T.E. (Electronics & Telecommunication) (Semester -VI) Examination, May - 2015

INDUSTRIAL MANAGEMENT & OPERATION RESEARCH

Sub. Code: 45696

Day and Date : Friday, 15 - 05 - 2015

Time : 2.30 p.m. to 5.30 p.m.

Total Marks : 100

Instructions :   1)   **Attempt any three questions from each section.**

2)   **Figures to right indicate full marks.**

SECTION - I

Q1) a)   Explain different types of control techniques.   [8]

b)   What is the importance of staffing. Explain the commonly used staffing procedure.   [8]

Q2) a)   Define budget and budgeting control. How will you use this for evaluating a performance of departments an organisation.   [8]

b)   Describe the importance of purchasing. Write a brief note on purchase procedure.   [8]

Q3) a)   Describe the procedure to start S.S.I.   [8]

b)   List out various qualities required to become successful entrepreneur and its importance now-a-days.   [8]

Q4) Write note on any three: [3×6=18]

  a) Marketing mix.

  b) analysis of various costs.

  c) Leadership styles.

  d) Importance of communication.

  e) ABC analysis.

SECTION - II

Q5) a) A project has the following characteristics. [12]

Activity	Preceding activity	Expected completion time (weeks)
A	None	5
B	A	2
C	A	6
D	B	12
E	D	10
F	D	9
G	D	5
H	B	9
I	C,E	1
J	G	2
K	F,I,J	3
L	K	9
M	H,G	7
N	M	8

i)   Draw a PERT network,

ii) Find critical path and project completion time,

iii) Will the critical path change if activity G takes 10 weeks instead of 5 weeks. If so what will be the new critical path.

b) Explain how beta distribution is suitable for PERT analysis. Explain how do you determine the expected time.   **[5]**

Q6) a) Solve the following LPP by simplex method.

Maximize, $Z = 6x + 8y$ Subject to $5x + 10y \leq 60$, $4x + 4y \leq 40$, $x,y \geq 0$ **[8]**

b) Solve the following LPP by graphical method:

Maximize $Z = 5x + 4y$ Subject to $2x + y \leq 110$, $x + 2y \geq 80$, $x,y \geq 0$. **[9]**

Q7) a) Solve following unbalanced assignment problem. There are four machines W, X, Y, Z, three jobs A, B, C are to be assigned to the 3 machines out of total 4 machines. The cost of assignment is given below. Find out the optimal assignment.   **[8]**

	W	X	Y	Z
A	18	24	28	32
B	8	13	17	18
C	10	15	19	22

And Test optimality

Industrial Management & Operational Research.

b) Define Operational research. Explain it's methodology and characteristics.   **[8]**

Q8) a) Differentiate between PERT and CPM. Define Earliest start, Earliest finish, latest start and latest finish time. [9]

b) Find the initial feasible solution to the following transportation problem by vogel's approximation method. [8]

From		To			Capacity
		X	Y	Z	
	I	1	2	3	50
	II	3	2	1	80
	III	4	5	6	75
	IV	3	1	2	95
		120	80	100	

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