you will become like them.' It is a world of discrimination."
- "We are only allowed to do what we are told to do. It would be great if I could help customers when I find them looking for help. I therefore asked my senior staff whether I could provide guidance to customers, whether I could provide some help, I was told, 'As our company does not have such a contract, you should not do such a thing.' I felt a bit disappointed. I knew I could not hope going closer to customers. I should not think beyond what I am told to do."
- "The company has a culture like taiikukai-kei.[a] If we deviate from what we are supposed to do even a little, senior staff points that out. Senior staff are really scary and intimidating. They are years older than me so they are exacting. We are scolded and yelled in the passage even with a minor mistake such as being slow to push a button to rotate chairs or picking up someone's broom. Of course there are some who are kind but overall impression is scary."
- "My parents do not tell others where their daughter is working as they think working at a cleaning company would look shameful to others. They keep it secret."
- "I found out that I would be late if I just followed the regular procedures. The procedures said lifting window shades, putting down armrests and then pushing the button. I however started to rush to push the button as soon as I collected trashes on the floor. It was actually a deviation from what I was told to do, but if I did not deviate, I would have been yelled again. No other options. That was hard. I would have been scolded if I had just followed what I was told to do. I had to think on my own what to do."
- "I am scared about customers asking me questions. I have no confidence that I will be able to answer properly, so I try best not to see customers' eyes."
- "If we were a bit behind the schedule while thinking what to do, a chief would yell at us. The chief passed by, telling us "You have x minutes" and I thought "So now she passes by me now, I have to finish these things by the time she comes back." I applied myself only to cleaning during the seven minutes. I was desperate."
- "I felt offended and hurt when I was scolded and yelled. I started to observe a group of experienced cleaners. Those who excelled stood out. I began to benchmark these people."
- "I was 40 when I joined the company and even so I got a reaction *Such a young person has joined.* As there were many women, they valued teamwork, sort of, or how should I say...people did not like to see someone doing something different from what others were doing. The culture was cohesive and very much disciplined, which might have been characteristics about a female group. Today, we have much more younger and less experienced people. What we find challenging is how to train these less-experienced young staff and let them work."
- "Headquarters is very strict on costs and they do not let us use soap. Soap bars run out very quickly as there are so many of us but there is a quota on how many soap bars one team can use. Even if we insist that we used all soap bars and want to have new ones, a person in charge of resource management does not give us any, saying, *We already gave you the allocated amount of soap bars.*"

Source: Casewriter interviews.

Note: Interviewees were asked to reflect on their experiences prior to Teruo Yabe's arrival.

[a]A taiikukai-kei is an organization with a strong command and control culture, where difference in years of experience matters.

Exhibit 5 Profiles of Tessei Employees

Female, Joined in May 2005, at age 55

- 1965: Graduated from Arakawa Junior High School
- 1965: Joined Niki no Kashi, a confectionary company (customer service)
- 1970: Quit Niki no Kashi in order to prepare for marriage
- 1977: Joined Takahisa Industry, a maker (assistance to machine operation, product finalization)
- 1980: Quit Takahisa Industry as her revenue went down due to shorter working hours
- 1981: Joined Suzuko Transport (as a driver)
- 1984: Suzuko Transportation bankrupted
- 1984: Joined Nisho Transport (as a taxi triver)
- 1985: Quit Nisho Transport for childbirth preparations
- 1986: Joined Kazuhiro Seisakusho, a maker (inspection and product finalization)
- 2004: Kazuhiro Seisakusho bankrupted
- 2004: Joined Sango Nibankan, a nursing house (support and cleaning)
- 2005: Quit Sango Nibankan as wages were lower than the first offer
- 2005: Joined Tessei

Female, Joined in March 2002, at age 48

- 1972: Graduated from Mizumoto High School
- 1972: Joined Ikebukuro store, Tobu Department Store
- 1976: Quit Tobu Department Store
- 1977: Joined Fujibo Logistics Center
- 1978: Quit Fujibo Logistics Center
- 1993: Joined Ikeguchi Dental Clinic
- 1995: Quit Ikeguchi Dental Clinic
- 1995: Joined Hinode Oil Sales
- 2001: Quit Hinode Oil Sales
- 2001: UNIQLO Joined Chiba Newtown Store
- 2002: Quit UNIQLO (after three months)

Male, Joined in December 2004, at age 50

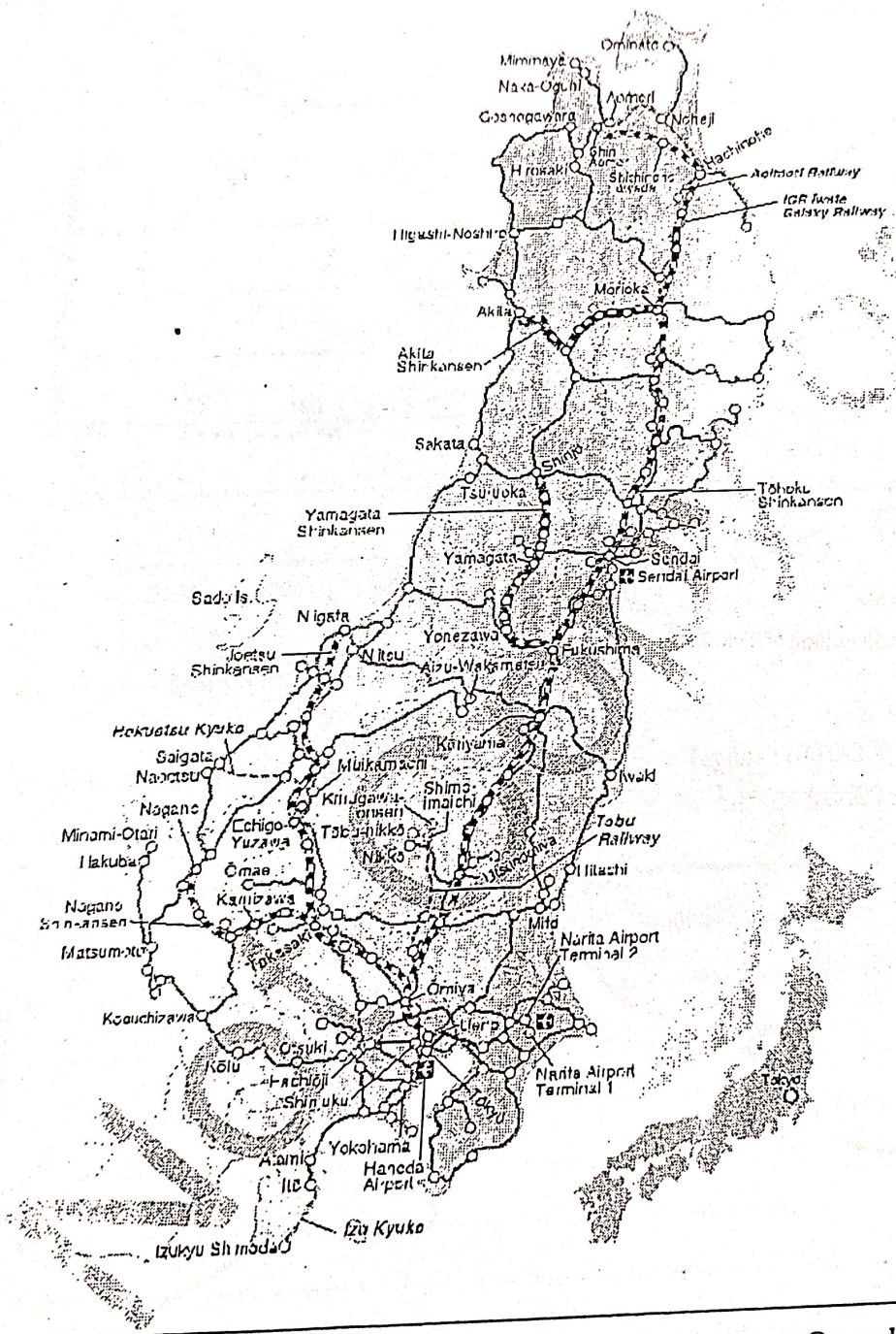
- 1969: Graduated from Nishi-toyama junior high school
- 1971: Graduated from Chiyoda Electronic Vocational School
- 1971: Joined Omori Factory, Pioneer Corporation (electronics)
- 1974: Quit Pioneer
- 1974: Joined Metro Mutual Support Association
- 1996: Quit Metro Mutual Support Association
- 1997: Joined Tokyo Seibi Corporation, a building management/maintenance company (in charge of operating room of a hospital)
- 2000: Quit Tokyo Seibi Corporation
- 2001: Joined Hitotsubashi Hospital as a helper
- 2002: Quit Hitotsubashi Hospital
- 2002: Joined Kimura Makizumi Hospital as a helper
- 2003: Quit Kimura Makizumi hospital
- 2004: Joined Kobayashi hospital as a part-time helper

Male, Joined in November 2000, at age 54

- 1961: Graduated from Daisan Kameido Junior High School
- 1961: Joined Kameido factory of Hitachi as a technical staff
- 1966: Transferred to Hitachi Seiko
- 1974: Quit Hitachi Seiko when the factory moved
- 1975: Joined Ito Warehouse
- 1980: Joined Phoenix Contact (his department at Ito Warehouse was transferred to Phoenix)
- 1987: Quit Phoenix Contact
- 1991: Joined Tokyo King
- 1994: Quit Tokyo King as the company was bankrupted
- 1995: Joined JR Tokai Passengers
- 1996: Transferred to JR Tokai Logistics
- 2000: Quit JR Tokai Logistics

Source: Casewriter interviews.

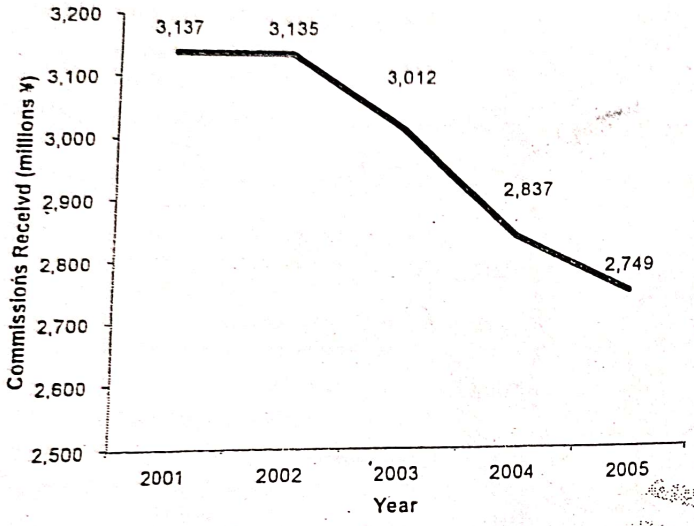
Exhibit 6 Map of JR East Shinkansen Lines and Ridership Statistics



Line	Start	End	Length	Opened	Annual Passengers
Tohoku	Tokyo	Shin-Aomori	419.4	1982–2010	76,177,000
Joetsu	Omiya	Niigata	167.5	1982	34,831,000
Nagano	Takasaki	Nagano	72.9	1997	9,420,000
Yamagata	Fukushima	Shinjo	92.3	1992	3,728,840
Akita	Morioka	Akita	79.1	1997	2,523,975

Source: Company documents.

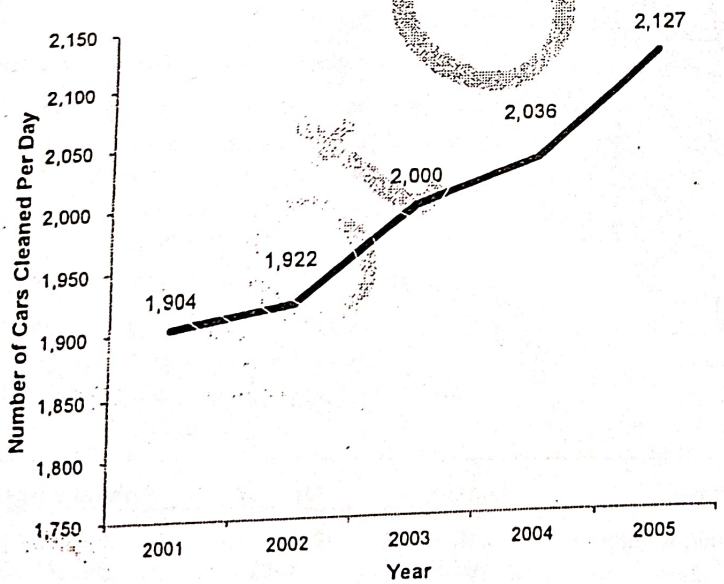
Exhibit 7 Commissions Received by Tessei (2001–2005)



Source: Company documents.

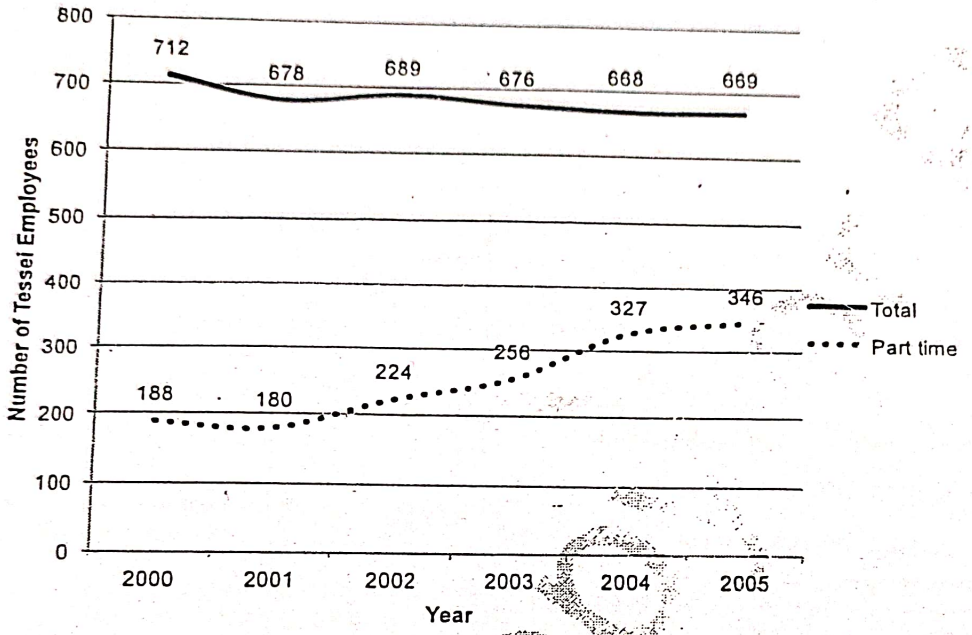
Note: ¥2.75 billion = $24.55 million USD in 2005.

