Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA – SEMESTER (02) – • EXAMINATION – WINTER 2016

Subject Code: 2820006 **Date: 25/10/2016**
Subject Name: Production and Operations Management (POM)
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) **Objective Questions** **06**

1. Process of designing products with less variability is known as

A.	Concurrent Engineering	B.	Robust Design
C.	Standardization	D.	Computer aided design

2. Maximum output rate achieved under all the constraint in manufacturing is known as

A.	Effective capacity	B.	Designed Capacity
C.	Actual Capacity	D	All of the above

3. Slack of an event in project management is

A.	Latest occurrence time of event- Earliest Occurrence time of event	B.	Earliest occurrence time of event- Latest Occurrence time of event
C.	Latest occurrence time of event- (Earliest Occurrence time of event + Float)	D.	None of the above

4. Stock of inventory stored to meet an inventory cycle determined by an inventory model is known as

A.	Cycle stock	B.	Buffer stock
C.	Anticipation inventory	D.	All of the above

5. Consumption value CV is

A.	CV = Unit Price of item x number of units consumed	B.	CV = Unit Price of item x Cycle stock
C.	CV = Unit Price of item x safety stock	D.	None of the above

6. To measure the production process capability with customer specification , what is being used ?

A.	Inventory ratio	B.	Process Capability ratio
C.	Profitability ratio	D.	Current liabilities.

Q.1 (b) Define following **04**

(1) Optimistic time with respect to project management
(2) Most likely time with respect to project management
(3) Lead time in inventory management
(4) Early start and Early Finish time

Q.1 (c) Differentiate between Fixed – Position layout Vs. Cellular layout and group technology **04**

Q.2 (a) Describe a problems can occur to the business house , due to improper facility location planning. **07**

(b) What are control charts? Explain X Bar chart and R chart with necessary formulas and example. How it is useful for manufacturing process? **07**

OR

(b) Write a note on Total quality management tools (TQM tools) with suitable examples. **07**

Q.3 **(a)** Write a note on process layout , explain the layouts with suitable examples **07**

(b) For following activities in a project management, Draw network diagram find out critical path , early start and early finish points. **07**

Task	Time (Days)	Predecessors
A	2	-
B	3	-
C	4	-
D	1	A
E	2	B
F	5	B
G	7	C
H	2	D,E
I	3	F,G
J	1	H,I

OR

Q.3 **(a)** Write a note on Program evaluation and Review technique and role of Beta curve in the same. **07**

(b) Legend bikes limited resources 6000 side mirrors for it's bikes from an outside suppliers. The operating cost is Rs. 10/- per order and CC is Rs. 6 per unit per year. The company has a 300 working days cycle per year. Find out following **07**

(a) EOQ, (b) Number of orders per year (c) Total inventory cost (d) Number of inventory cycles in a year.

Q.4 **(a)** Explain inventory cycle, EOQ (Economic Order Quantity) and EOQ with safety stock considerations. **07**

(b) Write a note on Just In time method of inventory management and also explain merits and demerits of the same. Write a note about the situations where just in time method may not be suitable to adopt. **07**

OR

Q.4 **(a)** Write a note on operations strategies for multiple facilities. **07**

(b) Write a differentiating note between Kaizen and Kanban Visiual systems with suitable examples with respect to manufacturing process. **07**

Q.5 A leading car manufacturing company decided to have their new manufacturing plant at West Bengal state of India with an intention of manufacturing the lowest cost car , making it affordable for everyone . Project execution team of the company started setting up manufacturing facilities on war footing basis and almost after 50% work was done and 60% time was consumed, due to the political and legal environment of the business , Car company had to stop the execution of the project. **14**

After loosing few more weeks as a part of conflict resolution mechanism , both the government officials and company authorities came to the conclusion that project will not be able to take shape at this state and will not get executed further on that land.

After loosing sizable time and resources, company decided to shift the manufacturing facility to another state (Gujarat). After doing so, the major challenge company's board of director were facing that of , having production

started on planned date as it was earlier and to do so , how to expedite project of setting up manufacturing process .

The other major challenge was, as sizable resources (capital mainly) were lost the process, Producing the car at the lowest cost was another major challenge they were facing.

Third and important challenge for the company officials was to maintain the consistency in quality – in spite of expediting manufacturing plant execution process and dropping the cost at every stage.

Keeping the three challenges in the mind answer the following questions.

(1) How project management concept will help in addressing the problem of execution of the plant in a very short span of time?
(2) How inventory management tools will help in dropping the cost?
(3) Which quality tools the company will have to ensure the consistent quality to have required quality product at lower cost?

OR

Q.5 Flag bearings has been indenting 20,000 bearings rollers every year form the supplier, Rotomac rollers. The OC is Rs. 100 and CC is Rs.1 per unit per year. The price of roller is Rs.5.0 and supplier offers a 5% discount if the purchases are made in a lots of 10,000 rollers or more. Determine whether a discount model is more preferable or EOQ model? **14**

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