C 3719

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Name.....

Reg. No.....

SECOND SEMESTER M.B.A. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, JULY 2021

M.B.A. (CUCSS)

BUS 2C 14—MANAGEMENT SCIENCE

Time : Three Hours

Maximum : 36 Weightage

Part A

Answer **all** *questions.*
Each question carries 1 *weightage.*

1. What are the limitations of CPM network ?
2. When is a game said to be fair ?
3. List the types of research methods.
4. Network diagrams must be timely updated. Why ?
5. How does queuing theory play a role in management ?
6. State the dominance theory.

(6 × 1 = 6 weightage)

Part B

Answer any **four** *questions.*
Each question carries 3 *weightage.*

7. What are the assumptions of Assignment model ?
8. What is the outcome of uncertainty in decision making ?
9. What are the differences between pure and mixed strategies ?
10. A management is faced with the problem of choosing one of the products for manufacturing. The chance that market will be good, fair or bad is 0.75, 0.15 and 0.10 respectively. Select the decision as per EMV criterion :

Acts	Good	Fair	Bad
A	35000	15000	5000
B	50000	20000	−3000

11. Explain the principles of models.
12. What should be the characteristics of a decision maker ?

(4 × 3 = 12 weightage)

Turn over

Part C

Answer any **three** *questions.*
Each question carries 4 *weightage.*

13. What are competitive models, network models and simulation models ?

14. What are uses of network techniques for management ?

15. Calculate average expected time and draw network for a project with the following activity times. Find critical path :

Activity	t_o	t_p	t_m
2—4	1	5	3
2—6	1	7	4
4—8	4	16	7
6—8	1	5	1.5
8—10	1.5	14.5	3.5

16. The research department of consumer products division has recommended to the marketing department to launch soaps with three different perfurmes. The marketing manager has to decide the type of perfume to launch under the following estimated pay off for the various levels of sales :

Payoff table

Perfume	Sale 1 (S_1)	Sale 2 (S_2)	Sale 3 (S_3)
A1	250	15	10
A2	40	20	5
A3	60	25	3

Estimate which should be the decision as per Maximax, Maximin, Laplace and Hurwitz criteria. (given $\alpha = .6$). α

17. Linear programming is a powerful quantitative technique which is useful to solve problems. Explain through examples.

(3 × 4 = 12 weightage)

Part D (Compulsory)

It carries 6 *weightage.*

18. A TV dealer finds that the cost of holding a TV in stock for a week is Rs. 50. Customers who cannot obtain new TVs immediately tend to go to other dealers and he estimates that for every customer who cannot get immediate delivery he losses an average of Rs. 200. For one particular model of TV the probabilities of a demand of 0, 1, 2, 3, 4 and 5 TVs in a week are 0.05, 0.10, 0.20, 0.30, 0.20 and 0.15 respectively :

(a) How many televisions per week should the dealer order ? Assume there is no time lag between ordering and delivery.

(b) Compute Expected Value of Perfect Information (EVPI).

(c) The dealer is thinking of spending on a small market survey to obtain additional information regarding the demand levels. How much should he be willing to spend on such a survey ?

(1 × 6 = 6 weightage)