Exhibit 8 Number of Shinkansen Cars Cleaned Per Day (2001–2005)



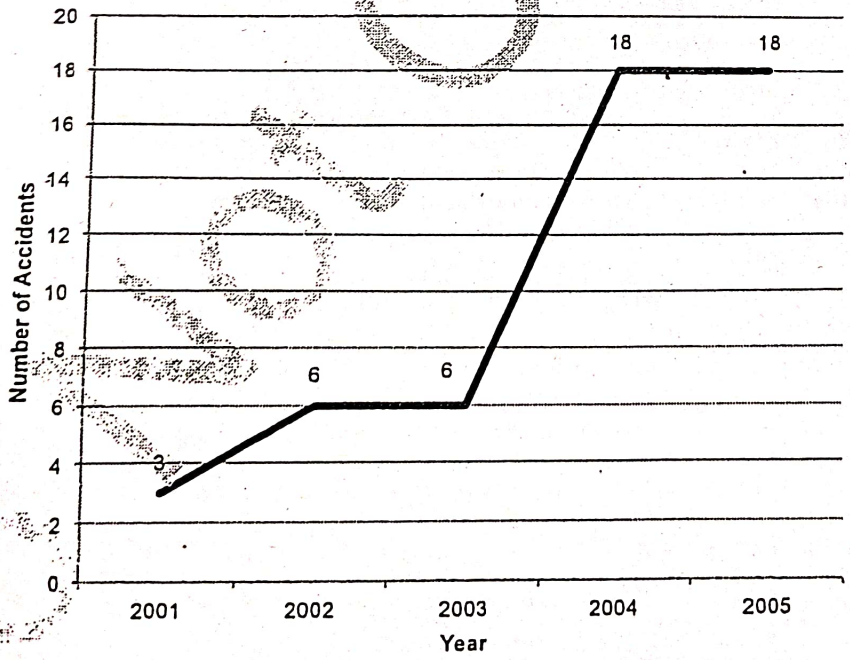
Source: Company documents.

Exhibit 9 Number of Tessei Employees (2000–2005)



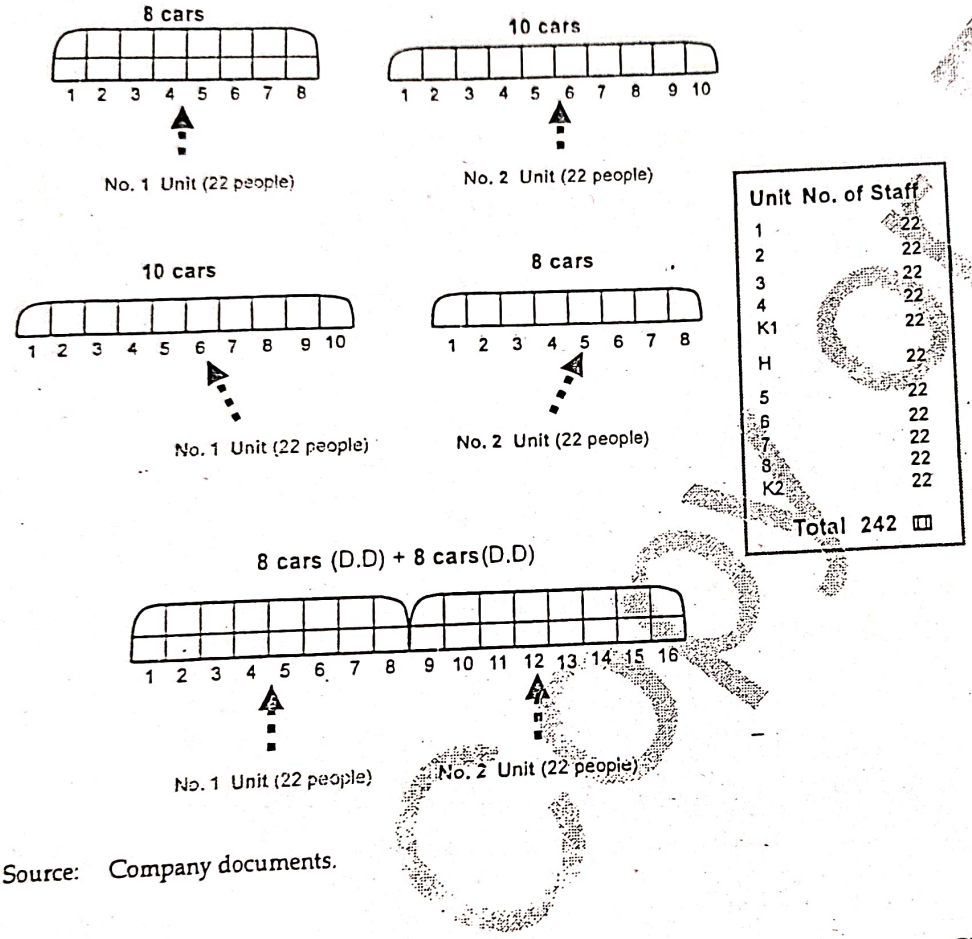
Source: Company documents.

Exhibit 10 Number of Accidents Among Tessei Employees (2001–2005)



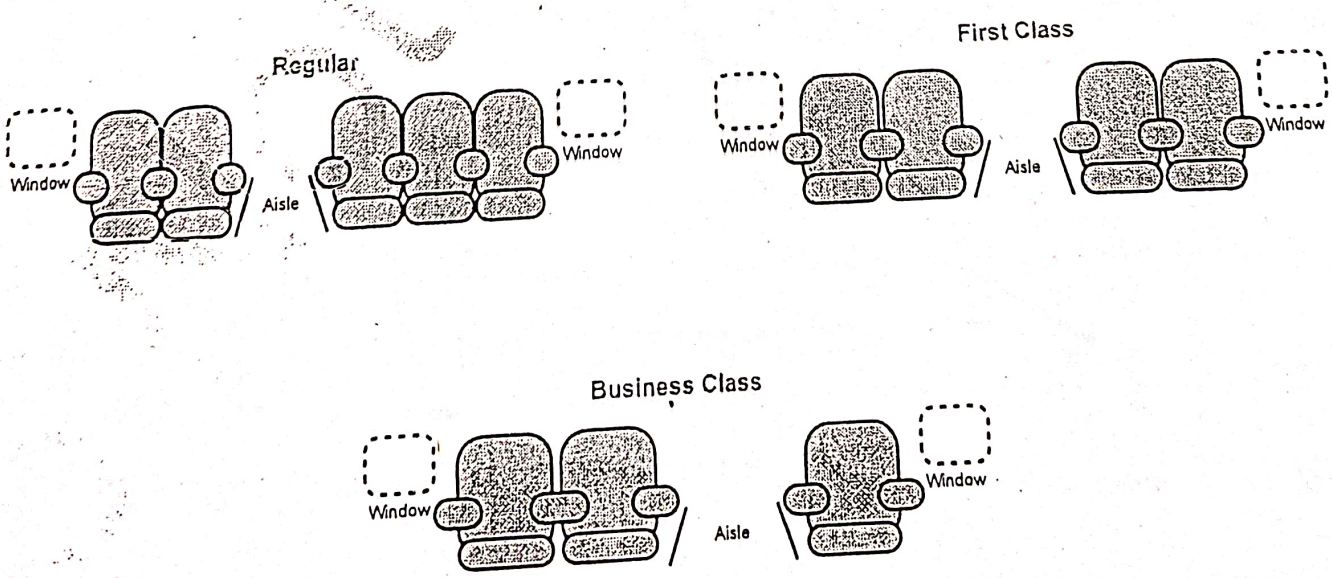
Source: Company documents.

Exhibit 11 Cleaning Different Types of Trains at Tokyo Station



Source: Company documents.

Exhibit 12 Seating Configurations in Regular, First Class and Business Class Shinkansen Cars



Source: Illustrations by casewriters.

Exhibit 13 Excerpts from the Tessei Cleaning Manual

The purpose of appropriate work:
Eliminate unreasonableness, inconsistency, and waste and do good work

1) Work efficiently, in good order, with less waste, and accurately
2) Provide clean trains
   a. Providing clean trains to the customer is our duty and responsibility.
   b. JR also expects us to improve the quality of our service.
3) Don't get injured
   a. Injury-causing accidents affect not only the worker and his/her family, but also the workplace.
   b. It's important that everyone maintains a good working environment, be careful not to get hurt and not let anyone get injured.

Physical condition:
1) Keep in good physical condition for work
2) Sleep well and always approach work with a refreshed feeling
3) Come to work well ahead of time
4) It is prohibited to come to work under the influence of alcohol
5) Participate actively and properly in the warm-up exercises

Clothes:
1) Work in the prescribed clothes
2) Don't be disheveled
3) Always keep clean
4) Don't put anything on clothes, except for the prescribed nametag etc.
5) Don't wear working shoes with soles that are worn out and slippery

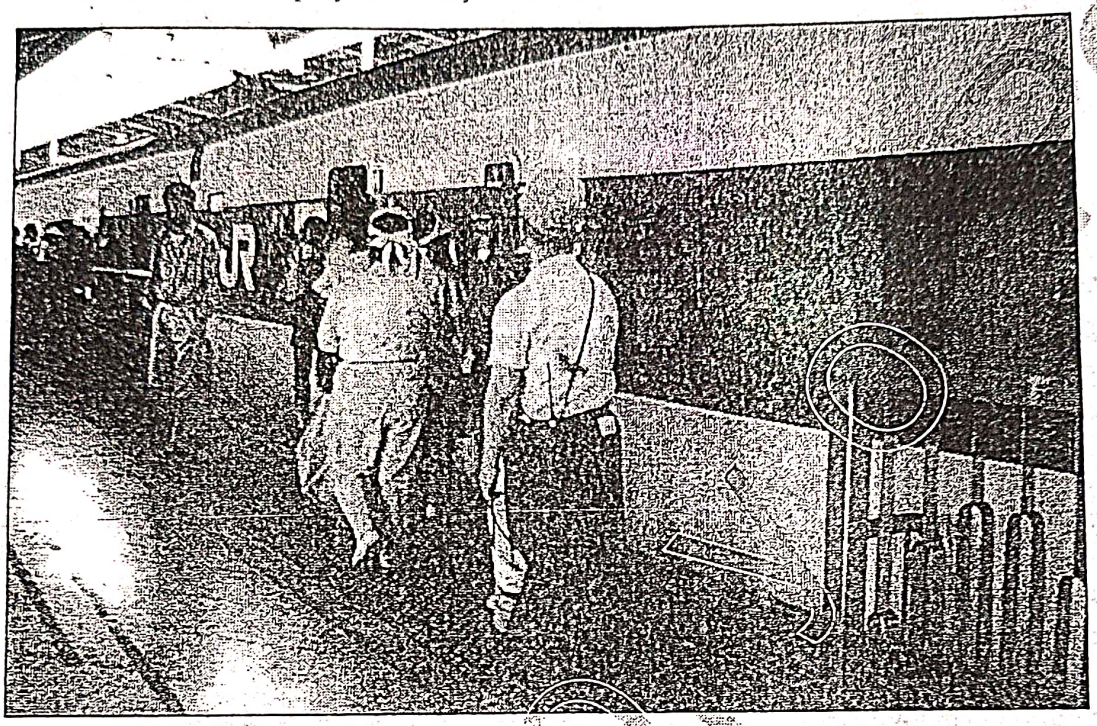
Cleaning supplies:
1) Cleaning supply inspection
   a. Flexible broom
      i. Check for problems and that the broomstick is well attached
      ii. Broom bristle tips are aligned and not bent
      iii. Broom bristle tips are not getting thin
      iv. Change defective brooms to new ones immediately
   b. Bag: Check for cleanliness
   c. Dustpan: Check for cleanliness and damage
2) Take caution handling cleaning supplies when entering and leaving the platform.
   a. Be careful cleaning supplies never touch the customers on the platform.
   b. Organize cleaning supplies in their designated places.

Clocking in:
1) Punch the personal card (timecard) with the time clock on the counter in the administrative office.
2) Confirm and check off today's assigned work roles with the daily manpower report on the counter.
3) Put the personal card into the folder marked with the assigned group and assigned car.
4) Find the instruction sheet on the counter for your assigned group and cleaning tasks and take a copy.
5) Comparing the model-specific assignment sheet (manual) and the group-specific cleaning task instruction sheet, check them against the following items that you confirmed on the daily manpower report: the arriving train number, arrival time, arriving track number, and seat facing, and then write down the assigned car number on the group-specific cleaning task instruction sheet.

Clocking out:
1) After the end of work ceremony, confirm and check off tomorrow's tasks in the daily manpower report
2) Punch the personal card with the time clock.

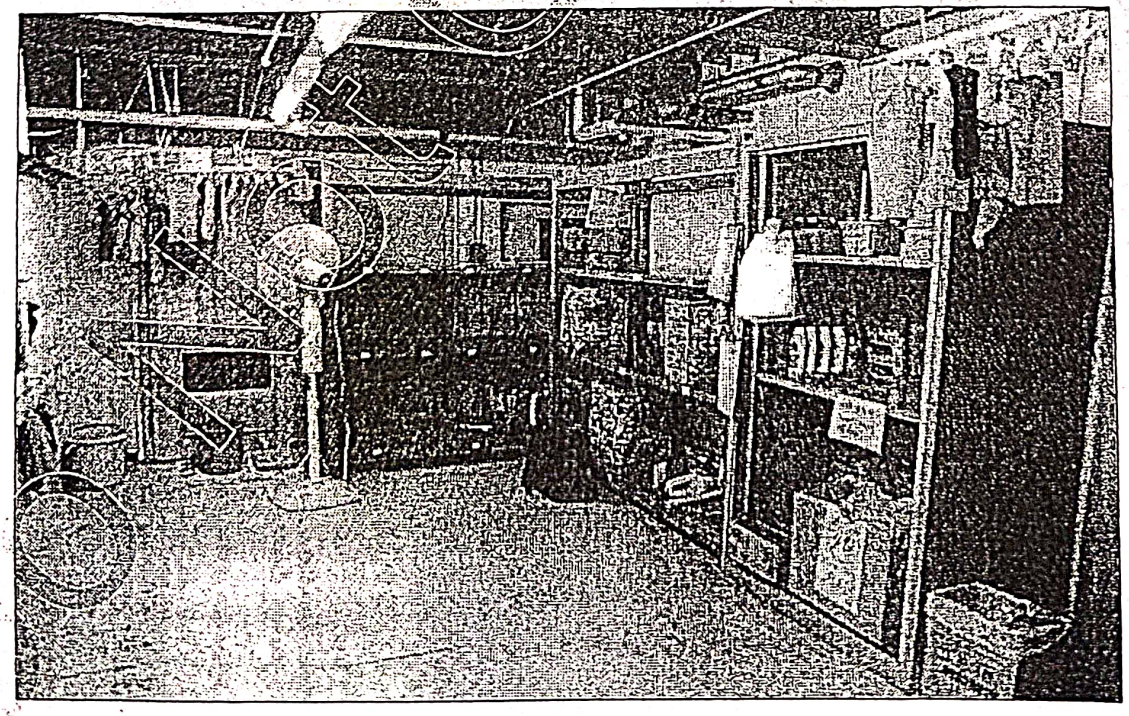
Source: Company documents.

