## **GUJARAT TECHNOLOGICAL UNIVERSITY** MBA (TM) - SEMESTER -(X) EXAMINATION - SUMMER 2016

## Subject Code: 4210102 **Subject Name: Production Management** Time: 10.30am to 01.30pm

**Total Marks: 70** 

Date: 11-05-2016

**Instructions:** 

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- 0.1 (a) What is Process Design? Discuss the difference between intermittent and 07 continuous process.
  - What do you mean by operations management? Discuss the nature and scope of **(b)** 07 operations management.
- 07 0.2 An army division has five troop encampments in the desert and the division (a) leaders want to determine the best location for a supply depot to serve the camps. The (x,y) coordinates (in KM) of the camps, A, B, C, D & E and the daily amount of supplies (in kg) required at each camp are as follows:

	coordinates		
City	Х	Y	Daily load (kg)
А	110	120	95
В	70	290	110
С	455	350	140
D	300	450	60
E	280	575	95

Determine the best site using the center of gravity technique.

- (b) Distinguish between a process and a product layout. Given an example of each. OR
  - (b) What is material handling? Explain different principles of material handling. 07
- What is Six Sigma? Explain the six sigma process of Japanese manufacturing. 07 Q.3 **(a)** 
  - A manufacturing firm has been offered a particular component part it uses 07 **(b)** according to the following discount pricing schedule provided by the supplier.

Quantity	Price
1 – 199	Rs. 65
200 - 599	Rs. 59
600+	Rs. 56

The manufacturing company uses 700 of the components annually, the annual carrying cost is Rs 14 per unit, and the ordering cost is Rs. 275. Determine the amount the firm should order.

## OR

What do you mean by capacity? Explain different strategies for adjusting 07 0.3 **(a)** capacity.

07

- (b) A company is having processing quota of 60 items per 6 hours a day. Using the 07 following details, calculate the following:
  - i. Desired cycle time
  - ii. Number of work stations
  - Balance the line iii.

Balance the line				
Element	Precedence	Performance time (Minutes		
А	-	4		
В	А	6		
С	В	3		
D	А	2		
E	C,D	3		
F	E	6		

- **Q.4** Write a brief note on Economic order quantity. Explain dependent demand and (a) 07 independent demand with example.
  - Consider the data pertaining to purchase of a component as given below for a 07 **(b)** small manufacturing organization:
    - Annual demand 1200 units
    - Cost of ordering Rs 15 per order
    - Cost of holding inventory Rs 2.5 per unit per year
    - Price Rs. 25 per unit
    - Average working days in a year 365
    - Lead time 7 days

Calculate i) EOQ, (ii) Reorder point, (iii) total annual cost associated with inventory.

## OR

- **O.4** Write a brief note on industrial safety. **(a)** 
  - **(b)** Apollo healthcare operates three hospitals and a number of clinics in its 07 citywide network. It is planning to open a new wellness center and clinic facility that focuses on clients in one of four suburbs. The following table shows the weighted criteria for each location.

		Score (0 to 100)			
Factors	Weight	Waghodia	Ajwa	Por	Tarsali
Elderly Population	0.55	75	80	65	75
Income Level	0.15	65	75	90	85
Land	0.10	90	70	90	80
Average age	0.10	80	70	80	75
Transportation	0.05	95	55	75	95
Crime rate	0.05	95	70	85	90

07

07

- Q.5 What do you mean by JIT? Explain the concept and discuss its importance. **(a)** What is Product Layout? Explain Line balancing in detail with the steps of 07 **(b)** solving line balancing problem.
  - OR
- Q.5 Plant location is very important activity for an organization. Explain the factors 07 **(a)** you will consider before setting up a plant of leather goods manufacturing unit.

(b) A department store is opening a new store in the mall. Customer movement 07 tracked in its existing stores is shown below. Design a layout for the new store on a 2 X 3 grid that will minimize nonadjacent customer movement.

	Number of customers					
From/To	1. women's	2. men's	3. boy's	4. girl's	5. infants	6. others
1. Women's	-	20	55	50	50	30
2. Men's		-	35	10		20
3. Boy's		40	-	15		
4. Girl's	30		50	-	30	10
5. Infants	35				-	
6. Others	40					-

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