

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

Subject Code: 4529205**Date: 19/12/2022****Subject Name: Production & Operations Management****Time: 02:30 PM 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 Define following terms: **14**

- (a) Function view of organization.
- (b) Goods and Services.
- (c) Lead Time with example.
- (d) Make to Stock and Make to order.
- (e) Cycle Time and Flow Time.
- (f) Dependent Demand and Independent Demand.
- (g) ERP

Q.2 (a) Shahi Export House has to process five items through three stages of production which are cutting, sewing & pressing. Processing times are given in the following table: **07**

Items	Cutting	Sewing	Pressing
1	3	3	5
2	8	4	8
3	7	2	10
4	5	1	7
5	2	5	6

Determine an order in which these items should be processed so as to minimize the total processing time. What is Elapsed Time? Find out ideal time for each stage.

(b) Discuss the factors to choose location considered by any pharmaceutical industry in detail. **07**

OR

(b) Write short note: (with Advantages and Disadvantages) **07**

1. Product Layout.
2. Fixed Position Layout

Q.3 (a) Define MRP. Explain inputs of MRP system. **07**

(b) Savemart needs 1000 coffee makers per year. The cost of each coffee maker is 78 Rs. Ordering cost is 100 Rs per order. Carrying Cost is 40% of per unit cost. Shop runs for 360 days in a year. **07**

1. What is the optimal order quantity?
2. Find out total no. of order to be place in a year
3. Expected order time between two orders.
4. Total Cost.

OR

- Q.3 (a)** What is Aggregate Production Planning? Discuss the strategies in aggregate planning to manage demand & supply. **07**
- (b)** “Project control should always focus on the critical path”- critically examine the statement. **07**

- Q.4 (a)** Write following short notes: **07**
1. Lean Manufacturing
 2. Six Sigma

- (b)** Sahara Company is in Project industry. Details of the project given below: **07**

Activity	Predecessor	Duration (weeks)
A	----	2
B	A	3
C	B	7
D	B	7
E	B	6
F	C	2
G	E	3
H	D	1
I	H,F	4
J	G,I	2

From above details. Find out;

1. Draw network diagram.
2. Find out ES, LS, EF, LF and slack

OR

- Q.4 (a)** Explain Quality Dimensions for the manufacturing industry in detail. **07**
- (b)** System software Ltd is planning to develop new software. It has identified the activities given in table. Find the expected duration of the project and probability that the project will be completed within 30 days. **07**

Activity	Predecessor	a	m	b
A	----	1	2	3
B	A	3	5	7
C	A	6	10	14
D	A	4	6	8
E	BCD	8	9	10
F	E	2	4	6
G	F	1	3	5

Z	1.10	1.12	1.14	1.16	1.17	1.18	1.19
P	0.36433	0.36864	0.37286	0.37698	0.37900	0.38100	0.38298

PRODUCTIVITY GAINS AT WHIRLPOOL

Workers and management at Whirlpool Appliance's Benton Harbor plant in Michigan have set an example of how to achieve productivity gains, which has benefited not only the company and its stockholders, but also Whirlpool customers, and the workers themselves.

Things weren't always rosy at the plant. Productivity and quality weren't good. Neither were labor-management relations. Workers hid defective parts so management wouldn't find them, and when machines broke down, workers would simply sit down until sooner or later someone came to fix it. All that changed in the late 1980s. Faced with the possibility that the plant would be shut down, management and labor worked together to find a way to keep the plant open. The way was to increase productivity-producing more without using more resources. Interestingly, the improvement in productivity didn't come by spending money on fancy machines. Rather, it was accomplished by placing more emphasis on quality. That was a shift from the old way, which emphasized volume, often at the expense of quality. To motivate workers, the company agreed to gain sharing, a plan that rewarded workers by increasing their pay for productivity increases.

The company overhauled the manufacturing process, and taught its workers how to improve quality. As quality improved, productivity went up because more of the output was good, and costs went down because of fewer defective parts that had to be scrapped or reworked. Costs of inventory also decreased, because fewer spare parts were needed to replace defective output, both at the factory and for warranty repairs. And workers have been able to see the connection between their efforts to improve quality and productivity.

Not only was Whirlpool able to use the productivity gains to increase workers' pay, it was also able to hold that lid on price increases and to funnel some of the savings into rese

- (a) What were the two key things that Whirlpool management did to achieve productivity gains? 07
- (b) Explain how different stakeholders achieve from productivity gain? 07

OR

- Q.5 (a) How are productivity and quality related? 07
- (b) To pay worker more for productivity gain is right decision or not. Give your views 07
