

of size 4 each on the production process. Draw Range and mean charts. Is the process in statistical control? (Assume $D_4 = 2.282$, $D_3 = 0$, $A_2 = 0.729$)

Sample	Observation			
	1	2	3	4
1	12.00	11.97	12.10	12.08
2	11.91	11.94	12.10	11.96
3	11.89	12.02	11.97	11.99
4	12.10	12.09	12.05	11.95
5	12.08	11.92	12.12	12.05
6	11.94	11.98	12.06	12.08
7	12.09	12.00	12.00	12.03
8	12.01	12.04	11.99	11.95
9	12.00	11.96	11.97	12.03
10	11.92	11.94	12.09	12.00
11	11.91	11.99	12.05	12.10
12	12.01	12.00	12.06	11.97
13	11.98	11.99	12.06	12.03
14	12.02	12.00	12.05	11.95
15	12.00	12.05	12.01	11.97

Total No. of Pages 4

Roll No.....

II SEMESTER

MBA (Business Analytics)

(Supply)

END SEMESTER EXAMINATION

September-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 Bakery wants to set up production facilities for its three different products – Bread (2 variants), Biscuits (multiple variety) and customised Cakes. What type of production lines should be established for each these products. Giving supporting reasons and characteristics of the suggested line.
- Differentiate between fixed time and fixed order quantity inventory models.
- Briefly discuss five dimensions of service quality.
- Discuss factors that influences the choice of an appropriate forecasting model?

f. Define core competencies. Differentiate between Order Qualifiers and Order Winners characteristics of a product/service

Q2. Long Answer Questions

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

a. PQR produces fertilizer to sell to wholesalers. One raw material – calcium nitrate – is purchased from a nearby supplier at Rs. 2.50 per ton. Zartex estimates it will need 5,750,000 tons of calcium nitrate next year. The annual carrying cost for this material is 40% of the acquisition cost, and the ordering cost is Rs. 595.

- i. What is the most economical order quantity?
- ii. How many orders will be placed per year?
- iii. How much time will elapse between orders

b. Briefly discuss the contributions of quality Guru Juran, elaborating the concept of cost of quality proposed by him.

- c.
- i. What do you mean by facility layout planning?
 - ii. What type of layout is commonly used in services? What are some of the objectives associated with service layouts?
 - iii. Why do work cells increase the use of equipment and machinery?

d. What is the difference between purchasing and procurement? Discuss four important areas a firm should focus on while establishing collaboration/alliance.

Q3. Applications based questions

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

- a.
- i. "Proximity" or closeness implies that a firm should locate "close" to something. What are the basic conditions under which

ii. A clothing chain is considering two different locations for a new retail outlet. They have identified four factors listed in the following table as the basis for evaluation, and have assigned weights as shown on the left. The manager has rated each location on each factor, on a 100-point basis, as shown on the right.

Factor	Factor Description	Weight	Location 1	Location 2
1	Average community income	.40	30	20
2	Community growth potential	.25	40	30
3	Availability of public transportation	.15	20	20
4	Labor cost	.20	10	30

Identify the preferable location for the retailer.

b. Weekly sales of copy paper at Cubicle Suppliers are in the table below. Compute a three-period moving average and a four-period moving average for weeks 5, 6, and 7. Compute MAD for each forecast. Which model is more accurate? Forecast week 8 with the more accurate method.

Week	Sales (cases)
1	17
2	21
3	27
4	31
5	19
6	17
7	21

c. The production manager at Sunny Soda, Inc., is interested in tracking the quality of the company's 12-ounce bottle filling line. The bottles must be filled within the tolerances set for this product because the dietary information on the label shows 12 ounces as the serving size. The design standard for the product calls for a fill level

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