

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA – SEMESTER – II - EXAMINATION – SUMMER 2022

Subject Code: 4529205

Date: 03/08/2022

Subject Name: Production & Operations Management

Time: 10:30 AM TO 01:30 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)** Explain following terms: **14**
1. SQC
 2. Gantt Chart
 3. Lean Manufacturing
 4. Cellular process
 5. Taguchi method
 6. Critical Path
 7. Job Instruction Training
- Q.2 (a)** Define various types of manufacturing systems. Explain continuous production system with merits and demerits of it. **07**
- (b)** In a factory, there are seven jobs from A to G to perform, each of which should go through two machines M1 and M2. The processing timings (in hours) for the jobs are given here. You are required to determine the optimal sequence for performing the jobs using Johnson's rule. Also find the waiting times of the jobs. **07**

JOB	Machine 1	Machine 2
A	9	2
B	5	4
C	8	10
D	3	5
E	4	6
F	1	11
G	7	6

OR

- (b)** Explain in brief: Bills of Materials, Material Requisition Planning & Production Planning & Control. **07**
- Q.3 (a)** What are the Routing, Dispatching, Prioritization and Expediting? Explain in the context of production function. **07**

- (b) Annual demand of a chemical is 40000 kg. The factory works for 50 weeks for a year. Ordering cost is Rs 800 per order. Price of chemical is Rs 10 per kg. Inventory carrying cost is 10% of price. Find out EOQ.

The company's lead time purchasing is 3 weeks. Company has decided safety stock as 10% of EOQ. Find out safety stock, re-order level, minimum level and maximum level.

OR

- (a) Differentiate between the Product Layout & Process layout 07
 (b) What are dummy activities? Why dummy activities are used in network diagrams of projects? 07

- Q.4 (a) What is Quality? Explain various dimensions of quality 07
 (b) What are the steps, a company should take to prevent accidents during the production process. 07

OR

- (a) Write a note on ISO and its various series. 07
 (b) Find critical path of the following project and estimate EST, EFT, LST, LFT and slack time for different jobs. 07

Job	Preceding job	Estimated time	Job	Preceding job	Estimated time
A	-	10	G	C	8
B	A	9	H	F	8
C	A	7	I	D	4
D	B	6	J	G,H	11
E	B	12	K	E	5
F	C	6	L	I	7

Q.5 Case Study

Escorts Limited

Escorts Ltd. is the country's leading manufacturer of tractors. It sells its tractors through its dealers. Dealers are very important to the company's scheme of doing business. Since dealers are closets to customers, the company takes their inputs when it is making forecasts. Each dealer has a demand planner, and he feeds the demands that he expects to realize for each model for the next month/quarter in his demand planner. He sends this information to his regional office; there are 30 regional offices. At the regional office, the regional sales manager consolidates the demand data of all the dealers lying in his purview and sends them to zonal offices. There are four zonal offices: south, east, north and west. At the zonal office, the zonal sales manager consolidates the demand data of all the regional offices lying in his purview and sends the data to the country sales manager.

The country sales manager consolidates the demand data of all the four zones. The country sales manager and his team study the demand data that they have received from the four zones, and they apply statistical tool to arrive at the final forecast for the month/quarter. They also keep in mind that the demand for tractors is strongly influenced by monsoon. Demand would be high if monsoon is good and vice versa.

Question (a) How does the company make its forecast? Examine critically. **07**

Question (b) What else should it do to make the forecasts more reliable? **07**

OR

Question (a) Is technology enough in making forecast for the tractor? **07**

Question (b) What are the factors that affect the demand of the tractor? **07**

Can we forecast them? **07**