Exhibit 14 Tessei Employee at Tokyo Station



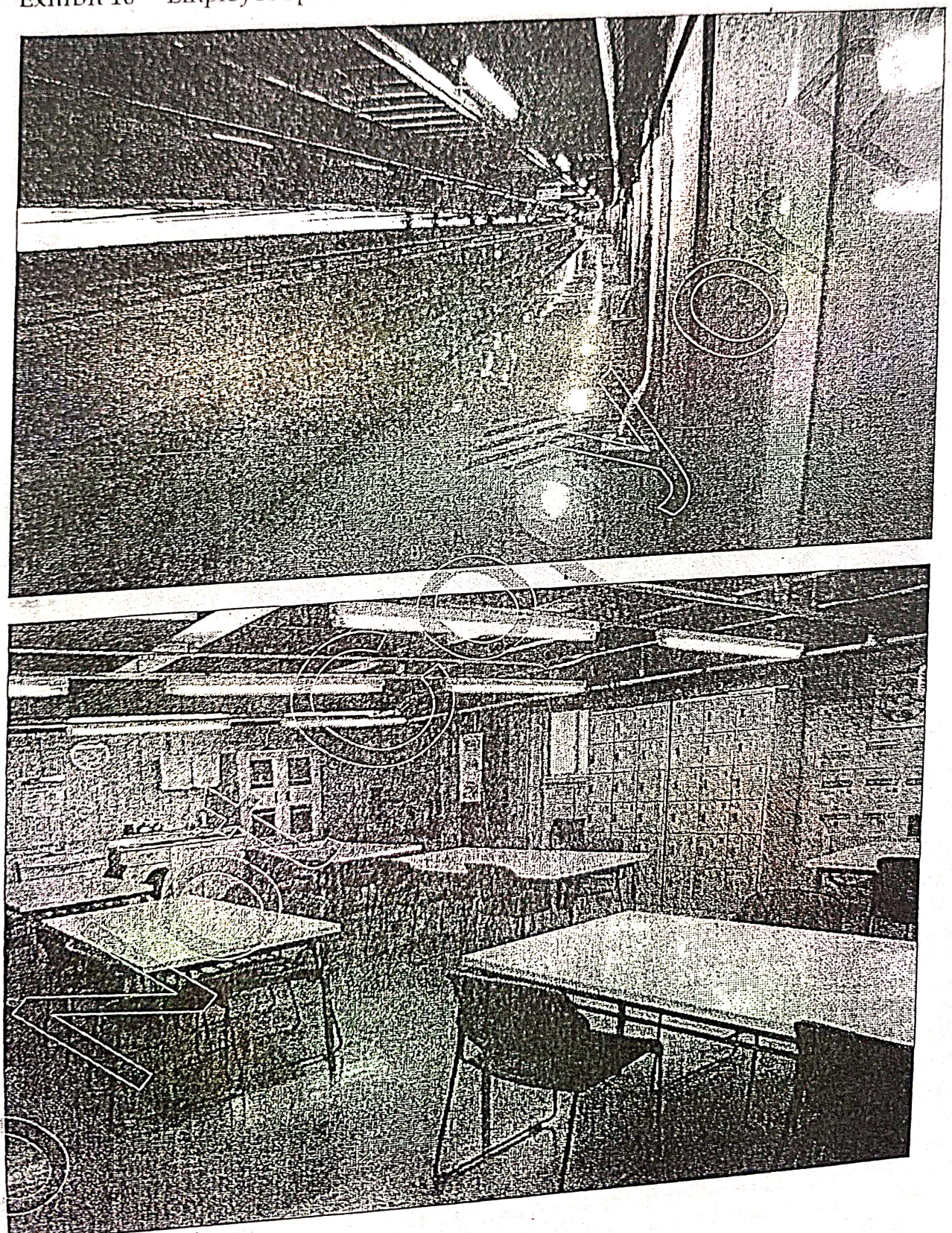
Source: Company documents.

Exhibit 15 Supplies Room under the Platform



Source: Casewriter photos.

Exhibit 16 Employee Space below the Platform



Endnotes

[1] Japan High-Speed Rail Passenger Traffic Statistics 2010. www.publictransport.us. December 1, 2011. http://publictransit.us/ptlibrary/trafficdensity/JapanHSRTrafficDensity2010.pdf, accessed November 2014.

[2] McGuigan, Brendan and Demand Media. "Japan Train Travel." USA Today on the Web. http://traveltips.usatoday.com/japan-train-travel-16935.html, accessed November 2014.

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WAL-MART CHINA: SUSTAINABLE OPERATIONS STRATEGY

Ben Hopwood, Lei Wang and Jun Cheng wrote this case under the supervision of Professor David Robb solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

THE CHINA SUSTAINABILITY CHALLENGE

The crowds following the path of the Olympic torch through the booming Chinese metropolis of Shenzhen were ecstatic. Following seven years of planning, the 2008 Summer Olympics were less than 100 days away and even foreigners were feeling the pride associated with hosting the event. Among those was Jens-Martin Fertsch, a German expatriate who had moved to China in late 2005 to take up a merchandizing position at the Wal-Mart China headquarters in Shenzhen.

Like everyone else, Fertsch's mind was contemplating the upcoming sporting events in Beijing, but he couldn't help pondering another event in the "Northern Capital" — a three-hour flight away — for in October Wal-Mart would host its first sustainability summit in China. Lee Scott, the global CEO, would gather with around one thousand senior representatives from global and domestic partners to discuss his vision for the future — one increasingly tied to the notion of sustainability.

A 12-year Wal-Mart veteran, Fertsch had just been appointed to the new position of senior director for sustainability for Wal-Mart China (retail) and Global Procurement. The dual nature of his role demonstrated the close links between China and global operations and was also reflected in his reporting to both Shawn Gray (vice-president (VP) of operations for Wal-Mart China) and Edwin Keh (chief operating officer (COO), Global Procurement). The responsibility had previously been shouldered by Gray, but rapid growth in China operations had necessitated the creation of a dedicated position.

Fertsch was preoccupied with ensuring that Wal-Mart China's five "Strategic Value Networks" (SVNs), which were tasked with leading sustainability change within the organization and now directly involving some 140 associates, continued to build momentum in ways that would lead to broader acceptance among the various stakeholders. To that end, there had been literally hundreds of possible projects that had been suggested, but he and his five SVN leaders urgently needed to cull this to a handful with which to move forward. Scott would accept nothing less than innovative solutions that could both cut costs as well as lead to more sustainable operations. More pressingly, Fertsch knew that he would need to find projects that could communicate real value within the Chinese context, a market known for its high price sensitivity.

The clock was now running, as a cogent case for each project selected would need to be provided in time for the October meeting.

WAL-MART'S 2005 SUSTAINABILITY VISION

By the fall of 2005, Wal-Mart was on track to exceed annual worldwide revenues of US$280 billion (see Exhibit 1). The company had grown significantly from its humble beginnings in Bentonville, Arkansas, to become a retail operation spanning thirteen countries, with over 7,000 stores, 68,000 suppliers and two million associates (see Exhibit 2). All of this had been achieved in just over four decades and was built around an unwavering commitment to low price and great service that comprised the foundation of Wal-Mart's culture. Sam Walton, the founder, stated it this way: "Our customers are the reason we're in business, so we should treat them that way. We offer quality merchandise at the lowest prices, and we do it with the best customer service possible. We look for every opportunity where we can exceed our customers' expectations. That's when we're at our very best." The combination of this formula of value and service along with innovative operational strategies literally remapped the retail landscape in the United States (see Exhibit 3).

This growth, however, had not been without cost. Along with the low prices that the company offered, Wal-Mart had been drawing an increasing amount of public criticism and legal battles ranging from contention over low health benefits for its workers to accusations of gender discrimination when it came to internal promotions. Compounding these issues was the public's growing realization of just how much power had been consolidated in one company. Even simple facts such as the company's status as the largest private user of electricity in the United States (Supercenter (SC) electricity consumption averaged 1.5 million kilowatt-hours per year per store)[1] seemed to paint the company in a negative light.

It was in this context of historically massive business growth and increasing public concern that CEO Scott announced what was to become a paradigm shift for the company as well as its stakeholders. In short, Scott believed that it was critical for Wal-Mart to begin leveraging its core competencies to transform itself into a worldwide leader in the area of sustainable operations. He felt that there was no intrinsic contradiction in being able to offer Wal-Mart's low prices and excellent service to its customers while at the same time reducing the company's ecological footprint.[2] To prove how serious he was about these changes, in a speech broadcast throughout all of its operations in November 2005, Scott earmarked $500 million towards sustainability projects[3] and set the following goals:

- Increase the efficiency of its vehicle fleet by 25 per cent over the next three years and double efficiency in 10 years.
- Eliminate 30 per cent of the energy used in stores.
- Reduce solid waste from U.S. stores by 25 per cent in three years.

Some within Wal-Mart perceived the initiative as simply a cosmetic change that could provide positive public relations at a time when the company was under fire. However, over the ensuing year it became

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[1] *M. Gunther, "The Green Machine," FORTUNE, July 31, 2006.*

[2] *Ecological footprint (EF) analysis is a measure of human demand on the earth's ecosystems and natural resources. First proposed by William Rees in 1992, its concept and calculation were developed by Mathis Wackernagel ("Ecological Footprint and Appropriated Carrying Capacity: A Tool for Planning Toward Sustainability," Ph.D. Thesis, School of Community and Regional Planning, University of British Columbia, 1994).*

[3] *Wal-Mart Sustainability Progress to Date: 2007-2008, http://walmartfacts.com/reports/2006/sustainability/environmentFootprintClimate.html, accessed June 10, 2008.*

clear, according to Fertsch, that the initiative was truly "implanting something green into (Wal-Mart's) DNA."

Wal-Mart organized its efforts in the United States into 14 SVNs that included categories such as store operations, electronic products and packaging (see Exhibit 4). While Wal-Mart began to draw widely upon many outside resources for recommendations and ideas, there were only a few associates tasked full-time with developing these SVNs. Instead, the company put the networks together by giving top-performing managers the responsibility of integrating the sustainability initiatives alongside their current workload. Ideas for projects were categorized in three ways. "Quick wins" were projects that the business and stakeholders could begin immediately. This meant that the concepts would be quickly understood and the project would result in a short-to-immediate payback period. "Innovation projects" were to combine recently available technologies and methodologies that would result in payback periods ranging from one to three years. Finally, "game changers" would be pursued on an ongoing basis and were paradigm shifts intended to result in radical departures from traditional business practice.

By 2007, significant changes had occurred throughout the company. Many of the internal goals that Scott had put forth were well on their way to completion. Wal-Mart had become the largest seller of organic milk and the largest purchaser of organic cotton. There had been large changes in product selection within the categories of seafood, electronics and textiles, along with major changes in the ways that Wal-Mart's suppliers were scored and selected. From a public standpoint, the company had successfully partnered with GE to sell over 110 million compact fluorescent lighting (CFL) units in the United States that year. Despite the fact that it would effectively cannibalize its incandescent product sales, the greater efficiencies and longer bulb life meant that Wal-Mart's customers would save well over $3 billion, conserve 55 billion tons of coal and keep 1.1 billion incandescent light bulbs out of landfills. It was with these initial wins in the United States that Wal-Mart's executive team began to gear up for Wal-Mart's international sustainability initiative.

Wal-Mart China's associates, customers, supplier base and the surrounding communities were significantly different from the stakeholders of other international operations. As such, the solutions and standards that had been pioneered in other regions could provide direction to Wal-Mart China's sustainability initiatives but would not necessarily result in immediate wins. Instead, its SVNs and associated projects would need to be contextualized to the unique challenges and values of the China market.

THE CHINA RETAIL ENVIRONMENT

In 1994, Wal-Mart had begun to investigate what would be needed to launch retail operations in China. The first SC was opened in the southern city of Shenzhen in 1996. Expansion continued for Wal-Mart China at a hobbled rate due to the lengthy application processes necessary for each new location that required authorization by both local and central government agencies. Coupled to these applications were several restrictions in the overall allowable store count per city as well as location. By mid-2008, Wal-Mart China had 106 SCs located throughout the country, 101 Trust-Mart stores (35 per cent stake acquired in 2007) and two distribution centers (DCs) located in Shenzhen and Tianjin, with a third scheduled to open later the year in Jiaxing, Zhejiang province.

While many of Wal-Mart's core values and rules had been directly translated into the Chinese context such as the ten-foot greeting rule being changed to three meters, the company faced significant strategic changes necessitated by the operating environment. Third-party studies and internal research had shown that Chinese customers were significantly more cost-sensitive than those in other countries and that t

existed a strong, established culture of frequently shopping around to find the absolute lowest prices. In some cases, customers simply came just to look around the store as part of their daily walk. Studies found that customer satisfaction level greatly influenced customer loyalty in China. The greatest determinant of that satisfaction was made up of perceived value. This was followed by image, merchandise and shopping environment. Service, check-out process and store policy were all less significant in affecting customer satisfaction, while store facilities and shopping convenience had nearly no impact on customer satisfaction (see Exhibit 5). Wal-Mart's internal studies, however, had identified convenience as being important to overall customer satisfaction — likely related to the fact that the average customer in China purchased smaller quantities more frequently.

The cost sensitivity and smaller purchase amounts were compounded by the restrictions on where Wal-Mart was allowed to locate. Most significantly, Wal-Mart was not able to achieve the densities of around 200 stores per DC for which its normal saturation strategy was configured. Because of this, the company was limited in how much it could leverage key operational strategies that allowed for the low prices its U.S. customers enjoyed. While studies revealed above-average satisfaction with Wal-Mart's pricing, there were questions as to whether Wal-Mart's current pricing structure would attract customers in sufficient numbers in China's smaller cities. In 2007, China's middle class represented a little over six per cent or 80 million Chinese out of a total population of over 1.3 billion (see Exhibits 6 and 7). Customers in this category and more affluent categories were classified by Wal-Mart as A and B customers. While the Chinese government and McKinsey predictions estimated that this segment would grow to 700 million by 2020, Wal-Mart's experience had mainly been in the larger eastern cities. It was unknown whether it could extend its distribution network into the smaller, centrally located cities and maintain prices that were attractive to customers in the C and D income categories. There were, however, indications that Wal-Mart could soon leverage greater cost savings with the full implementation of World Trade Organization (WTO) agreements, including significantly loosened restrictions surrounding store placement decisions.[4] Indeed, SC numbers had almost doubled in the past two years, with infrastructure buildup indicating continued growth.

WAL-MART CHINA SUSTAINABILITY FRAMEWORK

The sustainability effort for Wal-Mart China had been initially overseen by Shawn Gray (VP Wal-Mart China operations), but by 2008, the effort had filtered throughout the high- and mid-level management tiers. Antonio Lee (senior director of supply chain) stated, "Sustainability has become a part of our DNA both from a personal as well as a business perspective. As a corporate citizen, it is our responsibility to do our part in making the world a better place to work and live. Furthermore, Wal-Mart Sustainability is a corporate direction — not just regionalized. The drive and commitment is not only at the top, but throughout the organization."

Moving forward with sustainability in China necessitated the reorganization of the original 14 SVNs into five that encompassed the original network teams while providing a simpler structure. The SVNs in use in the Chinese operations were as follows:

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[4] "Measures for the Administration on Foreign Investment in Commercial Sector," the regulations on foreign investment in commerce, was issued by the Ministry of Commerce on April 16, 2004, and became effective as of June 1, 2004. The new regulations eliminated limits on foreign investment in the retailing industry, covering territory, quantity and proportion of shareholding. Foreign-funded commercial enterprises would be allowed and specific registered capital would no longer be required.

