Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MBA – SEMESTER 2 – EXAMINATION – SUMMER 2019

Subject Code: 2820006 Date: 16/05/2019

Subject Name: Production and Operations Management (POM)

Time: 10:30 AM To 05:30 PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q. 1 (a) Multiple Choice Questions: **06**

1 In projects the network analysis is done to:

A. Minimize total duration
B. Minimize total project cost
C. Minimize delays, interruptions and conflict
D. All of the above

2. The technique of relationship diagramming is used for:

A. Product layout
B. Process Layout
C. Block diagraming
D All of the above

3. "The lead Time" concept in Inventory Management means:

A. Float time
B. Extra time given to the production department
C. Time between placing an order and receiving material
D. None of the above

4. The criteria of awarding OHSAS 18001 Certificate is:

A. Healthy and safe Management
B. Quality Management
C. Conservation of the environment
D. Time Management

5. The benefits of Production & Operations Management are for:

A. Manufacturing Organization only
B. Service organizations only
C. Manufacturing and service organizations
D. All the organizations expect service organization

6. The primary consideration while assigning operators to machines is:

A. Most jobs waiting to be processed
B. Jobs with the earliest due date
C. Jobs which have been waiting the longest
D. All of the above

Q.1 (b) Briefly Explain the following terms: **04**

(1) Gantt Chart
(2) Project Crashing
(3) Re-ordering level in Inventory Management
(4) Fixed Position layout

Q.1 (c) Write a short note on "Safety Management" **04**

Q.2 **(a)** Define Production and Operations management and explain function/Activities of Operations **07**

(b) Elaborate location selection factors for choosing a country and for the site within country. **07**

OR

(b) Write a note on: The process & The benefits of Aggregate Production Planning (APP) **07**

Q.3 **(a)** Differentiate between the Production Layout & Process layout **07**

(b) Write a note on: Production planning & control (PPC) **07**

OR

Q.3 **(a)** Explain in detail the advantages and disadvantages related to economies of scale **07**

(b) A manufacturer is offered a component as pre the pricing schedule given below: **07**

(i) 1-199 : $ 70
(ii) 200-449 : $ 64
(iii) >450 : $ 57

- The company uses 1200 such components annually
- The annual carrying cost is $ 18 per unit
- Ordering cost is $ 300

Determine the quantity the firm should order.

Q.4 **(a)** Explain how input transformation output system work for **07**

(i) A Departmental store
(ii) A college

(b) Explain following in detail **07**

(i) Chase Strategy
(ii) Level production strategy

OR

Q.4 **(a)** Elaborate the method of adjusting capacity to meet the demand **07**

(b) Crash the network to the minimum time possible **07**
Calculate the crash time & The Crashing cost.

	Activity time (Week)		Activity Cost (Rs)	
Activity	Normal	Crash	Normal	Crash
1-2	28	20	2000	2480
1-3	25	18	1700	2190
1-4	44	40	2200	2400
2-4	22	18	1500	1820
3-4	18	12	1550	1730

Q.5 **Case Study** **14**

A cabinet manufacturing company is planning to introduce a new model of cabinet which requires the following tasks:

Task	Description	Task time minute
A	Prepare the wheels	10
B	Mount the wheels	5
C	Assemble the sides	15
D	Attach the top	11
E	Attach the base	10
F	Insert the brackets	5
G	Insert the shelves	5
H	Attach the doors	10
I	Attach the back panel	10
J	Paint the unit	15

The wheels are mounted after the are prepared. The base cannot be attached until the sides are assembled and the wheel mounted. The top cannot be attached, nor the brackets insert until the sides are assembled. the shelves are inserted after the brackets are installed. The back panel is attached after the base and top are attached. The doors are attached after the shelves are inserted and the top and base are attached. The unit is painted after the back and door the attached.

a) **Identify the immediate its predecessors of each task and draw the network.**
b) **Find the critical path (s) and list the critical actives.**
c) **Obtain the earliest and latest start completion times of all the activities and their total, free and independent floats**

OR

Q.5 **Case Study** **14**

Jain Brothers' use 10000 seat covers per year. The seat covers are procured from Pavitra Manufacture at a unit price of Rs.50. The inventory carrying cost are estimated at 20 percent and the ordering cost Rs.100 per order. If the lead time for procurement is 14 calendar days, (if both companies operate 6 days in a week,52 weeks in a year) and if the service level is 97.5 per cent

a) **Compute reorder point and EOQ under a Q system.**
b) **Compute target level and reorder cycle under a P system.**
c) **Assume Standard deviation of daily demand at 20 unit**.

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