

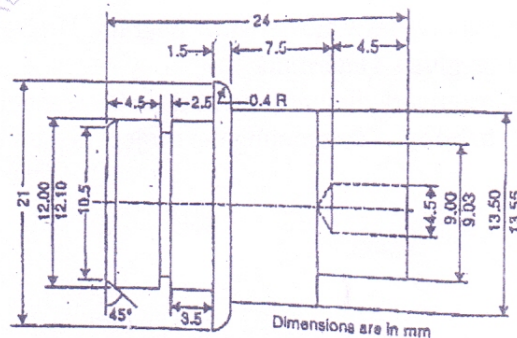
QP Code : 5979

(3 Hours)

[Total Marks : 80

- N.B. : (1) Question No. 1 is compulsory
(2) Solve any three out of remaining five questions
(3) Figures to the right of the question indicate full marks.
(4) Assume the suitable data wherever necessary.

1. Answer any four 20
- (i) What are the different types of production?
 - (ii) Discuss the prerequisites of PPC.
 - (iii) Mention the reasons for storing the inventory.
 - (iv) What problems are faced in case of lack of product planning?
 - (v) What are the assumptions of job sequencing
2. (a) What are the functions of PPC. 10
(b) What is Work Order? How is it prepared in different manufacturing units. 10
3. (a) A materials manager adopts the policy to place an order for a minimum quantity of 500 of a particular item in order to avail discount of 10%. It was found from the company records that for last year 8 orders were placed of size 200 nos. ordering cost is Rs. 500 per order Inventory carrying cost charges at 40%. cost per unit = 400 Rs. 10
- (i) Is the decision of manager Justified
 - (ii) What is the effect of this decision on company.
- (b) Write short notes on any two : 10
- (i) Two Bin system
 - (ii) MRPI & MRP - II
 - (iii) Just in Time manufacturing system.
4. (a) Prepare the process sheet for the given component. 10



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- (b) Demand (In thousands) for bearings of a company is given below. Forecast for the year 2009 was 75 Units. 10

| Year | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|--------|------|------|------|------|------|------|------|
| Demand | 77 | 88 | 94 | 85 | 91 | 98 | 90 |

- (i) Estimate the sales forecast for 2016 with least square method.
 (ii) Obtain the forecast of demand for the year 2016 by exponential smoothening method with $\alpha = 0.5$ and compare with earlier forecast.

5. (a) Solve the following LPP 10

Maximize $Z = 3X_1 + 2X_2 + X_3$
 Subject to

$$X_1 + 2X_2 + X_3 \leq 430$$

$$3X_1 + 2X_3 \leq 460$$

$$X_1 + 4X_2 \leq 420$$

$$X_1 + X_2, X_3 \geq 0$$

- (b) What are the principle functions of Dispatching? What are the documents generally prepared while performing dispatching function? 10

- 6 (a) There Are five jobs, each of which is to be processed through three machines A, B, C in the order ABC Processing time in hours are 10

| JOBS | A | B | C |
|------|---|---|----|
| 1 | 3 | 4 | 7 |
| 2 | 8 | 5 | 9 |
| 3 | 7 | 1 | 5 |
| 4 | 5 | 2 | 6 |
| 5 | 4 | 3 | 10 |

Determine the optimum sequence for the five jobs and the minimum elapsed time. Also calculate the waiting time for three machines.

- (b) For the activities given below draw the network diagram. Time estimates (in days) for each activity are also given. Determine 10
- (i) Draw the network diagram and find the project duration.
 (ii) The probability of completing the project in 32 days.

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| Activity | Optimistic Time | Most Likely Time | Pessimistic Time |
|----------|-----------------|------------------|------------------|
| 1-2 | 6 | 9 | 18 |
| 1-3 | 5 | 8 | 17 |
| 2-4 | 4 | 7 | 22 |
| 3-4 | 4 | 7 | 16 |
| 4-5 | 4 | 10 | 22 |
| 2-5 | 4 | 7 | 10 |
| 3-5 | 2 | 5 | 8 |