- Sustainable stores and operations: Included Wal-Mart's DCs, its outsourced third party logistics (3PL) providers, retail stores and office spaces. Its goal was primarily to decrease the company's overall footprint of operations and to reduce cost. An example of this was Wal-Mart's research into energy efficient lighting and its implementation throughout its operations.
- Sustainable products: There were four primary categories in this SVN which represented the areas where Wal-Mart felt that it could affect the most difference in its overall sustainability. The current areas were food, electronics, textiles and product packaging.
- Supply chain compliance and standards: Covered all of the standards Wal-Mart required for its products as well as the compliance levels set by local governments. It also included oversight of manufacturing processes. Some of the standards were unique to Wal-Mart and others were local standards that Wal-Mart then projected worldwide. An example of the latter was the Restriction of Hazardous Substances (ROHS) code originating in the United Kingdom that Wal-Mart had begun to adopt as more and more retail markets worldwide strengthened their requirements for compliant products.
- Supply chain efficiencies: Went beyond the standards for compliance that Wal-Mart imposed on suppliers and looked at the entire supply chain to determine what actions would most improve efficiency, reduce cost and reduce the footprint of the entire chain. This included areas like Fleet Management best practices, which described how best to ship products from the DC to stores, from ports to the United States and from the U.S. ports to U.S. DCs. Additionally, it included supplier relationships and explored indirect ways Wal-Mart could offer assistance to its vendors and the various ways that it encouraged its suppliers to take steps to reduce electricity usage.
- Communications: Critical in making Wal-Mart's actions and direction transparent to the outside community, the communications SVN sought to implement best practices for communicating to all of Wal-Mart China's stakeholders. The October 2008 meeting of key leaders in Beijing was considered to be a critical test for this SVN in demonstrating the ways Wal-Mart China was seeking to develop a common vision and understanding among its stakeholders.

WAL-MART CHINA'S OPERATIONS GROUP

Wal-Mart China's operations group was made up of senior directors and VPs under the COO that oversaw Trust-Mart, Supercenter operations, Supercenter merchandizing, Sam's operations, Sam's merchandizing, marketing, supply chain and logistics and private brands (see Exhibit 8).

Merchandizing Operations

All supplier relationships for Wal-Mart China fell under the responsibility of Mimi Lam (VP Supercenter merchandizing), who oversaw product and supplier selection as well as on-going evaluation. While Wal-Mart's international stores sourced from a well-established network of suppliers developed and managed by the Global Procurement division, all domestic procurement was handled by Supercenter merchandizing. There were two primary reasons for this seeming redundancy. Firstly, Chinese law required that companies be licensed for either import/export or for domestic production. It was not possible to be licensed for both. In response, many multinational companies set up holding companies with both types of subsidiaries but the common result was often two very different sales forces. Secondly, a large portion of the most popular Chinese suppliers had yet to test foreign markets with its products and so was still unknown to Global Procurement. Customers coming to Wal-Mart stores in China would expect to see products that they were familiar with at prices at or below those of the competition. Thus, Wal-Mart China's merchandizing group

was allowed to approach suppliers to facilitate closer relationships with the SCs and to improve performance.

As suppliers were responsible for delivering their product to Wal-Mart's DC or, in the case of some products, directly to the SCs (Direct Store Delivery or DSD), the merchandizing group did not have to involve the supply chain group in making decisions concerning product transportation to Wal-Mart locations.

There were a number of programs to encourage best practices throughout Wal-Mart China's supplier network. One such example was the supplier collaboration group comprised of its top vendors that had been chosen to meet together to share learned experiences. The top-scoring companies from this group comprised the board (Blue Moon, Johnson and Johnson, Kimberly-Clark, Kraft, P&G, SC Johnson, Unilever and Colgate). Among the board members, P&G was an example of a large multinational supplier with a long-standing working relationship with Wal-Mart in other parts of the world. Its size had resulted in close scrutiny from environmental watchdog groups and thus a greater transparency on the part of the company. It defined its commitment to sustainable development as "ensuring a better quality of life for everyone, now and for generations to come" and had sustainability programs throughout its worldwide operations. This could be compared to fellow board member Blue Moon, a Chinese national chemical products company supplying the number one hand soap, toilet cleaner and floor cleaner in China, who represented one of the few seats occupied by a domestic-only supplier. Begun in 1994, Blue Moon was a relative newcomer but moved quickly to comply with internationally accepted standards such as ISO14001 certification. Its policy was that, "Protecting the environment is protecting all of us. Our products deliver not only cleanliness but also protection to our customers." To ensure this, Blue Moon used biodegradable materials in its products with no aluminum or phosphate (see Exhibit 9). Wal-Mart China also encouraged participation among its suppliers in third-party initiatives such as the P2E2 (Pollution Prevention Energy Efficiency) program that allowed suppliers to quickly and inexpensively equip their factories with cost-saving equipment (see Exhibit 10).

Wal-Mart China's merchandizing group was also continuing to build sustainability into the evaluation tools it used for supplier selection and on-going evaluation of purchase quantities. However, moving towards sustainability often involved working with vendors over long periods of time to allow them to make the changes necessary to come into compliance. Government agencies as well as non-governmental organizations (NGOs) had strongly encouraged Wal-Mart to not drop companies that failed standards but, in light of China's "Harmonious Society" policy, to give its vendors the time needed to move towards compliance.

DISTRIBUTION CENTER OPERATIONS

Wal-Mart's new 43,000-square-meter DCs had been specifically designed by wholly owned subsidiary Gazeley as next-generation sustainable logistics centers. While the Tianjin DC participated in standard sustainability practices such as helping its associates conserve fuel by busing them from predetermined locations in the city and reselling all of its used cartons, pallets and plastic sheeting, there were other fundamental differences that set the facility apart. The lighting of warehouse areas was supplemented with day-lighting and T5 energy saving light bulbs were used throughout the rest of the facility, resulting in energy savings of 20 to 30 per cent. Air conditioning and heat recycling systems maintained consistent temperatures with less waste. Ten solar energy water heaters provided 1.7 tons of hot water a day projected to save up to 25,550 kilowatt hours each year. Additionally, the DC prominently displayed two 20-square-meter-wide solar cells and two 10-kilowatt wind power generators that together could generate up to 7,300

kilowatt hours per year. Wal-Mart claimed that, as a whole, these systems helped each distribution center reduce 31 tons of CO_2 emissions every year.

When asked about the concept of sustainability, however, staff downplayed its more visible differences. Connie Wu, assistant general manager of the Tianjin DC, stated, "When people talk about sustainability, they normally first point to the systems that were designed into the facility. Sustainability, however, goes far beyond that. It includes the cartons that the material comes packed in as well as the trucks that we unload and load each day."

In contrast to the United States, where over 90 per cent of total store sales passed through DCs, only 40 per cent of Wal-Mart China's sales were supplied via its DCs. Fresh products such as bread, fish, vegetables and fruit, along with some electronics goods and high-value items, were sent directly to the SCs by suppliers (DSD) (see Exhibit 11). These shipments from individual suppliers arrived at the SCs throughout the day. One challenge was the lower-than-expected fill rates (order completeness) for some products supplied to the DSD.

Products arriving at the DC were from vendors in the region or were inter-DC shipments. Whereas Wal-Mart outsourced a standardized trucking fleet (average capacity of 81.5 meters cubed, equivalent to a 40-foot-"high" container) for all of its DC-DC and DC-SC shipments, incoming shipments from suppliers arrived in a diverse range of trucking and loading configurations. While a far cry from the early years in China when some goods arrived on the back of bicycles, the responsibility of incoming goods transport was left to local suppliers and resulted in different truck types, with high stacks of goods and little to no use of pallets. All loading and unloading was accomplished by hand using a 3PL provider. The cartons were tagged with their routing numbers as they arrived and palletized for transport within the facility. They were then moved to either the "stable inventory" — part of Wal-Mart's safety stock that remained at the DC for more than 30 days — or were passed into the "normal inventory," where it was hand-sorted and then routed to either SCs or the Shenzhen DC in less than a day. Boxes were loaded onto trucks without using pallets and seeking to maximize space utilization.

The Tianjin DC had about 70 doors on each side for incoming and outgoing products. Thirty-two doors on the outgoing side were reserved for the SCs and the Shenzhen DC and 10 were reserved for Trust-Mart stores. Goods traveling between the DCs accounted for approximately four to six trucks per week incoming from Shenzhen and one-half to one truck per week outgoing to Shenzhen. Shipments to stores, averaging 25 trucks per day, took place when there was enough merchandise to fill an entire truck. Daily capacity was expected to reach 330,000 cases in full operation — four times that of the old DC opened in 2003.[5]

Whereas DSD lead times were generally only a few days, shipments supplied via the DCs required several weeks from the time the order was placed on the supplier. The average transportation time from DC-store was about two days, but could be higher due to poorer transportation infrastructure (e.g. from Shenzhen to Kunming could take four days) or the requirement for inter-DC movement (e.g. Shenzhen DC to Harbin via the Tianjin DC took about two weeks).

The DC also received six to eight truck loads (22 pallets per truck) per week of products returned from stores due to obsolescence, slow sales or in some cases, quality problems. A return to vendor program was in place to handle these situations. The DC normally reserved space for approximately 1000 pallets of

goods waiting to be returned to suppliers. However, this ballooned to about one-sixth of warehousing floor space soon after holidays such as the Chinese Spring festival.

Supercenter Operations

Operationally, Wal-Mart China offered around 25,000 stock keeping units (skus) per store. While this variety was only about a quarter of that provided in its U.S. stores, it was similar to that provided by its foreign competitors and higher than that provided by most domestic competitors. Based on Wal-Mart's internal data, the company's in-stock rate was in the high 90s — significantly higher than the industry reported average of 90 per cent in 2003.[6] Wal-Mart's estimated inventory was consistent with the report's estimate of a national average of 25 to 40 days.

In comparison to its DCs, Wal-Mart China had been much more limited in opportunities to design sustainability into its SCs. While it employed T5 energy efficient light bulbs and there were initiatives to reduce waste, it was a different situation to the United States, where most of Wal-Mart stores started as greenfield projects. Instead, store managers felt their greatest contribution to sustainability came through the types of products they promoted and the shopping behaviors they encouraged.

Baker Jiang, the Northeast Regional director of operations, commented this way: "We see sustainability issues in everything from the lighting that this store uses to the fact that we ask all of our associates to print on both sides of a page of paper. For the higher level managers there are also personal training sessions where the company helps you to identify places in your personal life that, if changed, could result in a more sustainable environment."

Reusable shopping bags was one area where Wal-Mart China had sought to provide a more sustainable alternative to its customers. The company partnered with Unilever to design a 10 RMB cloth bag and then defrayed 70 per cent of the cost, only asking the customer to pay three RMB. Wal-Mart then set up a special express checkout line for customers using the bags and gave prizes to those who used the bag five times. These initiatives came prior to the Chinese government's announcement that as from June 2008 shops throughout the country would be prohibited from offering thin film bags and would have to visibly charge a separate fee for thicker plastic bags (see Exhibit 12). In response to the change in legislation, Wal-Mart China was preparing further initiatives in this area that were likely to be unveiled at the October 2008 meeting.

Product Inspection

When operations first began, the Wal-Mart DCs in China opened all of the cartons received from vendors. However, with the tightening of government regulations and improvements in supplier reliability, they had moved to either sampling or, in the case of worldwide partners such as P&G, to omitting the inspection altogether. Currently, the only products that were fully inspected were those that needed to be taken out of their initial packaging and repacked into mixed shipments bound for SCs. These inspections were primarily to comply with tight government regulations on disclosing the shipping contents of all cartons.

Inspection at the DC entailed both a cursory check upon arrival to see if the general amounts were correct and whether there was any obvious damage and a subsequent check, for legal reasons, to confirm that

[6] *H. Drinkuth, S. Yeung and F. Zheng, Supply Chain Excellence in Chinese Grocery Retailing, Roland Berger Strategy Consultants, Shanghai, 2003.*

quantities matched those listed on government-required documents. Stores inspected DSD shipments, but did not inspect shipments from DCs. The trucking options and hand loading and unloading took a toll on the outer packaging, with many cartons visibly damaged by the time they arrived at the store. Wal-Mart China's experience, however, was that breakage prior to reaching the shelves was quite small.

Return to Vendor

It was common in China for larger retailers to have negotiated agreements with suppliers allowing for the return of goods that were slow to sell, had quality problems or had been returned by customers in unsalable condition (Wal-Mart offered its customers a 90-day no questions asked return policy for sales of non-perishable goods). Although such return to vendor (RTV) programs were costly, suppliers saw some benefit in avoiding the erosion of product value which could follow price discounting — something more common in the United States. Instead, the Chinese retail/vendor relationship often saw slow-selling items enter a "reverse logistics" process, with the product stored (at the DC, or the store in the case of DSD goods) until goods were reclaimed by suppliers or destroyed. In reality, the actual 14-day grace period for collection was often stretched by suppliers —some suppliers appeared to view Wal-Mart's leniency as an opportunity for free warehousing.

While Wal-Mart sought to sell its entire inventory, sometimes using internal competitions and bonus programs that rewarded SCs that sold the most of certain types of products, the cost of reverse logistics returns was still significant. As such, Wal-Mart was seeking to convince suppliers that discounting unsold product may be preferable to reverse logistics, but it had not been able to find many suppliers willing to provide a small discount in return for ending the RTV program.

LOCALIZED SUSTAINABILITY

Many of the most challenging questions of sustainability concerned resolving the differences in standards and values around the world. Wal-Mart had to account for the varying government regulations, levels of developed infrastructure and customer preferences of the communities throughout its operations. For instance, Wal-Mart had begun to adopt ROHS compliance as a standard in some of its operations with regard to the selection of suppliers and their products. The company had also determined that it could positively impact the global community by promoting CFL bulbs. However, a seemingly simple question like whether to promote these light bulbs in its China region resulted in hours of discussions. The point of contention lay in the fact that each bulb contained a very small amount (less than five mg) of mercury. That level of mercury posed no significant danger by itself, but when multiplied by thousands of light bulbs in a landfill, it created a significant footprint if not recycled properly. Countries like the United States and Germany already had much of the required recycling systems in place to handle this sort of product, but China did not. With most bulb lifetimes being measured in years instead of months, the necessary infrastructure could possibly be developed after sales significantly picked up, as had been the case for CFLs in much of the United States. However, while Wal-Mart could work with suppliers and government agencies to lower the mercury levels in the product and to incorporate recycling costs into the initial sales, there was still the question of who was responsible if certain commitments were not met. However, after much debate at Wal-Mart China and the successful sale of 110 million CFL units in the United States, Wal-Mart China decided to begin working with local suppliers to promote the bulbs in its region. It was able to offer two energy-efficient bulbs for the price of one and planned internal competitions to encourage stores to strongly promote the product. By the end of the promotion, Wal-Mart had sold the majority of its initial stock, but a major increase in consumer purchasing had not materialized and many of its stores were

left with excess inventory. Unlike in the United States, where sales took off, the China market still seemed to be too price-sensitive at the cash register to trust the long-term energy savings the products promised.

The proper disposal of waste was not limited to light bulbs. Wal-Mart China had always accepted responsibility and the associated costs of the safe disposal of fluids used by its quick photo development centers, but determining who should pay for general battery disposal in China was another challenging question. Batteries placed in landfills leeched chemicals harmful to ground water and so strong government regulations existed surrounding their disposal. As a seller of many of these batteries, Wal-Mart had chosen to provide convenient drop-off locations where customers could leave used batteries to be recycled. In countries like the United States, these products were then sold back to recycling centers, defraying the cost of the service. In China, however, interprovincial transport of used batteries required costly licenses and transporting used batteries with other goods was prohibited. These regulations made it cost-prohibitive for Wal-Mart to transport the batteries it collected and so the company had to pay for a certified third party to transport the batteries to recycling centers.

