

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA – SEMESTER II– • EXAMINATION – SUMMER 2015

Subject Code: 2820006

Date: 01/06/2015

Subject Name: Production and Operations Management (PO&QM)

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.

06

Q.1 Material handling problems are largely due to

(a)

1. A. Poorly trained workers
B. improper selection of the material handling equipment
C. problems of poorly designed plant layout
D. None of the above
2. SDE Analysis is based on
A. problems of procurement
B. Nature of supplier
C. Value of stock of items in hand
D. None of the above
3. Which of the following aggregate planning strategies is likely to have the least impact on quality?
A. Using part-time workers
B. Changing inventory level
C. Sub-contracting
D. Varying production rates through overtime or idle time
4. The person who introduced standardized, interchangeable parts was
A. Adam Smith
B. Eli Whitney
C. Henry Ford
D. W. Edwards Deming
5. For low volume, high variety products, the manufacturing method is known as
A. continuous production
B. Batch Production
C. Repetitive Production
D. Product focused
6. Industrial locational analysis typically has a
A. Cost focus
B. revenue focus
C. labor focus
D. environmental focus

- Q.1 (b)** Write Definitions for following terms **04**
1. Just in time (JIT)
 2. ISO 9000
 3. Acceptance sampling
 4. Kaizen
- Q.1 (c)** What do you understand by Push vs. Pull systems **04**

- Q.2 (a)** How does intermittent manufacturing differ from continuous manufacturing? **07**
- (b)** Suppose you are working as a turnkey project consultant. One of your clients wants guidance in selecting facility location for his new fast-food restaurant. Guide your client. **07**

OR

- (b)** Potential locations A, B and C have the cost structures shown for producing a product expected to sell at Rs. 100 per unit. Find the most economical location for an expected volume of 2000 units/year **07**

Location	Fixed cost per year (Rs.)	Variable cost per unit (Rs.)
A	25,000	50
B	50,000	25
C	80,000	15

- Q.3 (a)** Define quality, quality management and discuss dimensions of quality **07**
- (b)** From the following information **07**
1. Draw Critical Path Diagram
 2. Calculate EST, LST, EFT, LFT and Slack time

Activity	Predecessor	Time
A	-	1
B	A	4
C	A	3
D	A	7
E	B	6
F	CD	2
G	EF	7
H	D	9
I	GH	6

OR

- Q.3 (a)** Explain six sigma process of Japanese manufacturing **07**

(b) The following information is available about a project

07

Activity	Normal time (weeks)	Crash time (weeks)	Normal cost (Rs.)	Crash cost (Rs.)
1-2	6	4	10,000	14,000
1-3	4	3	5,000	8,000
2-4	3	2	4,000	5,000
3-5	8	6	9,000	12,000
4-5	7	4	7,000	8,000

Draw network and identify critical path. Can we reduce the project completion time to 10 weeks?

Q.4 (a) Write a note on Industrial safety & safety management

07

(b) The following is a schedule showing operation time for four jobs (A,B,C and D) on two machines (M-1 and M-2)

07

Jobs	Operation time on M-1	Operation time on M-2
A	3	2
B	6	8
C	5	6
D	7	4

Assign four jobs on two machines by using Johnson's rule so as to minimize the total flow time

OR

Q.4 (a) Explain in detail elements of production planning and control

07

(b) Samples each of 250 radios are inspected for 12 days. The number of defective radios found in different samples are given below. Prepare np-chart and state your conclusion.

07

Date	No. of defective items
1	25
2	47
3	23
4	30
5	24
6	34
7	39
8	32
9	35
10	22
11	45
12	40

Q.5 A factory annually uses 24,000 units of raw material which costs Rs.1.25 per unit. Placing each order costs Rs.25 and carrying cost is 6% of average inventory. The management is interested in –

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- a. Finding the economic ordering quantity and total inventory cost including the cost of material
- b. The factory works for 320 days a year. If the procurement time is 10 days and safety stock is 450 units find the reorder point, the minimum, maximum and average inventory levels

Kindly guide the management for the same.

OR

Q.5

Radhe Corporation buys 80,000 shipping containers per year. Price of each container is Rs. 0.40. Ordering cost is Rs. 80 per order. Cost of holding one container for one year is Rs. 0.10. Bank rate of interest is 15% including charge of insurance and taxes. Management is faced with below mentioned problems: Find

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- a. EOQ and time period between two orders based on 220 working days in a year.
- b. The minimum variable cost per year
- c. If company had been following policy of quarterly ordering, what would have been the increase in the variable cost

Kindly guide the management in finding above problems
