| Seat No.: | Enrolment No |
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## GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII • EXAMINATION - WINTER • 2014

Subject Code: 171501 Date: 25-11-2014

**Subject Name: Operations Planning and Control** 

Time: 10:30 am - 01:00 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) Classify Sales forecasting techniques. Discuss forecasting for a new product being 07 Launched, with an example.
  - (b) Demand pattern for recharge vouchers of Rs. 100 in a Mobile vending shop for first **07** 10 months of an year is as follows. Work out the demand for November & December.

| Jan | Feb | Mar | Apr | May | June | July | Aug | Sep | Oct |
|-----|-----|-----|-----|-----|------|------|-----|-----|-----|
| 60  | 200 | 190 | 160 | 320 | 230  | 280  | 400 | 390 | 450 |

Q.2 (a) Define OPC function in an organization. Discuss different phases of PPC.

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(b) Discuss how PPC function is carried out in Job Production, Batch Production and **07** Continuous production.

## OR

- (b) Discuss and differentiate associative techniques of Regression analysis and 07 Correlation analysis.
- Q.3 (a) Discuss Master Production Scheduling. Take an example of Chase-sales technique. 07
  - **(b)** Discuss Route sheet preparation with an example.

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## Or

- **Q.3** (a) what are the conditions under which you apply Johnson's rule for finding Optimal **07** Sequence of operations?
  - (b) Find the optimal sequence and total elapsed time for the following Job-Machine **07** Combination.

## Processing times in Hrs.

| Job   | 1  | 2  | 3  | 4  | 5  | 6  |
|-------|----|----|----|----|----|----|
| M/C A | 25 | 21 | 22 | 21 | 23 | 24 |
| M/C B | 19 | 17 | 16 | 18 | 10 | 17 |
| M/C C | 33 | 32 | 34 | 33 | 31 | 35 |

Q.4 (a) Discuss MRP. Give inputs of MRP. Discuss BOM files in detail.

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(b) Discuss capacity planning for a heat treatment plant.

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- Q.4 (a) What are pure strategies for aggregate planning? Why normally a mixed strategy is **07** Preferred?
- **Q.4 (b)** the demand for an item in 2013 were as follows:

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| Months        | Jan-<br>Feb | Mar-<br>Apr | May-<br>June | July/Aug | Sep/Oct | Nov/Dec |
|---------------|-------------|-------------|--------------|----------|---------|---------|
| Bi-<br>mothly | 870         | 256         | 350          | 450      | 600     | 700     |

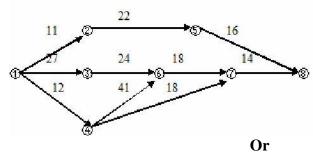
| demand |  |  |  |
|--------|--|--|--|

Considering that the company has sufficient man power to meet the demand in Jan-Feb, Hiring cost Rs. 7500/person, Firing Rs. 5000/Person, Inventory carrying cost Rs. 500/Unit, work out appropriate strategy for the Aggregate plan.

Q.5 (a) Discuss Line balancing and the Heuristic approach to a LB problem.

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**(b)** Below given is the network diagram for an assembly line. Determine assignments to **07** work station to provide min. possible cycle time. Also determine line efficiency.



Q.5 (a) Discuss index method of scheduling.

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(b) Discuss Break EvenAnalysis..

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