As a final example, some firms in China were unable to meet requirements set by the global sustainability movement because they lacked government-provided infrastructure. For example, even in large urban centers such as Beijing, sewage water treatment only covered 30 per cent of the city as recently as 1996. While the local government in Beijing had broadened sewage treatment availability, many other areas in China still required significant infrastructure upgrades before local companies could comply with standards such as ISO14001 and in many cases appropriate water treatment facilities would not be established for several years. In situations where the supplier was 100 per cent compliant with Chinese laws and regulations but not immediately in a position to change to meet the broader sustainability standards, Wal-Mart generally chose to set a grace period in which it would look for growing compliance. To support this, Wal-Mart China was continuing to develop a scorecard for its suppliers that measured areas like energy efficiency and pollution. It had already implemented a packaging scorecard in which suppliers described how they packaged goods. This allowed Wal-Mart to calculate their footprint and show them how to improve. One example of this involved the packaging of one of Wal-Mart China's apple suppliers. Wal-Mart successfully worked with the supplier to improve cube utilization and switch to single color printing. The end result was a 13 per cent cost reduction in the packaging, with no negative impact on consumer preference.

THE COST OF SUSTAINABILITY

Ultimately, Fertsch knew the question of sustainability every firm had to answer was how much they would be willing to sacrifice in order to achieve footprint and operational goals. He was certain that the view that sustainable products and operations were always more expensive was simply incorrect. It was his belief that there were a great many areas in Wal-Mart operations where the more sustainable option was also the more economical one. Even in the cases where there would be an additional cost, it was often insignificant and resulted in a significantly better footprint. Furthermore, his background in merchandising led him to believe that if Wal-Mart approached the situation creatively with marketing, public relations and supplier support, the consumer would value the smaller footprint and would be more loyal in the long run.

However, Wal-Mart China also had to educate its stakeholders about its policies, products and services in regards to sustainability. Unfortunately, in the past many other companies had sought to portray themselves in a more sustainable position than was actually the case. Their "sustainable solutions" were later determined to have either resulted in little actual change or, in some cases, an even larger ecological footprint. This kind of communication by non-compliant companies was referred to as "Green Washing"

and had resulted in significant public backlash. Consumer confusion over mercury in CFL units was an example of this danger. It was risky for Wal-Mart to make statements until there was more certification of sustainable standards. A European example of this kind of certification movement was Oeko-tex, an organization in Germany that defined standards for textile products — from fiber to ready fabric. But until a time in which these standards and certifications were more developed in China, Fertsch's team would need to move forward carefully so that the communications it released to its suppliers, associates and customers were both true and could stand the test of public scrutiny for years to come.

CHALLENGING DECISIONS

Jonathan Dong (director of public relations) said, "Sustainability will be a differentiating factor between a good enterprise and a great one. It takes vision, leadership, and courage to commit to such a challenge. All the environmental sustainability initiatives being implemented at Wal-Mart are not something we do for public relations mileage. Rather, we are grasping an historic opportunity to put Wal-Mart on a solid footing for long-term, sustainable growth."

History would ultimately look back and judge the full effect that Wal-Mart China's sustainability focus would have on its stakeholders. Fertsch and his team's initial challenge, however, was to lay out the next steps for Wal-Mart China's SVNs and to clearly demonstrate to their stakeholders at the October summit that sustainability in the Chinese context could be not only better, but also more profitable. In particular, Fertsch wanted to identify a few of the many possible projects to serve as examples and to show summit participants the range of possibilities in China. He also wanted to identify key facts that attendees from abroad would need to understand about Wal-Mart's China's situation and options. Finally, he wanted to outline some principles that should be used to decide which projects to pursue.

Exhibit 1

WAL-MART FINANCIAL AND OPERATIONAL RESULTS

	Net Sales	Cost of Sales	Operating, SG&A	Net Income	Number of Stores	Wal-Mart China Stores	China Trust-Mart Stores
2008	374,526	286,515	70,288	12,731	7,262	101	101
2007	344,992	264,152	64,001	11,284	6,779	73	
2006	308,945	237,649	55,739	11,231	6,037	56	
2005	281,488	216,832	50,178	10,267	5,289	43	
2004	256,329	198,747	44,909	9,054	4,906	34	
2003	229,616	178,299	39,983	7,955	4,672	26	
2002	204,001	159,097	35,147	6,592	4,398	19	
2001	180,787	140,720	30,822	6,235	4,172	11	
2000	156,249	121,825	26,025	5,324	3,983	6	
1999	130,522	102,490	21,778	4,397	3,591	5	
1998	112,005	88,163	18,831	3,504	3,394	3	
1997	99,627	78,897	16,437	3,042	3,054	2	
1996	89,051	70,485	13,547	2,737	2,943	1	
1995	78,338	61,929	12,434	2,681	2,784		
1990	25,810	20,070	4,070	1,076	1,525		
1985	6,401	4,722	1,181	271	756		
1980	1248	919	252	41	276		
1975	236	177	48	6	104		
1970	31	23	6	1	18		

All financial data is in US$ millions. Fiscal year ends January 31.

Source: Wal-Mart Annual Reports, http://walmartstores.com/Investors/7666.aspx.

Exhibit 2

WAL-MART'S INTERNATIONAL DATA SHEET AS OF JUNE 2008

Market	Retail Units	Date of Entry
Mexico	1,045	Nov-91
Puerto Rico	54	Aug-92
Canada	305	Nov-94
Argentina	24	Aug-95
Brazil	315	May-95
China (*)	206	Aug-96
United Kingdom	344	Jul-99
Japan	392	Mar-02
Costa Rica	152	Sep-05
El Salvador	71	Sep-05
Guatemala	146	Sep-05
Honduras	46	Sep-05
Nicaragua	46	Sep-05
Wal-Mart International	**3,146**	

** Including a 35 per cent interest in Trust-Mart, which operates 101 stores in China.*

Source: Wal-Mart Stores, Inc. — Facts & News.

Exhibit 3

WAL-MART CULTURE AND RULES

3 basic values and beliefs	Respect for the Individual Service to Our Customers Striving for Excellence
10-foot rule (3-metre rule in China)	"I promise that whenever I come within 10 feet of a customer, I will look him in the eye, greet him, and ask if I can help him."
Sundown rule	"Why put off until tomorrow what you can do today?" Whether it's a request from a store across the country or a call from an associate down the hall, we do our very best to give our customers, and each other, same-day service.
Wal-Mart teamwork spirit	Sam Walton believed it's the teamwork that makes Wal-Mart special. "What makes ordinary people do extraordinary things?" Sam Walton once asked. "Aren't we a group of ordinary folks? We really are. And I think we, together as a team, have done extraordinary things. We've all grown, we've all accomplished much more than any of us ever thought that we could."

Source: Wal-Mart Stores, Inc — Culture.

Exhibit 4

UNITED STATES' SUSTAINABLE VALUE NETWORKS

Energy	Global Greenhouse Gas Strategy
	Energy, Design Construction & Maintenance
	Alternative Fuels
	Global Logistics
Waste	Operations & Internal Procurement
	Packaging
Product	Textiles
	Electronics
	Food & Agriculture
	Forest & Paper
	Chemical Intensive Products
	Jewelry
	Seafood
	China Vendors

Source: Shawn Gray, vice-president - operations, Wal-Mart China, Wal-Mart current sustainability project introduction.

Exhibit 5

CHINESE CONSUMER SATISFACTION SURVEY

	Industry Average	Wal-Mart	Carrefour	Wu-Mart
Product price	70.37	74	71	69
Relative price	68.42	71	71	68
Promotions	64.84	65	67	64
Product variety	74.94	78	78	73
Product quality	74.33	79	75	73

Adapted from: Wang Gao, Li Fei and Lu Qibin, Chinese Supermarkets Customer Satisfaction Research, School of Economics and Management, Tsinghua University. Used with permission.

About the survey:

The data used in this survey is derived from the results of random sampling surveys in 2005 measuring customer satisfaction with supermarkets, conducted with a Computer Assisted Telephone Investigation (CATI) system, by China Retail Research Center, Tsinghua University.

The survey studied 20 large supermarkets in eight large cities and interviewed 5028 customers. The study showed that there is only a small amount of differentiation between supermarkets based on customer satisfaction. However, among the differences found, perceived value is the most important element in customer satisfaction. Perceived value is composed of three sub-factors: product price, relative price to other supermarkets and promotions. This was followed in importance by image, merchandise and shopping environment. Service, check-out process and store policy are less significant in affecting customer satisfaction. Shop facilities and shopping convenience have nearly no impact on customer satisfaction. The customer satisfaction level greatly influences customer loyalty.

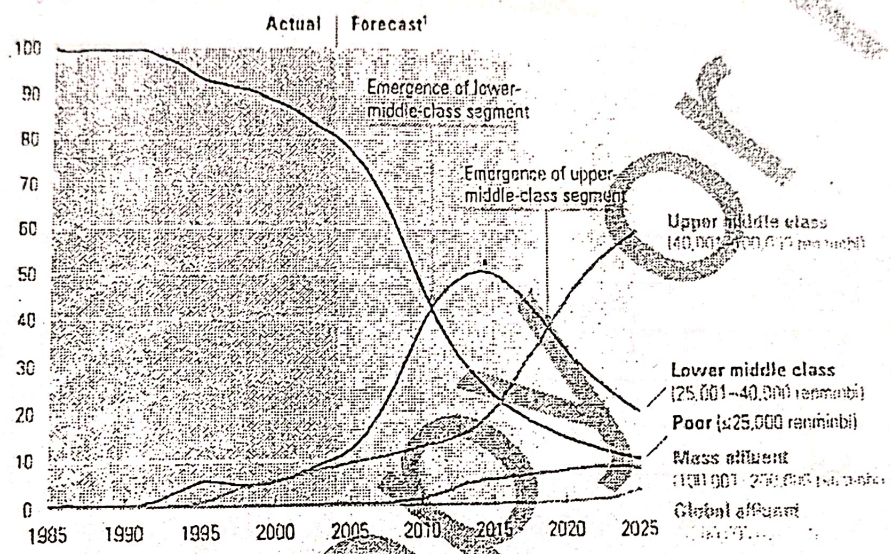
The survey found that all foreign supermarkets ranked above average. Wal-Mart was ranked no. two in the survey, while Carrefour was no. seven and Wu-Mart was no. 17.

Exhibit 6

CHINESE HOUSEHOLD INCOME BY CLASS

The emergence of a middle class

Share of urban households by income class, %



¹Base case forecast, Q1 2006.

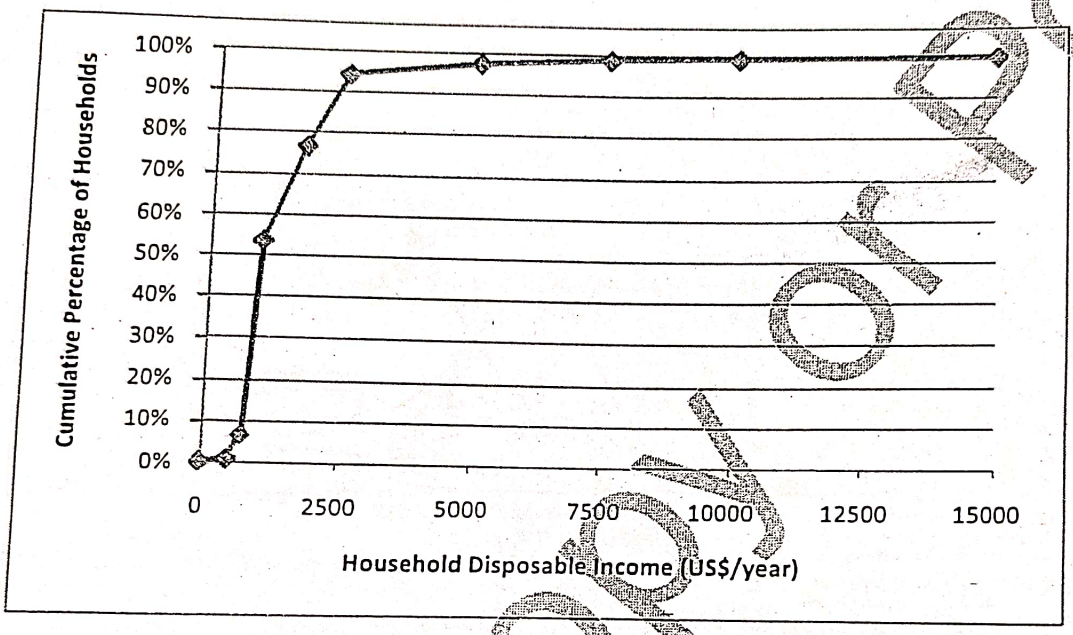
Source: National Bureau of Statistics of China; McKinsey Global Institute analysis

Note: income in US$.

Source: McKinsey Quarterly. Used with permission.

Exhibit 7

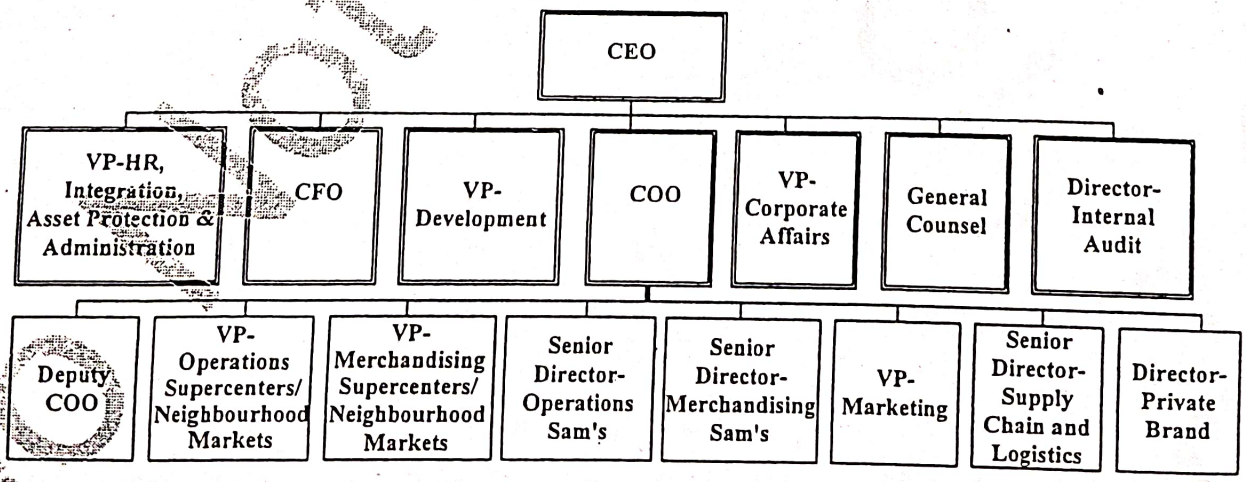
HOUSEHOLD DISPOSABLE INCOME IN CHINA



Source: adapted from Euromonitor International from IMF and National Statistics, 2006.

Exhibit 8

WAL-MART CHINA ORGANIZATIONAL CHART



Source: Wal-Mart China.

