

PTP_Intermediate_Syllabus 2008_Dec2014_Set 2

Paper 9 - Operations Management & Information Systems

Time allowed-3hrs

Full Marks: 100

Section I (Operations Management)

Answer Question No. 1 which is compulsory and answer any two from the rest, under Section I.

Working Notes should form part of the answer.

1. (a) Fill in the blanks given below: (1 x 7 =7)

- (i) -----budgeting is a method of budgeting whereby all activities are re-evaluated each time a budget is formulated.
- (ii) Progressing means directing the ----- to proper channels and shielding them from adverse factors inseparable from actual operations.
- (iii) Point rating system is one of the best known method of -----.
- (iv) ----- provides the highest standards for quality controls of products and processes.
- (v) Routine maintenance is emphasized to ensure that flows are not interrupted by ----- or malfunctioning equipment.
- (vi) In solving a linear programming problem, ----- method is generally used where there are two or three variables.
- (vii)----- activities in a PERT Network do not require time or other resources.

(b) Expand the following abbreviations: (1 x 7 =7)

- (i) DBR
- (ii) IPPS
- (iii) DS/RO
- (iv) ABFS
- (v) QFD
- (vi) LD
- (vii)CNC

2. (i) A retailer deals in a perishable commodity. The daily demand and supply are variables. The data for the past 500 days show the following demand and supply:

Availability (Kg.)	Supply (No. of days)	Demand (Kg.)	Demand (No. of days)
10	40	10	50
20	50	20	110
30	190	30	200
40	150	40	100
50	70	50	40

The retailer buys the commodity at ₹ 20 per kg. and sells at ₹ 30 per kg. Any commodity remains at the end of the day, has no sales value. Moreover the loss on unsatisfied demand is ₹ 8 per Kg. Given the following pair of random numbers, simulate 6 days sales,

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demand and profit: (31, 18) (63, 84) (15, 79) (07, 32) (43, 75) (81, 27). The first random number in the pair is that of supply and the second random number is for demand. 9

(ii) The breakdown probability of an equipment is given below:

Month	Probability
1	0.05
2	0.15
3	0.30
4	0.30
5	0.20

There are 50 such equipments in the plant. The cost of individual preventive replacement is ₹15 per equipment and the cost of individual breakdown replacement is ₹30 per equipment. Which is the most suitable maintenance policy? Periodicities of replacement are considered every one, two, three and four months. 9

3. (i) Production Manager of a unit wants to know from what quantity he can use automatic machine against semi-automatic machine.

Data	Automatic	Semi-automatic
Time for the job	4 mins	10 mins
Set up time	4 hrs	3 hrs
Cost per hour	₹40	₹24

Calculate the break-even point. 7

(ii) The demand for three months for 100 Watt bulbs is given below:

Period	January	February	March
Demand	1000	1200	1600

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 month of April by using Weighted Moving Average Method. 4

(iii) A project with normal duration and cost along with crash duration and cost for each activity is given below:

Activity	Normal time (Hrs.)	Normal cost (₹)	Crash time (Hrs.)	Crash cost (₹)
1-2	5	200	4	300
2-3	5	30	5	30
2-4	9	320	7	480
2-5	12	620	10	710
3-5	6	150	5	200
4-5	0	0	0	0
5-6	8	220	6	310
6-7	6	300	5	370

Overhead cost is ₹ 50 per hour.

Required:

(1) Draw network diagram and identify the critical path. 7

4. (i) Describe Zero Date of a project. 5

(ii) Define Competitive Benchmarking. 3

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- (iii) What is the utility of a Single purpose machine tool? 3
(iv) State the activities included in JIT manufacturing. 7

Section II Information System

Answer Question No. 5 which is compulsory and answer any two from the rest, under Section II.

5. (a) Fill in the blanks given below : (1 x 10 =10)

- (i) ----- is the structured transmission of data between organizations by electronic means.
(ii) ----- covers a large geographic area with various communication facilities such as long distance telephone services, satellite transmission and under-sea cables.
(iii) ----- system is an integrated computer based application used to manage internal and external resources, including tangible assets, financial resources, material and human resources.
(iv) In a ----- phase, the software is usually run in parallel with the current system for sometime.
(v) A ----- with a value of 0 or 1 is added to a block of data for error detection purposes.
(vi) ----- audit is the process of examining and evaluating of adequacy and effectiveness of internal controls.
(vii) Redundancy is the ----- of identical data in the storage.
(viii) A query language is a set of ----- for creating, updating and accessing data from database.
(ix) An ----- system is an advanced model of Decision Support System which can take care of unstructured problem situation.
(x) Encryption is a process of converting a text into a ----- form by the use of some mathematical function.

- (b) Expand the following abbreviations: (1 x 4 =4)

- (i) RISC
(ii) ORDBMS
(iii) MODEM
(iv) EEPROM
6. (i) Discuss the functions of a web browser. 4
(ii) List the factors for high popularity of internet. 6
(iii) What are the strengths/Advantages of Prototyping Model. 6
(iv) State the critical factors involved in data warehousing. 2
7. (i) Describe Non-programmed decision making. 4
(ii) Describe Integrative Approach. 4
(iii) Discuss the sources and benefits of knowledge management. 5
(iv) List the advantages of e-mail. 5
8. (i) Write a note on Disaster Recovery Plan. 6
(ii) What provisions are developed to take care of eventuality in case of failure? 6
(iii) List the different phases of ERP implementation project. 6