Paper 9- Operation Management and Information Systems

Paper 9- Operation Management and Information Systems

Full Marks : 100 **Time allowed: 3 hours**

Section – A

I. Answer the following question which is compulsory:

1. Answer any five of the following questions: **[5×2=10]**

(a) Write the advantages of vertical Integration?
(b) What is demonstrated capacity?
(c) Define efficiency.
(d) What is P-D-C-A cycle?
(e) Define qualified worker.
(f) What are tangible and intangible benefits of ERP?
(g) Define data Mart.
(h) What is closed system?

2. Matching the following: **[5x1=5]**

List A	List B
A. Linear Programming	(i) Product design
B. Computer Aided Designing	(ii) Production control
C. Work in process	(iii) Authentication of electronic record
D. Debugging	(iv) Product mix determination
E. Digital signature	(v) Syntax error

3. Statement whether the following statements are True/False: **[5]**

(a) C++ is a programming language.
(b) EIS helps top level management is solving unstructured problems.
(c) E-commerce as started a new revolution that is changing the way business houses buy and sell products and services.
(d) Increase in production is increase in profit.
(e) Critical path is the shortest path from the beginning of the project to ending of the project.

4. Fill in the blanks: **[1x5=5]**

(a) Ergonomics is another name for _____
(b) Design capacity > _____ > demonstrated capacity.
(c) _____ Japanese word, which means change for better.
(d) Key pair means a private key and its mathematically related _____ key.
(e) _____ is physical replica of the system based on different scale from original.

Section – B

II. Answer any three questions from the following: **[15x3=45]**

1. (a) The demand for three months for 100 Watt bulbs is given below:

Period	January	February	March
Demand	500	600	800

If the weight assigned to the period of January, February and March are 0.25, 0.35 and 0.4 respectively, forecast the demand for the months of April by using Weighted Moving Average method. **[7]**

(b) A company is planning to undertake the production of medical testing equipments has to decide on the location of the plant. Three locations are being considered, namely, A, B and C. The fixed costs of costs are ₹3000, ₹ 2000 and ₹ 3500 per unit respectively. The average sales price of the equipment is ₹ 7000 per unit.
Find:
(i) The range of annual production/sales volume for which each location is most suitable.
(ii) Select the best location, if the sales volume is of 18,000 units.
Find B E P at A,B and C. **[8]**

2. (a)A project consists of six activities. Activities P, Q,R run simultaneously. The relationships among the various activities is as follows:

Activity	Immediate Successor
P	S
Q	T
R	U

Activity T is the last operation of the project and it is also immediate successor to R and S. Draw the network of the project. **[5]**

(b) Six salesmen are to be allocated to six sales regions so that the cost of allocation of the job will be minimum. Each salesman is capable of doing the job at different cost in each region, The cost matrix is given below:

		Region					
		I	**II**	**III**	**IV**	**V**	**VI**
Salesmen	**A**	**15**	**35**	**0**	**25**	**10**	**45**
	B	40	5	45	20	15	20
	C	25	60	10	65	25	10
	D	25	20	35	10	25	60
	E	30	70	40	5	40	50
	F	10	25	30	40	50	15

(i) Find the allocation to give minimum cost what is the cost?
(ii) Now suppose the above table gives earning of each sales man at each region. How can you find an allocation so that the earning will be maximum? Determine the solution with optimum earning. **[5+5=10]**

3. (a) A plant Manager is considering replacement policy to a new machine. He estimates the following costs

Year	1	2	3	4	5	6
Replacement cost at the beginning of the year	100	110	125	140	160	190
Salvage value at the end of the year	60	50	40	25	10	0
Operating costs	25	30	40	50	65	80

Find the year when replacement is to be made. **[8]**

(b) Discuss the advantages and disadvantages of process layout. **[7]**

4. (a) Discuss the advantages of preventive maintenance. **[8]**
(b) Briefly explain types of process. **[7]**

Section – C

III. Answer any two questions from the following:

1. **(a)** Explain various SET operators used in DBMS. **[8]**
(b) Define programmed and non-programmed decision. **[7]**

2. **(a)** What is flow chart? Write any 5 symbols in flow chart. **[3+5=8]**
(b) Write roles and responsibilities of SBA. **[7]**

3. **(a)** Write classifications of quality costs. **[6]**
(b) What are major features of ERP? **[9]**