Exhibit 9

BLUE MOON

Industry status:

The brand awareness of Blue Moon is 88.74 per cent. Customer satisfaction is 97.40 per cent. In 2006, Blue Moon ranked fourth in China's daily chemical industry. The market shares of its hand wash, toilet cleaner and floor cleaner all ranked #1 in China.

Note: data compiled from CVSC-TNS Research (CTR).

Green policy:

Blue Moon's environmental policy is, "Protecting the environment is protecting ourselves. Our products deliver not only cleanliness but also protection to our customers." The ingredients Blue Moon uses are biodegradable materials, with no aluminum and phosphate. It has promoted environmental awareness and protection in China and has gained ISO14001 certification.

Source: Blue Moon company website, http://www.bluemoon.com.cn

Exhibit 10

P2E2

The P2E2 (Pollution Prevention Energy Efficiency) program based in Hong Kong is an environmental finance business model based on a United States-China program that encourages environmental cooperation. There are two key features of this program: (1) end users in mainland China that have either a Hong Kong parent or subsidiary company may obtain P2E2 technology upgrades to their factories, power plants or real estate developments from a Hong Kong-based —"Environment and Energy Service Company" (EESCO) with no upfront, or extra capital cost, and subject to a performance contract assigned between the two Hong Kong companies; and (2) Hong Kong-based EESCOs are paid in hard currency in Hong Kong for all P2E2 technical upgrade work done in Asian developing countries, including mainland China. Financing for P2E2 projects is provided by Hong Kong commercial banks as working capital and trade finance loans that benefit from loan guarantees, loan syndications, direct investment and other support from the Asian Development Bank and the International Finance Corporation of the World Bank Group. In short, companies in China that have a Hong Kong parent are eligible for free upfront upgrades to their current equipment through P2E2. In return, the companies agree to pay savings accrued from the upgrades back to the P2E2 investors over a given time period.

Source: United States Commercial Service, http://www.buyusa.gov/hongkong/en/about_p2e2.html

Exhibit 11

WAL-MART CHINA'S NORTHERN DISTRIBUTION MODEL

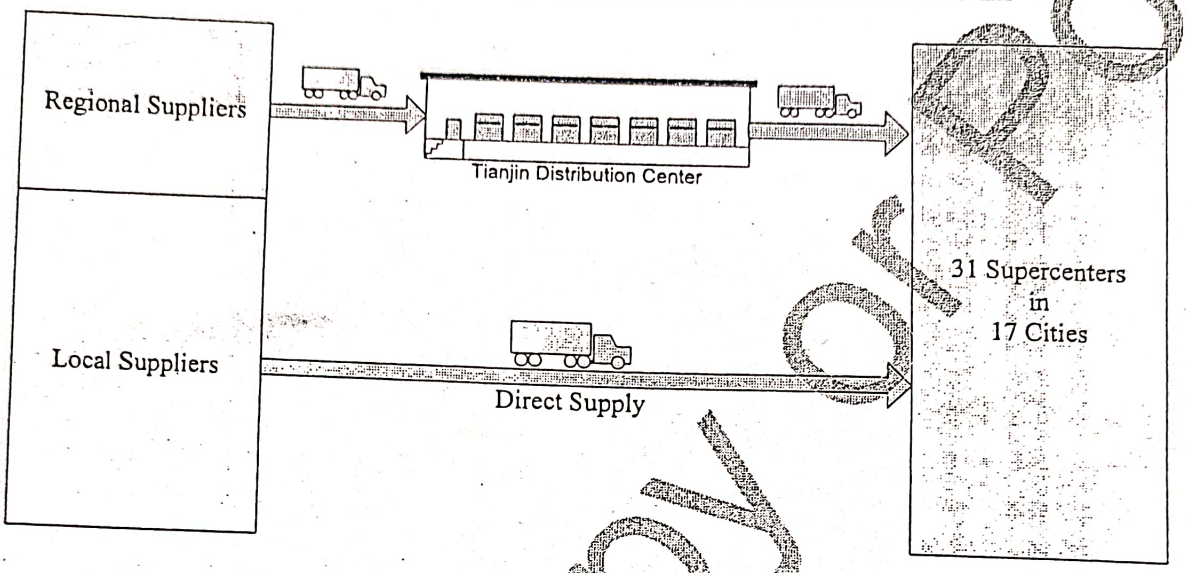


Exhibit 12

CHINA'S NEW PLASTIC BAG POLICY

The China State Council issued a new regulation on the utilization of plastic bags — A Notice on Restraining of Production and Use of Plastic Shopping Bags. From June 1, 2008, the production, sale and use of film plastic bags are prohibited.

The new regulation requires a nationwide prohibition of the production, sale and use of plastic shopping bags thinner than 0.025 mm. All supermarkets, department stores and other markets in China will be required to charge customers for plastic shopping bags. No free plastic shopping bags will be provided. All retailers will have to post the price of the plastic shopping bags and the price of the plastic shopping bags will have to be listed separately from other items purchased by customers. The price of plastic shopping bags can not be merged into the aggregated price of other items purchased. The price of plastic shopping bags should not be less than the net cost of the bags. Individuals and companies found to be non-compliant will face a maximum penalty up to RMB 20,000 (approximately US$2,800).

Source: General Office of the State Council of the People's Republic of China (translated).

No. of Pages -One - 104 - Roll No.....

BA (II) Economics

END SEMESTER EXAMINATION

May/June-2019

SEMESTER IV

PAPER CODE BA 111- Introductory Macroeconomics

Time: 3:00 Hours Max. Marks: 75

Note: Answer 5 questions in all. Each question carries equal marks. Make neat diagram. Only simple calculator allowed.

1. "Circular flows of income can be explained by economic transactions between Households, Firms and the Government, in a closed economy". Explain. What is the significance of injections and withdrawals in an open economy?
2. (a) Demonstrate the relationship between various National Income Aggregates.
   (b) Derive National Income accounting for an Open Economy.
3. Discuss 'nature of inflation', 'accounting for inflation' and 'measurement of inflation'.
4. Define money, explain its functions and show how credit creation takes place in an economy.
5. Explain the debate between Classical and Keynesian thought.
6. "Saving and investment are equal only under equilibrium"

   &

   "Saving is always equal to Investment"; Clear the contradiction between the two statements.
7. How does General Equilibrium take place in a closed economy? Derive and discuss.
8. Short notes on any *two*
   (i) Balance of Payments
   (ii) Consequences and costs of inflation
   (iii) Investment Multiplier.

conditions for unique solution, no solution and infinite solutions. (3)

b) Consider the system:

$$x_1 + x_2 + x_3 = 2q$$
$$2x_1 - 3x_2 + 2x_3 = 4q$$
$$3x_1 - 2x_2 + px_3 = q$$

(i) For what values of p and q, this system has no solution, unique solution and several solutions.

(ii) Determine the values of p, the set of all vectors z that are orthogonal to the three vectors:

$$\begin{pmatrix}1\\1\\1\end{pmatrix}, \begin{pmatrix}2\\-3\\2\end{pmatrix} \text{ and } \begin{pmatrix}3\\-2\\p\end{pmatrix} \quad (7)$$

Q16 (a) State and prove the envelope theorem. (5)

(b) A firm uses inputs K and L of capital and labour respectively to produce a single output Q according to the production function $Q = K^{1/2}L^{1/4}$. The prices of capital and labour are r and w, respectively. Find the cost minimizing inputs of K and L and also the minimum cost C as functions of r, w and Q. Denote the cost minimizing values by K^*, L^* and C^*. Verify the result of Envelope theorem. (5)

Total No. of Pages 4

II SEMESTER **BA(H) Economics**

END SEMESTER EXAMINATION *May 2019*

PAPER CODE BA 112

TITLE OF PAPER Mathematical Methods for Economics II

Time: 3:00 Hours *Max. Marks: 75*

Note : Each Section is compulsory.
Internal choice is given in each section.
Use of simple calculator is allowed.

Section A

Attempt any 11 questions from this section

Q1. For a value of θ $(0 \leq \theta \leq 1)$, following combination of two vectors can be produced:

$(1-\theta)(2,2,4) + \theta(5,0,3)$ (5)

Is it possible for the company to produce the following output vectors:

(i) $\left(\frac{7}{2}, 1, \frac{7}{2}\right)$ (ii) $\left(4, \frac{1}{3}, \frac{10}{3}\right)$ (iii) (1,6,9)

Q2. (i) What is the condition for orthogonality of two vectors in terms of scalar product? (2.5)

(ii) Use the condition of part (i) find out the value of x for which two vectors: (x, x -1, 3) and (x, x, 3x) are orthogonal. (2.5)

Q3. Find the equation of plane through the points (3, 4, -3), (5, 2, 1) and (2, -1, 4) (5)

Q4. Use Cramer's rule to solve the following equations:

$$x_1 - x_2 + x_3 = 2$$
$$x_1 + x_2 - x_3 = 0$$
$$-x_1 - x_2 - x_3 = -6$$ (5)

Q5. For involutive matrix, solve the following (5)

(i) What is involutive matrix. Show that the determinant of involutive matrix is -1 or 1

(ii) Show that $\begin{pmatrix} -1 & 0 \\ 0 & -1 \end{pmatrix}$ and $\begin{pmatrix} 1 & 1-a^2 \\ 1 & -a \end{pmatrix}$ are involutive for all a.

(iii) Show that A involutive implies that $(I_n - A)(I_n + A) = 0$

Q6. Find the rank of the following matrix: (5)

$$\begin{bmatrix} 1 & 2 & -1 & 3 \\ 2 & 4 & -4 & 7 \\ -1 & -2 & -1 & -2 \end{bmatrix}$$

Q7. Find the eigenvalues and eigenvectors for the following:

$$\begin{pmatrix} 2 & 1 & -1 \\ 0 & 1 & 1 \\ 2 & 0 & -2 \end{pmatrix}$$

Q8. If $f(x,y) = y^3 e^{x^2}$, find all of the first and second-order partial derivatives at $(x,y) = (0,1)$. (5)

Q9. A) Find the directional derivatives:

$f(x,y) = 2x + y - 1$ at (2,1) in the direction of (1,1) (2)

B) Describe chain rule of differentiation with $z = f(x,y)$ and $x = g(t,s)$ and $y = h(t,s)$. Use chain rule to find dz/dt for the following:

$F(x,y) = x + y^2$ and $x = t^2$ and $y = t^3$ (3)

Q10. In a growth model studied by N. Kaldor and J. A Mirrlees, a function N is defined by

$$N(t) = \int_{t-T(t)}^{t} n(\tau) e^{-\delta(t-T(t))} d\tau$$

Where T = T(t) is a given differentiable positive function. Compute $\dot{N}(t)$. (5)

Q11. M. Brown and J.S De Cani in a paper on technical progress and income distribution used the following profuction function:

$$F(K,N) = \delta_1 \left(\frac{N^\beta K^\beta}{N^\beta + \delta_2 K^\beta} \right)^{u/\beta}$$

Where β, u, δ_1 and δ_2 are positive constants. Compute σ_{KN} (5)

Q12. (i) Solve the following differential equation

$\dot{x} = \frac{(\beta - \alpha x)(x - \alpha)}{x}$ (3)

(ii) Categorise the equilibrium points of the following equation using slope field and phase diagram.

$\dot{x} = x(x-2)$ (2)

Q13. A firm wants to minimize its cost function given by $x^2 + y^2 + z^2$. The firm has to deal with two constraints given by $x + 2y + z = 1$ and $2x - y - 3z = 4$. Find the value of x and y that optimizes the cost function subject to the constraints. (5)

Section B

Attempt any two questions from this section.

Q14 a) Consider the system of equations

$$u^2 + v = xy$$
$$uv = -x^2 + y^2$$

Find the differentials of u and v expressed in terms of dx and dy. Find the partial derivatives of u and v with respect to x and y. Use differential to evaluate the value of $u(1.01, 0.02)$.

b) Let $F(K,L,M) = AK^a L^b M^c$. Show that $KF'_K + LF'_L + MF'_M = (a+b+c)F$ (5)

Q15 a) Define degrees of freedom and superfluous equations in system of equations involving m equations and n variables. State the

Name of the Course: BA (Hons) Economics

Name of the Paper: English Communication Ability Enhancement Course

Semester: II BA 113

Time: 3 Hours

Maximum Marks: 75

(Write your roll no. on top immediately on receipt of this question paper). Answer all questions.

1. Write short notes on any five of the following : (5 x 2 =10 marks)
   (a) Kinesics
   (b) Inflections
   (c) Feedback
   (d) Intra personal communication
   (e) Haptics
   (f) Paralanguage
   (g) Soliloquy
   (h) Machine translation
   (i) Various barriers to communication
   (j) Word stress

2. Read the passage below and answer the questions that follow:

Like all Americans, I worship the dollar. I always believed it was the single thing that separated us from the rest of the world. With the dollar you could travel anywhere and merchants would be happy to relieve you of it. Currencies in the rest of the world would fluctuate, but the mighty dollar stood firm.

Ugly American tourists in Europe would make snide remarks about the French franc and compare the Italian lira to Kleenex. Everywhere they went, there were signs in the store windows, "English Spoken – Dollars Welcome Owner Willing to Take the Abuse."

American tourists pretended they were superior to the culture of "Old Europe." We were the new empire and we made sure everyone knows it. I remember buying an English-French dictionary in Paris. The first thing you were supposed to say to a French merchant was, "How much is that in dollars"? The second thing you said was, "You are a crook."

It wasn't until 1957 that we printed "In God We Trust" on our greenbacks. We always knew God was behind the dollar, but we wanted to make sure the communists knew it. A few Americans claimed that by putting God on our currency we were mixing Church and the state. But they lost the battle. From then on the whole world knew that God supported our currency. To attract people, the credit card companies put out the word that God also supported plastic, which was the same thing as dollars.

Why am I prattling like this? Out of the blue, the dollar is dropping and the Euro is going up.

The United States laughed when the euro first came out, but it isn't laughing anymore. To fight back, we printed more money, but the more we printed, the more the dollar went downhill. European merchants took down their "English Spoken Here" signs. A cup of coffee now costs five American dollars. Postcards are $30, and a gondola in Venice goes for $50 an hour – with no singing.

For the first time, we are being publicly humiliated because our dollar is weak. Some ask, "Has God let us down?" The White House keeps saying, "The dollar is exactly where we want it to be – or it wouldn't be there."

If there is any solace in all this, it is that the Canadian dollar is weaker than the American one. This causes friction between the neighboring countries, but there is nothing Canada can do about it – except field a good hockey team.

I am sure the dollar will come back, particularly if China buys more American toys than we buy Chinese ones.

When I told a friend that France is attacking our money, he said, "What else is new?"

