

**R13**

Code No: 117EG

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B.Tech IV Year I Semester Examinations, November/December - 2016**

**MANAGEMENT SCIENCE**

**(Common to ECE, MMT)**

**Time: 3 Hours**

**Max.Marks:75**

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART- A**

**(25 Marks)**

- 1.a) Why are the management principles important for the success of any business organization? [2]
- b) State any one principle of Taylor's Scientific Management theory and give suitable example. [3]
- c) Give one example each for the adoption of job, batch and mass production methods. [2]
- d) Describe the necessity of acceptance sampling. [3]
- e) Name the various levels in a Capability Maturity Model (CMM). [2]
- f) What are the important steps in manpower planning of a business organization? [3]
- g) Define Float, Free Float and Total Float for a project activity. [2]
- h) What are the requirements for selecting which activity to crash in any project? [3]
- i) What is Bench Marking and how does an organization derive benefit from such initiatives? [2]
- j) Why is environmental scanning important in strategy development? [3]

**PART-B**

**(50 Marks)**

- 2.a) Compare and contrast, with suitable examples, departmentation and decentralization in a business organization.
- b) According to Herzberg, what are the two types of factors that influence motivation in any organization? [5+5]

**OR**

- 3.a) Explain, with suitable diagram and examples, Abraham Maslow's Hierarchy of Needs in a business organization.
- b) Compare and contrast mechanistic and organic structures of an organization. [5+5]

- 4.a) What are the various types of plant layouts? Explain with suitable examples and diagrams.
- b) It was found out after an exercise involving customers and employees that a critical dimension of the service quality of a call center is the wait time of a caller to get to a sales representative. Periodically, random samples of three customer calls are measured for time. The results of the last four samples are in the following table:

Sample	Time (Sec)		
	1	495	501
2	512	508	504
3	505	497	501
4	496	503	492

Assuming that management is willing to use three sigma control limits, and using only the historical information contained in the four samples and the value of the constants given in the table below, check whether the call center access time is in statistical control or not. (Use  $\bar{x}$ -bar & R chart) [3+7]

X-bar Chart Constants      for sigma estimate      R Chart Constants      S Chart Constants

Sample Size = m	A <sub>2</sub>	A <sub>3</sub>	d <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	B <sub>3</sub>	B <sub>4</sub>
2	1.880	2.659	1.128	0	3.267	0	3.267
3	1.023	1.954	1.693	0	2.574	0	2.568
4	0.729	1.628	2.059	0	2.282	0	2.266
5	0.577	1.427	2.326	0	2.114	0	2.089
6	0.483	1.287	2.534	0	2.004	0.030	1.970
7	0.419	1.182	2.704	0.076	1.924	0.118	1.882

OR

- 5.a) What are the assumptions in a basic EOQ model of inventory management.
- b) A company makes bicycles. It produces 450 bicycles a month and works 12 months a year. It buys the tires for bicycles from a supplier at a cost of \$20 per tire. The company's inventory carrying cost is estimated to be 15% of cost and the ordering is \$50 per order (irrespective of the order size). Calculate the EOQ, number of orders in a year, total annual ordering cost, inventory carrying cost and total cost of this inventory policy. [3+7]
- 6.a) What are the essential differences between human resource management (HRM) and personnel management & industrial relations (PM & IR).
- b) Why manpower planning is important for any organization? What are the factor the influence man power planning? [3+7]

OR

- 7.a) What do you understand by a performance appraisal system? What are the objectives of a good performance appraisal system?
- b) What do you understand by employee grievances in an organization? What are the benefits of an effective grievance handling system? [4+6]



8.a) Compare and contrast between CPM and PERT, in the context of project management.

b) Draw the suitable network diagram and identify the critical path. What is the duration of the project that will have 50% chance of completion? [4+6]

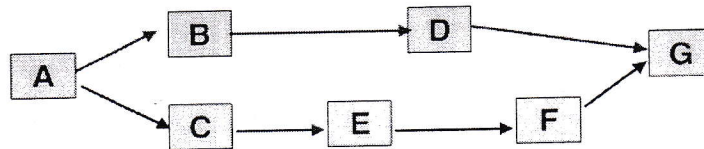
Activity	Immediate Predecessor	Optimistic (a) time	Most Likely (m) time	Pessimistic(b) time
A	—	1 week	2 weeks	3 weeks
B	—	2	3	4
C	A	1	2	3
D	B	2	4	6
E	C	1	4	7
F	C	1	2	9
G	D,E	3	4	11
H	F,G	1	2	3

OR

9.a) What are the rules to be satisfied for the identification of critical path?

b) You are given the following data about the project tasks, network, and crash times/costs. Calculate the cost of the project at all time durations until you can no longer crash the project any further. Incentives of \$500 perday beyond initial duration will be available. [4+6]

ID	Direct costs			
	Normal		Crash	
	Time	Cost	Time	Cost
A	5	\$500	4	\$600
B	10	\$1200	6	\$2000
C	13	\$3600	11	\$4800
D	13	\$300	11	\$600
E	5	\$1000	4	\$1400
F	10	\$2400	8	\$5400
G	5	\$700	5	\$700
		\$9700		



10.a) Perform a SWOT analysis for Indian Railways. Explain your logic briefly.

b) What are the various generic strategy alternatives available to any business organization? Explain with suitable examples. [5+5]

OR

11.a) What is Corporate Strategy Planning Process? Why is this important for long term success of any business organization?

b) What are the various steps in any successful benchmarking process? Explain giving relevant examples. [5+5]