

Seat No.	
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T.E (Electronics and Telecommunication) (Part - III)
(Semester - VI) Examination, May - 2017
INDUSTRIAL MANAGEMENT (Revised) (New)

Sub. Code : 66920

Day and Date : Saturday, 06 - 05 - 2017

Total Marks : 100

Time : 02.00 p.m. to 05.00 p.m.

- Instructions:**
- 1) *All questions are compulsory.*
 - 2) *Figures to the right indicate full marks.*
 - 3) *Assume suitable data, if necessary.*

Q1) Attempt any two of the following

- a) Comment on "Management is no longer exclusive to business but common to all kinds of organized activity." [8]
- b) Discuss Herzberg's theory of motivation. How does it differ from Maslow's theory of motivation? [8]
- c) What are the common barriers to communications? How can these be overcome? [8]

Q2) Attempt any two of the following

- a) Discuss the purchasing procedure. Do you think all the steps in the procedure should be followed strictly every time an item is purchased? [8]
- b) State and explain five R of purchasing [8]
- c) Explain in brief ABC analysis for inventory control [8]

Q3) Write Short notes on the following (any Three)

- a) Procedure of cost estimation [6]
- b) Qualities of entrepreneur [6]
- c) Difference Government Schemes for SSI [6]
- d) Business ethics [6]

P.T.O.

Q4) Attempt any three of the following [6]

- a) State areas of applications of operations research and suggest suitable model for the same.

- b) Solve the following LPP using Graphical Method, [6]

$$\text{Maximize } Z = 80x_1 + 120x_2$$

subjected to constraints,

$$x_1 + x_2 \leq 18,$$

$$x_1 \geq 4$$

$$x_2 \geq 6$$

$$20x_1 + 50x_2 \leq 720$$

$$x_1, x_2 \geq 0$$

- c) A company manufactures two products, X and Y by using three machines A, B, and C. Machine A has 8 hours of capacity available during the coming week. Similarly, the available capacity of machines B and C during the coming week is 20 hours and 30 hours respectively. One unit of product X requires one hour of Machine A, 2 hours of machine B and 9 hours of machine C. Similarly one unit of product Y requires 2 hour, 7 hour and 6 hours of machine A, B and C respectively. When one unit of X is sold in the market, it yields a profit of Rs. 50/- per product and that of Y is Rs. 70/- per unit. Formulate LPP for optimal product mix. [6]

- d) Use simplex method to solve the following [6]

$$\text{Maximise } Z = 46 x_1 + 64 x_2$$

subjected to constraints,

$$20 x_1 + 12 x_2 \leq 5000$$

$$10 x_1 + 20 x_2 \leq 4000$$

$$2 x_1 + 4 x_2 \leq 1000$$

$$x_1, x_2 \geq 0$$

Q5) Attempt any two of the following

[8]

- a) What do you mean by balancing an assignment problem? Explain steps you take to solve maximization case in assignment problem.
- b) A Computer center has got three expert programmers. The center needs three application programmes to be developed. The head of the computer center, after studying carefully the programmes to be developed estimate the computer time in minutes required by the experts to the application programmes as given in the matrix below. Assign the programmers to the programmes in such a way that the total computer time is least. Also Comment on effect of assignment
- [8]
- i) if there are 4 Programmers keeping other conditions are same
- ii) if there are 4 Programmes keeping other conditions are same

Programmers	Programme		
	A	B	C
1	120	100	80
2	70	90	110
3	110	140	120

- c) From three warehouses, A, B, and C orders for certain commodities are to be supplied to demand points X, Y and Z. Find Initial Basic Feasible Solution using the following method
- [8]
- i) Northwest corner method
- ii) Leastcost method
- iii) Vogels Approximation method

Transportation cost in Rs. per unit

		To			Supply
		X	Y	Z	
From	A	10	20	4	200
	B	6	14	10	50
	C	12	16	8	150
Demand		210	60	180	

Q6) Attempt the following

- a) Explain in brief rules for construction of Network Diagram [6]
- b) A small project is composed of 7 activities whose time estimates are listed below. Activities are being identified by their beginning (i) and ending (j) node numbers. [10]
- Draw the network
 - Find the expected project completed time
 - If the project due date is 18 weeks, what is the probability of not meeting the due date?

Activities	From	To	Time in Weeks		
			t_o	t_m	t_p
	1	2	1	1	7
	1	3	1	4	7
	1	4	2	2	8
	2	5	1	1	1
	3	5	2	5	14
	4	6	2	5	8
	5	6	3	6	15