Questions:

(a) Illustrate how the author demonstrates - the blow to dollar supremacy was shocking and unbelievable for the Americans? (3 marks)

(b) Comment how the writer aptly portrays the relationship between economy/foreign policy and religious legitimization? (3 marks)

(c) Find words from the passage with similar meanings to the following words: (4 marks)

1. Babbling
2. Disgraced
3. Resistance
4. Comfort

(d) Re-write this short passage in the form of a dialogue between an American tourist and a French shopkeeper. Highlight the post-colonial anxieties of the American with reference to the falling price of the dollar. (10 marks)

3. Read the passage below and write a summary in 50 words: (10 marks)

A jolly musicologist by the entirely unobjectionable name of Henry Pleasants has written a book called 'The Agony of Modern Music'. That word 'agony' is right. Much of it is just not written down but improvised. Much of what passes for music of these times is raucous noise and the excuse for persisting with it is that energy common youngster understands and likes it. That Pleasant fellow concedes that 'serious' music is virtually dead. This may be dismissed as yet another pleasantry which the undirected young indulge in. Paul Hindesmith, possibly one of the last of the classical giants, once said that some composers tended to develop an over-sublimated technique which produces images of emotions that are far removed from any emotional experience, a relatively normal human being ever has. That is just the point. High art can never be totally democratized. There is a barrier between the egghead and the hoi polloi and it would be lazy idealism to ignore this. When Bach played and Beethoven roared, who was then the gentleman? The pity of it is that while taking music to the masses, all known rules are broken and improvisation becomes King. That, roughly speaking, is how jazz was born; by dropping discipline, inspiration, deep personal emotions and every element of creative art and adopting improvisation as its main rational. Why, they even tried to smuggle bits of jazz into serious music so that the composers could somehow survive. Now, they are going one step further; learn it by ear, don't write down the stuff, make it up as you go along and hope, by these shoddy techniques, that everyone present will applaud and thus provide the composer and the performers with their daily bread.

4. (a) Interview a theatre artist on difficulties faced by street play performers. (10 marks)

OR

(b) Interview a theatre artist on how street shows can help in building public consensus.

5. Prepare a public speech on any **one** of the following: (10 marks)

(a) Effect of advertisements on our lives.

OR

(b) Is discipline antagonistic to creativity in life?

6. (a) Translate the poem in Hindi in your own words: (5 marks)

Nothing Gold Can Stay

Nature's first green is gold,
Her hardest hue to hold.
Her early leaf's a flower;
But only so an hour.

Then leaf subsides to leaf.
So Eden sank to grief,
So dawn goes down to day.
Nothing gold can stay.

OR

(b) Translation as a practice seeks to find equivalences from the source to the target language. Discuss with suitable examples how cultural connotations disrupt this process of finding equivalences.

7. Prepare a report on any **ONE** of the following: (10 marks)

(a) You attended a cricket match. Write a report on the match, for a newspaper that you work for.

OR

(b) You were present at a promotional event for an upcoming movie. Write a report on the event and the interactive session.

OR

(c) Write a complaint letter to the manager of a hotel that you stay regularly regarding poor quality room service during your recent visit.

Total No. of Pages 2

Roll No.....

SECOND SEMESTER

BA (ECONOMICS)

END SEMESTER EXAMINATION *May/June-2019*

BA115 CUSTOMER RELATIONSHIP MANAGEMENT

Time: 3:00 Hours

Max. Marks: 75

Note :
All questions are compulsory and carry equal marks. Internal choice is available in Q1-4.
Assume suitable missing data, if any.

Q.1[a] Discuss why companies would want to lengthen the duration of relationships with its customers. In which circumstances could a long term relationship be disadvantageous?

[b] What is prospecting? How do B2B companies identify their prospects?

[c] Discuss Kano's model of Customer Delight with examples from the airline industry. (Attempt **any 2**: 7.5*2 =15 marks)

Q.2[a] Who are the Strategically Significant Customers of a company. Discuss the types.

[b] What do we mean by Customer Engagement? Discuss the dimensions of Customer Engagement.

[c] Discuss the kinds of risks that a customer faces while making a purchase. How does he try to minimize those risks?
(Attempt **any 2**: 7.5*2 =15 marks)

Q.3 [a] Discuss the steps involved in choosing a CRM Tool.
[b] Discuss the various phases of CRM Implementation within an organization.

[c] What is a Marketing Automation Software? Discuss some functionalities of this form of Operational CRM. (Attempt any 2: 7.5*2 =15 marks)

Q.4 Write short notes on any 3 of the following (5*3 = 15 marks)

[a] Satisfaction Profit Chain

[b] Trivariate Model of Customer Portfolio Management

[c] Customer Experience Mapping

[d] Functional & Hedonic Value

Q.5 [a] A multibillion dollar conglomerate has launched an e-commerce website for the new generation of Indians. A country-wide advertisement campaign is being run on television, radio, newspapers and some magazines. There is outdoor advertising and engagement at various college events as well. To ensure 360 degree awareness, the company is also running a digital campaign across the various social media and running advertisements online.

Identify all the touch-points that this company may have with its customers based on the data above and your own understanding of how a customer may use the company's website. Categorize the touch-points across phases of the customer journey. Discuss how the company may determine that it is doing well at these touch-points (i.e. what is the KPI?). (10 marks)

[b] A customer buys three different products in a year of Rs 5000, Rs 1000 and Rs 10,000 in a given year. The company raises the price of each product by Rs 500 each year. The customer remains loyal to the company and continues to buy the product for the next 3 years. At the same time, due to increase in prices, the company is able to better serve its customers and the cost-to-serve gradually increases by Rs 1000 each year. Cost to serve in the first year was Rs 5000. The company has spent Rs. 20,000 to first acquire this customer. Calculate the CLV of this customer if the discount rate is assumed to be 10%. Is this customer profitable? (5 marks)

Total No. of Pages: 02

Roll No.....

IV SEMESTER

BA Economics

END SEMESTER EXAMINATION

May/June-2019

BA 211: Intermediate Microeconomics 2

Time: 3:00 Hours

Max. Marks : 75

Note : 1. Section A is compulsory.
2. Attempt any two questions from Section B.
3. Attempt any one question from section C.

SECTION A

Q-1. Describe the first welfare theorem and its implications in the context of general equilibrium in exchange market. (Use diagram). (15)

Q-2. Explain any *one* of the following in detail: (15)

A) Bergson Samuelson's social welfare function

B) Walrasian Law in exchange market.

SECTION B (Attempt any *two* questions)

Q-3. A) Explain the two-tariff policy of monopolist in second degree price discrimination policy. (5)

B) Suppose a perfectly competitive industry can produce widgets at a constant marginal cost of $10 per unit. Monopolized marginal costs rise to $12 per unit because $2 per unit must be paid to lobbyists to retain the widget producers' favoured position. Suppose the market demand for widgets is given by

$$Q_D = 1{,}000 - 50P$$

a. Calculate the perfectly competitive and monopoly outputs and prices. (5)

b. Calculate the total loss of consumer surplus from monopolization of widget production. (5)

Q-4. A) The game of Chicken is played by two macho teens who speed toward each other on a single-lane road. The first to veer off is branded the chicken, whereas the one who doesn't veer gains peer-group esteem. If neither veers, both die in the resulting crash. Payoffs to the Chicken game are provided in the following table. (10)

		Teen B	
		Veer	Don't Veer
Teen A	Veer	2, 2	1, 3
	Don't veer	3, 1	0, 0

a. Draw the extensive form.
b. Find the pure-strategy Nash equilibrium or equilibria.
c. Compute the mixed-strategy Nash equilibrium.

(B) Explain sequential game and sub-game perfect equilibrium in sequential game with the use of traditional example of Battle of sexes. The pay of matrix is given below: (05)

		Player 2 (Husband)	
		Ballet	Boxing
Player 1 (Wife)	Ballet	2, 1	0, 0
	Boxing	0, 0	1, 2

Q-5. Suppose that firms 1 and 2 operate under conditions of constant average and marginal cost but that firm1's marginal cost is $c_1=10$ and firm 2's is $c_2=8$. Market demand is Q=500-20P.

a) Suppose firms practice Bertrand competition, that is, setting prices for their identical products simultaneously. Compute the Nash equilibrium prices. (To avoid technical problems in this question, assume that if firms charge equal prices then the low-cost firm makes all the sales.) (05)
b) Compute firm output, firm profit, and market output. (05)
c) Is total welfare maximized in the Nash equilibrium? If not, suggest an outcome that would maximize total welfare, and compute the deadweight loss in the Nash equilibrium compared to your outcome. (05)

SECTION C (Attempt any *one* question)

Q-6. Analyse the relationship between externality and efficiency. Explain Coase theorem in consumption externalities with the use of example and diagrams. (15)

Q-7. A) Explain market failure due to asymmetric information in the market of lemons and plums. (7)

B) Write a short note on the following: (8)

a) Moral Hazard
b) Signalling
c) Adverse selection
d) Free riding in public goods

asymmetric information problem? If yes, then identify its type. What actions can SBI take to mitigate this type of asymmetric information problem? (6)

(b) Write down all the assumptions of Harrod-Growth Model. Then derive the relationship between the warranted rate of growth, the expected rate of growth and the actual rate of growth. Using this, explain the Harrod instability problem in an economy. Also, tell what makes Harrod model a Keynesian model. (6)

(c) A booming stock market is good for investment. Explain? (3)

Total No of Pages : 4 Roll No.....

FOURTH SEMESTER B.A (H) ECONOMICS

END SEMESTER EXAMINATION MAY-2019

BA212 (INTERMEDIATE MACROECONOMICS II)

Time: 03:00 Hours Max. Marks: 75

Note : First two questions are mandatory.
Attempt any three out of remaining four questions.
All questions carry equal marks.

Q1. (a) True or False. Explain?

(i) Given that the primary objective of monetary policy is to achieve a given inflation rate in the long-run, monetary policy based on inflation targeting is a better approach in the long-run but not in the short-run.

(ii) A conservative central banker (the one who dislikes inflation) will choose a higher "a" and a lower "b" in the Taylor's rule.

(iii) According to Ricardian Equivalence, a tax cut today will expand economic activity provide there is no risk of corresponding tax increase in the future.

(iv) Fiscal consolidation in a country like India provides more independence in the use of monetary policy.

(v) As permanent income hypothesis, a temporary change in income will have much more impact on consumption than a permanent change.

(vi) Existence of borrowing/liquidity constraint will make consumption very sensitive to current income no matter whether the constraint is binding or not.

(2×6=12)

(b) Brokerage fee is Rs. 5 per trip, Size of paycheck or Income is Rs. 400 and interest rate is 10%. Using transaction demand for money theory by Baumol and Tobin, calculate optimal average cash withdrawal by the individual. Also calculate the optional number of trips made to the bank. (3)

Q2. (a) Consider Cobb-Douglas production function: $Y = K^{\alpha}L^{1-\alpha}$, with $\alpha = 0.3$. Assume that nominal interest rate (i) = 8%, expected inflation (π^e) = 0, depreciation rate (d) = 4%, P = 1 and Y = 5000.

(i) Calculate the desired capital stock (K*).

(ii) Now suppose that Y is expected to rise to 6000. What is the corresponding desired capital stock?

(a) Suppose that the capital stock was at the desired level before the change in income was expected. Suppose further that speed of adjustment (λ) is 0.4 in the gradual adjustment model of investment. What will rate of investment be in the first year after expected income changes? In the second year? (2+2+3)

(b) Consider a Solow model with n=3%, g=2%, δ=3%, s = 32% and production function: $Y=K^{1/3}(EL)^{2/3}$.

(a) Calculate steady state capital stock per effective worker ($\hat{k}^*$), steady state output per effective worker ($\hat{y}^*$).

(b) Continue with (a), now suppose E = 10, calculate steady state capital per worker (k^*) and steady state output per worker (y^*).

(c) Finally, calculate golden rule steady state ($\hat{k}_G^*$). And then calculate the golden rule level of consumption per effective worker ($\hat{c}_G^*$). (3+2+3=8)

Q3. (a) Using Romer's model, explain how a permanent increase in s_R i.e. share of labour force employed in research sector, affect the advanced economies of the world? To be more specific, show that change in s_R has only level effect not the growth effect in the Romer's model. Use all diagrams with explanation. (8)

(b) One view of the consumption function is that workers have high propensities to consume and capitalists have low propensities to consume. To explore the implications of the view, suppose that an economy consumes all wage income and saves all capital income. Show that if factors of production earn their marginal product, this economy reaches the golden rule level of capital. (3)

(C) Define these goods in terms of their degree of excludability and rivalry.
(i) Chicken
(ii) Trade secrets for Coca cola;
(iii) Clean Air
(iv) Table in your college. (4)

Q4. (a) A person lives for 4 periods and earns Rs.0, Rs.40, Rs.60, Rs.100 respectively in 4 periods. Assume there is no interest rate, borrowing is possible and he leaves nothing after him.

(i) Determine the level of consumption compatible with the budget constraint, if he wants an even consumption profile. Indicate in which period he saves, dissaves and in what amount.

(ii) How in each case below, the consumption profile will change if he prefers to keep it even as much as possible.

Case I: He receives wealth Rs.13 at the beginning of the time 2 but he knew about this beforehand.

Case II: He receives wealth Rs. 13 at the beginning of the time 2 but it was a surprise for him.

Case III: Suppose he wants to leave a bequest of Rs 40 for next generation.

[3 + (3+3+2)=11]

(b) What do you understand by consumption puzzle? How it arose and how is it related to Keynesian consumption function? (4)

Q5. (a) Using business cycle theories by New Keynesians and New Classicals, answer the following:

(i) Discuss how long term labour contract can act as a source of a business cycle.
(ii) Explain Friedman's and Phelps's versions of the fooling model. (2+4)

(b) There is a balanced budget before year 1. Taxes are cut in year 1 by Rs. 10. If the nominal interest rate is 10% and expected inflation is 5%, then show the path of taxes and debt if the government wants to stabilize the debt from year 3 on (assuming government expenditure remain unchanged). (4)

(c) What do you understand by golden rule steady state? Suppose an economy is working below golden rule steady state. Show the transition paths of output, consumption and investment towards golden rule steady state. (5)

Q6. (a) Raheem wants to borrow from State Bank of India (SBI) to open a gift shop. But the bank (SBI) has a concern that the Raheem might not payback the loan amount. Is there asymmetric the information problem? If yes, then identify its type. What actions can SBI take to mitigate this type of asymmetric information problem? Now suppose that Raheem has got the loan but instead of opening the gift shop has spent the borrowed money on lottery in Goa. Is there

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IV SEMESTER **B.A. (Hons.) Economics**

END SEMESTER EXAMINATION *May/June-2019*

PAPER CODE: BA213 TITLE : Introductory Econometrics

Time: 3:00 Hours *Max. Marks : 75*

Note : Answer any 5 out of 7 questions
Question no. 1 is compulsory
All questions carry equal marks.
Assume suitable missing data, if any.

Q.1

1.1) (5 marks) Explain the meaning of:

1.1.a) Gauss Markov Theorem

1.1.b) OLS estimators.

1.1.c) Normality Assumption

1.1.d) JB Statistics

1.1.e) Residual sum of squares (RSS).

