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B.Com.(Semester - VI) (New) (CBCS) Examination Oct/Nov-2019
ADVANCED STATISTICS (Paper – II)

Day & Date: Friday, 25-10-2019
 Time: 03:00 PM To 05:30 PM

Max. Marks: 70

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Fill in the blanks by choosing the correct alternatives given below: 14

- 1) Two persons zero sum game means that the _____.
 a) Sum of losses to one player equals to the sum of gains to the other.
 b) Sum of losses to one player is not equals to the sum of gains to the other.
 c) Both (a) and (b)
 d) none of the above
- 2) Game theory models are classified by the _____.
 a) number of players
 b) sum of all players
 c) number of strategies
 d) all of the above
- 3) A game is said to be fair if _____.
 a) Both upper and lower values of the game are same and zero.
 b) Upper and lower values of the game are not equal.
 c) Upper value is more than lower value of game
 d) None of the above
- 4) The size of the payoff matrix of a game can be reduced by using principle of _____.
 a) game inversion
 b) rotation reduction
 c) dominance
 d) game transpose
- 5) A type of decision making environment is _____.
 a) certainty
 b) uncertainty
 c) risk
 d) all of the above
- 6) Decision theory is concerned with _____.
 a) methods of arriving at
 b) selecting optimal decision in sequential manner optimal decision
 c) analysis of information that is available
 d) all the above
- 7) Which of the following criteria is not used for decision making under uncertainty _____.
 a) maximin
 b) maximax
 c) minimax
 d) minimize the expected loss
- 8) Expected monetary value (EMV) is _____.
 a) the average or expected monetary outcome of a decision if it can be repeated a large number of times.
 b) the average or expected value of the decision, if you know what would happen ahead of time.
 c) the average or expected value of information if it were completely accurate
 d) the amount you would lose by not picking the best alternative

- 9) The objective of network analysis is to _____.
 a) minimize total project duration
 b) minimize total project cost
 c) minimize production delays, interruption and conflicts
 d) all of the above
- 10) Network models have advantages in terms of project _____.
 a) planning
 b) scheduling
 c) controlling
 d) all the above
- 11) The slack for an activity in network is equal to _____.
 a) EF-ES
 b) LF-LS
 c) LS-ES
 d) EF-LS
- 12) An advantages of simulation as opposed to optimization is that _____.
 a) several options of measure of performance can be examined
 b) complex real life problems can be studied
 c) it is applicable in cases where there is an element of randomness in a system
 d) All the above
- 13) Which of the following is not the special purpose of simulation language?
 a) BASIC
 b) GPSS
 c) GASP
 d) SIMSCRIPT
- 14) As simulation is not an analytical model, therefore result of simulation must be viewed as _____.
 a) unrealistic
 b) exact
 c) approximation
 d) simplified

Q.2 Answer the following questions.**14**

- a) Briefly explain the Monte Carlo simulation with suitable example.
 b) Two competitors A and B are competing for the same product. Their different strategies are given in the following payoff matrix.
 Use dominance principle to find the optimal solution.

Q.3 Answer the following questions.**14**

- a) Show how to solve 2×2 two person zero sum game without any saddle point.
 Derive the expression for mixed strategies.
 b) Give a decision making under risk EMV criteria.

Q.4 Answer the following questions. (any One)**14**

- a) A period schedule has the following activities and time (in hours) of completion of activity is as follows.

| Activity | 1-2 | 2-3 | 2-4 | 1-4 | 4-5 | 5-6 | 3-6 | 2-6 |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Time (in Hours) | 5 | 8 | 6 | 4 | 4 | 5 | 3 | 1 |

- b) Briefly explain the different decision rules usually adopted in context of decision making under condition of uncertainty.

Q.5 Answer the following questions. (Any One)**14**

- a) Explain the rule of dominance in game theory. Solve the following game graphically.

$$\begin{bmatrix} 4 & 5 & 15 \\ 9 & 6 & 3 \end{bmatrix}$$

- b) Write a short note on simulation and its application.