PAPER 9 – OPERATIONS MANAGEMENT
&
INFORMATION SYSTEM

Paper – 9 : OPERATIONS MANAGEMENT & INFORMATION SYSTEM

Full Marks: 100   **Time Allowed: 3 Hours**

Section – A

I.   Answer the following questions which is compulsory:

1.   Answer any five of the following questions: [5×2=10]
     (a) What is Open System?
     (b) Define Product Mix.
     (c) Define method of Job Evaluation.
     (d) Limitations of Preventive maintenance.
     (e) What does Sigma value indicates.
     (f) Name any two models of DBMS.
     (g) Define Primary Key.
     (h) What Kaizen mean?

2.   Match the following: [5×1=5]

List A	List B
(A) Linear Programming	(1) 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: [5×1=5]
     1.   Private key is used to create a digital signature.
     2.   Online processing and real time processing are same.
     3.   Database Approach increasing redundancy.
     4.   Method study should precede Work Measurement.
     5.   EIS helps top level management is solving unstructured problems.

4.   Fill in the blanks with one word or two: [5×1=5]
     (a) Egronomics is another name for _____.
     (b) Data which described about another data is _____.
     (c) An executive information system is an advanced model of _____.
     (d) Efficiency = (_____ / Actual hours) x 100.
     (e) A _____ is called on attribute

Section – B

II.   Answer any three questions from the following:

1.   (a) Sonar Gold Fields miners at 10th level have an accepted production standard of two
        trolley-loads an hour in an eight-hour working day. In addition to the mining of the
        gold-bearing soil, the miners have to do a few routine jobs such as cleaning,
        sharpening and maintaining the tools, for which they are paid a wage of ₹9 per
        hour upto a maximum of two hours per day. The base wage rate of the miners
        engaged in production/mining job is ₹ 6.60 per hour. If Subrata, a miner,
        produced 18 trolley-loads in addition to performing his routine tasks, what wages
        should he get at the end of the day?   [6]

     (b) Following is the data obtained from the Bureau of Industrial Costs and Prices. Have
        the prices kept pace with the rising costs?

	2007	08	09	10	11	12	13	14	15
Costs per unit of output	203	216	223	239	248	253	279	301	311
Price of final output	225	242	250	271	275	277	295	318	329

[9]

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. [7]

(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
	A	15	35	0	25	10	45
	B	40	5	45	20	15	20
Salesmen	C	25	60	10	65	25	10
	D	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 salesman at each region. How can you find an allocation so that the earning will be maximum? Determine the solution with optimum earning. Mention any six characteristics of a good Product Design. [8]

3. (a) Standard time for a task is 8 hours. Calculate the efficiency of a workman in the following cases:
(i) worker completes the job in 10 hours.
(ii) worker completes the job in 6 hours. [6]

(b) The data on the operating costs per year and resale prices of equipment A whose purchase price is ₹10,000 are given here:

Year	1	2	3	4	5	6	7
Operating Cost (₹)	1500	1900	2300	2900	3600	4500	5500
Resale Value (₹)	5000	2500	1250	600	400	400	400

(i) What is the optimum period for replacement?
(ii) When equipment A is 2 years old, equipment B, which is a new model for the same usage, is available. The optimum period for replacement is 4 years with an average cost of ₹3600. Should we change equipment A with that of B? If so, when? [9]

4. (a) What are the steps in process planning? [7]

(b) What do you mean by CBA (Cost Benefit Analysis). List the various steps in Cost Benefit Analysis. [8]

Section – C

I. **Answer any two question from the following:**

1. (a) State the main reasons for the spread of E – Commerce.   **[8]**

    (b) What are major features of SDLC.   **[7]**

2. (a) Explain characteristics of an information system   **[8]**

    (b) What are the basic features of an MIS?   **[7]**

3. (a) Explain various SET operators used in DBMS.   **[7]**

    (b) State two distinctive features of each of the following technologies used in a business situation: **[2×4=8]**
    (i)   Management Information System
    (ii) Decision Support System
    (iii) Executive Information System
    (iv) Expert Systems.