1.2) (5 marks) The STATA regression result of the rate of growth of employment on the rate of growth of real GDP using a sample of 25 OECD countries is given below:

```
      Source |       SS       df       MS              Number of obs =      25
-------------+------------------------------           F(  1,    23) =   33.10
       Model |  14.5753023     1  14.5753023           Prob > F      =  0.0000
    Residual |  10.1266731    23  .440290135           R-squared     =  0.5900
-------------+------------------------------           Adj R-squared =  0.5722
       Total |  24.7019754    24  1.02924898           Root MSE      =  .66354

------------------------------------------------------------------------------
           e |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           g |    .489737   .0851184     5.75   0.000     .3136561    .6658179
       _cons |  -.5458912   .2740387    -1.99   0.058    -1.112784    .0210011
------------------------------------------------------------------------------
```

1.2.a) Calculate the corresponding F statistic and check that it is equal to 33.10, the value printed in the output. (2 Marks)

1.2.b) Perform the F test at the 5 percent, 1 percent, and 0.1 percent significance levels. Is it necessary to report the results of the tests at all three levels? ([illegible] marks)

1.3)

(5 marks) The relationship between the GDPI and GDP, United States, 1990–2005 in billions of dollars is given below:

$$GDPI_t = [illegible] + [illegible]35\ GDP_t$$

$$se = ([illegible])\quad ([illegible]29)\qquad r^2 = 0.9648$$

1.3.a) Please re-write equation with GPDI in billions of dollars and GDP in millions of dollars with r^2 (1 mark)

1.3.b) Please re-write equation GPDI in millions of dollars and GDP in billions of dollars with r^2 (1 mark)

1.3.c) Suppose that GDP_t in 2004 is expected to be 100 billions. Use the above equation to estimate the predicted (average) $GDPI_t$ for 2004? (1 mark)

1.3.d) Establish a 95% confidence interval for the predicted value in part (c). (2 marks)

Q.2 [illegible] true/false and give explanation. (15Marks)

2.1) [illegible] is a non-linear regression model.

2.2) [illegible] of a random variable from its mean value [illegible]

2.3) Since the correlation between two variables, Y and X, can range from −1 to +1, this also means that cov (Y, X) also lies between these limits.

2.4) For a given alpha and d.f., if the computed |t| exceeds the critical t value, we should accept the null hypothesis.

2.5) When $R^2 = 1$, $F = 0$, and when $R^2 = 0$, $F =$ infinite.

2.6) The adjusted and unadjusted R^2s are identical only when the unadjusted R^2 is equal to 1.

2.7) When we say that an estimated regression coefficient is statistically significant, we mean that it is statistically different from 1.

2.8) Consider the regression model

$$y_i = \beta_1 + \beta_2 x_i + u_i$$

where $y_i = (Y_i - \bar{Y})$ and $x_i = (X_i - \bar{X})$. In this case, the regression line must pass through the origin.

2.9) For the double-log model, the slope and elasticity coefficients are the same.

2.10) The R^2 of a log-log model can be compared with that of a log-lin model but not with that of a lin-log model.

2.11) In the model $Y_i = B_1 + B_2 D_i + u_i$, letting D_i take the values of (0,2) instead of (0, 1) will halve the value of B_2 and will also halve the t value.

2.12) In the presence of heteroscedasticity OLS estimators are biased as well as inefficient.

2.13) If an auxiliary regression shows that a particular is high, there is definite evidence of high collinearity

2.14) Multicollinearity is harmless if the objective of the analysis is prediction only.

2.15) The Durbin-Watson d is useless in autoregressive models where one of the explanatory variables is a lagged value(s) of the dependent variable.

Q.3

3.1) (5 marks) What are the various methods of estimating the autocorrelation parameter in the AR(1) scheme?

3.2) (5 marks) Describe all the steps associated with RAMSEY'S RESET Test of model specification.

3.3) (2 marks) In a study of the determination of prices of final output at factor cost in the United Kingdom, the following results were

obtained on the basis of annual data for the period 1951–1969:

$$\widehat{PF}_t = 2.033 + 0.273W_t - 0.521X_t + 0.256M_t + 0.028M_{t-1} + 0.121PF_{t-1}$$

$$se = (0.992) \quad (0.127) \quad (0.099) \quad (0.024) \quad (0.039) \quad (0.119)$$

$$R^2 = 0.984 \quad d = 2.54$$

where PF = prices of final output at factor cost, W = wages and salaries per employee,

X = gross domestic product per person employed, M = import prices,

Mt−1 = import prices lagged 1 year, and PFt−1 = prices of final output at factor cost in the previous year.

"Since for 18 observations and 5 explanatory variables, the 5 percent lower and upper d values are 0.71 and 2.06, the estimated d value of 2.54 indicates that there is no positive autocorrelation." Comment on appropriateness of using d statistics for this model.

3.4) (3 Marks) Complete the following table: (d statistics table is given on last page)

Sample size	Number of explanatory variables	Durbin-Watson *d*	Evidence of autocorrelation
60	6	3.72	—

Q.4

4.1) (10 marks)

In a study of turnover in the labor market, James F. Ragan, Jr., obtained the following results for the U.S. economy for the period of 1950- I to 1979-IV (Figures in the parentheses are the estimated t statistics.)

$$\widehat{\ln Y_t} = \underset{(4.28)}{4.47} - \underset{(-5.31)}{0.34 \ln X_{2t}} + \underset{(3.64)}{1.22 \ln X_{3t}} + \underset{(3.10)}{1.22 \ln X_{4t}} + \underset{(1.10)}{0.80 \ln X_{5t}} - \underset{(-3.09)}{0.0055 X_{6t}} \qquad \bar{R}^2 = 0.5370$$

where Y = quit rate in manufacturing, defined as number of people leaving jobs voluntarily per 100 employees

X_2 = an instrumental or proxy variable for adult male unemployment rate

X_3 = percentage of employees younger than 25

$X_4 = N_{t-1} / N_{t-4}$ = ratio of manufacturing employment in quarter (t−1) to that in quarter (t − 4)

X_5 = percentage of women employees

X_6 = time trend

4.1. a) Interpret the foregoing results.

4.1.b) Is the observed negative relationship between the logs of Y and X_2 justifiable a priori?

4.1.c) Why is the coefficient of ln X_3 positive?

4.1.d) Since the trend coefficient is negative, there is a secular decline of what percent in the quit rate and why is there such a decline?

4.1.e) Is the Adjusted R^2 "too" low?

4.1.f) Can you estimate the standard errors of the regression coefficients from the given data? Why or why not?

4.2) (3 marks)

Source of variation	Sum of squares (SS)	d.f.	Mean sum of squares (MSS)
Due to regression (ESS)	65,965	—	—
Due to residual (RSS)	—	—	—
Total (TSS)	66,042	14	

4.2.a) What is the sample size and value of the RSS? (1 mark)

4.2.c) What is R^2 and Adjusted $\bar{R}^2$? (2 marks)

4.3)

(2marks) If you have monthly data over a number of years, how many dummy variables will you introduce to test the following hypotheses:

i) All the 12 months of the year exhibit seasonal patterns.

ii) Only February, April, June, August, October, and December exhibit seasonal patterns.

Q.5

5.1) (10 marks)

The following regression results were based on monthly data over the period January 1978 to December 1987:

Model I:

$\widehat{Y}_t =$ 0.00681 + 0.75815X_t

se = (0.02596) (0.27009)

t = (0.26229) (2.80700)

p value = (0.7984) (0.0186) $r^2 = 0.4406$

Model II:

$\widehat{Y}_t = 0.76214X_t$

se = (0.265799)

t = (2.95408)

p value = (0.0131) $r^2 = 0.4$

5.1.a) What is the difference between the two regression models?

5.1.b) Given the preceding results, would you retain the intercept term in the first model? Why or why not?

5.1.c) How would you interpret the slope coefficients in the two models?

(6)

5.1.d.) What is the theory underlying the two models?

5.1.e) Can you compare the r^2 terms of the two models? Why or why not?

5.1.f.) The Jarque–Bera normality statistic for the first model in this problem is 1.1167 and for the second model it is 1.1170. What conclusions can you draw from these statistics?

5.1.g) The t value of the slope coefficient in the zero-intercept model is about 2.95, whereas that with the intercept present is about 2.81. Can you rationalize this result?

5.2) (5 Marks) For the model:

$$\left(\frac{1}{Y_i}\right) = B_1 + B_2 X_i + u_i$$

5.2.a) What is the interpretation of B2? (1 mark)

5.2.b) What is the rate of change of Y with respect to X? (1 mark)

5.2.c) What is the elasticity of Y with respect to X? (1 mark)

5.2.d)

$$Y_i = B_1 + B_2\left(\frac{1}{X_i}\right) + u_i$$

Can you compare the r^2 s of the two models? Why or why not? How do you decide which is a better model? (2 marks)

Q6)

6.1) (5 marks)

Consider the following model:

$Y_i = B_o + B_1X_i + B_2D_{2i} + B_3D_{3i} + u_i$

where Y = annual earnings of MBA graduates

X = years of service

$D_2 = 1$ if Harvard MBA ; = 0 if otherwise

D3 = 1 if Wharton MBA; = 0 if otherwise

6.1.a) What are the expected signs of the various coefficients?

6.1.b) How would you interpret B_2 and B_3?

6.1.c) If $B_2 > B_3$, what conclusion would you draw?

(7)

6.2) (5marks) What are the consequences of omission of a relevant variable?

6.3) (5 marks) The EViews result of hetroscedasticity test is given below:

Heteroskedasticity Test: White
Null hypothesis: Homoskedasticity

F-statistic	16.03479	Prob. F(2,45)	0.0000
Obs*R-squared	19.97338	Prob. Chi-Square(2)	0.0000
Scaled explained SS	39.70599	Prob. Chi-Square(2)	0.0000

Please describe the test conducted and its interpretation.

Q7)

7.1) (10 marks) Weekly consumption expenditure (Y), weekly income (X_2), and wealth (X_3), all in dollars.

$$\hat{Y} = 24.3370 + 0.8716\,X_2 - 0.0350\,X_3$$

$$t = (3.8753)\quad (2.7726)\qquad (-1.1604)\qquad R^2 = 0.9682$$

7.1.a.) Is there collinearity in this regression? How do you know?

7.1.b) Regressions of Y on X_2 and Y on X_3 is given below:

$$\hat{Y} = 24.4545 + 0.5091\,X_2$$

$$t = (3.8128)\quad (14.2432)\qquad r^2 = 0.9621$$

$$\hat{Y} = 26.4520 + 0.0480\,X_3$$

$$t = (3.1318)\quad (10.5752)\qquad r^2 = 0.9332$$

What do these regressions reveal?

7.1.c) Regression of X_3 on X_2. is given below:

$$\hat{X}_3 = -3.3636 + 10.3727\,X_2$$

$$t = (-0.0456)\quad (25.2530)\qquad r^2 = 0.9876$$

(8)

What does this regression reveal?

7.1.d) If there is severe collinearity, would you drop one of the X variables? Why or why not?

7.2) (5 marks) In a study of population density as a function of distance from the central business district, Maddala obtained the following regression results based on a sample of 39 census tracts in the Baltimore area in 1970:

$$\ln Y_i = 10.093 - 0.239X_i$$

$$t = (54.7)(-12.28) \qquad R^2 = 0.803$$

$$\frac{\ln Y_i}{\sqrt{X_i}} = 9.932\frac{1}{\sqrt{X_i}} - 0.2258\sqrt{X_i}$$

$$t = (47.87) \qquad (-15.10)$$

where Y = the population density in the census tract and X = the distance in miles from the central business district.

7.2.a) What assumption, if any, is the author making about heteroscedasticity in his data?

7.2.b) How can you tell from the transformed WLS regression that heteroscedasticity, if present, has been removed or reduced?

7.2.c) How would you interpret the regression results? Do they make economic sense?

End

TABLE 1: DURBIN-WATSON d STATISTIC: SIGNIFICANCE POINTS OF d_L AND d_U AT 0.05 LEVEL OF SIGNIFICANCE

	$k' = 1$		$k' = 2$		$k' = 3$		$k' = 4$		$k' = 5$		$k' = 6$	
n	d_L	d_U	d_L	d_U	d_L	d_U	d_L	d_U	d_L	d_U	d_L	d_U
60	1.549	1.616	1.514	1.652	1.480	1.689	1.444	1.727	1.408	1.767	1.372	1.808
65	1.567	1.629	1.536	1.662	1.503	1.696	1.471	1.731	1.438	1.767	1.404	1.805

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IV SEMESTER **BA (H) Economics**

END SEMESTER EXAMINATION ***May/June-2019***

AE 006: Environment, Development and Society

Time: 3:00 Hours ***Max. Marks : 75***

Note : 1. This paper contains 2 sections. Both the sections are compulsory.
2. All questions within each section are to be answered in a continuous manner on the answer sheet.

SECTION A

Attempt any two questions. Each question carries 15 marks.

Q.1 "Multi-purpose projects (dams), launched after independence with their integrated water resources management approach, were thought of as the vehicle that would lead the nation to development and progress, overcoming the handicap of its colonial past." Do you think that large dams have been able to meet their objectives? Give reasons in support of your answer. [15]

Q.2 [a] What are the differences between the ideology of environmentalism and left-wing ideology? [7]

[b] Do you think that the Chipko Movement was not purely an environment conservation movement? Give reasons in support of your answer. [8]

Q.3 "In India we continue to see smaller industrial accidents—mini-Bhopals. Hazardous wastes are piling up in many parts, contaminating land and water and endangering lives."

In the light of this statement, briefly explain the laws that were enacted to prevent industrial disasters. In your view, what additional measures need to be undertaken in order to prevent such accidents? [15]

SECTION B

Attempt any three questions. Each question carries 15 marks.

Q.4 Explain the statement given below. Also, in the light of this statement briefly discuss the alternative methods that are available to improve upon the GDP in order to provide an accurate signal about a country's environmental performance. [15]

"There is a saying in business schools that what gets measured, gets managed. This is bad news for managing our natural capital and the interactions between our economic activity and the environment, which are key to sustainability: these are almost entirely unmeasured and often unmanaged too."

Q.5 [a] What are the key highlights of the Conference of the Parties (COP 21) summit in Paris? What pledges has India made to achieve the Paris Agreement Targets? [10]

[b] Critically evaluate the global implications as well as the implications on India of the US' decision to withdraw from the Paris Agreement. [5]

Q.6 What are the key reasons behind the alarmingly poor air quality in Delhi? What are some of the possible steps that need to be taken in order to improve the situation? [15]

Q.7 Briefly explain the measures that the NITI Aayog has proposed in order to improve the forests and tree cover in the country. [15]

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IV SEMESTER **BA Economics**

END SEMESTER EXAMINATION ***May/June-2019***

AE 008- INTRODUCTION TO INDIAN SOCIETY

Time: 3:00 Hours ***Max. Marks : 75***

Note : 1. Attempt any *five* questions.
2. Each question carry 15 marks.

Q.1- "The system of family has undergone qualitative changes because of Industrialization, urbanization, migration, revolution in the field of transport and communication, increasing influence of the state and the influence of the individualization philosophy of life". In the light of this statement, explain what kind of changes have occurred in the family system in India. What are the difficulties of joint family system? **(15)**

Q.2- Highlight the problems being faced by "working women" in India. What are the current measures taken by government to improve the conditions of women in India? **(15)**

Q.3- Throw light on Manu's description on the eight forms of marriages in ancient India? Describe the main features of Hindu marriages in India. **(15)**

Q.4- Define caste. What are the factors that facilitated the growth of caste system in India? Analyse the impact of caste system on the society. **(15)**

Q.5- Write short note on the following topics: **(15)**

a) Varna and caste.
b) Hindu marriage act
c) Tripple talaq in India

Q.6- How do you conceptualize the idea of indigenous people? Explain it in the context of tribes in North-East India. **(15)**

Q.7- In your opinion, what are the challenges being faced by rural India? Highlight the social and economic developments that took place in rural India in last few decades. **(15)**