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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