Paper Code : 3800

MCom Sem – III (Old Course)
JUL/SEP – 2021
SOFT SKILL - 3.53 OPERATIONS RESEARCH

કુલ સમય : ૬૦ મીનીટ **કુલ પ્રશ્નો : ૫૦** **વિદ્યાર્થીએ ટીક કરવાના પ્રશ્નો : ૩૫**
નોંધ : વિદ્યાર્થીએ માત્ર ૩૫ પ્રશ્નો જ ટીક કરવાના રહેશે. જો વધારે ટીક કરેલ હશે તો પ્રથમ ૩૫ પ્રશ્નો જ ગણતરીમાં લેવામાં આવશે.

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(1) The final stage of Operations Research is_____.
(A) Identification of the problem (B) Selection of Model (C) Solution of Problem (D) Verification of Model

(2) OR is the art of winning war without actually fighting. This definition is given by _____.
(A) T.M. Satty (B) Aryaman Arnd Aurther (C) Daellenback and George (D) Prof, Aurther Clarke

(3) The art of getting bad solution of the problem compared to worse solution is known as _____.
(A) Linear Programming (B) Operations Research (C) Transportation Problem (D) PERT and CPM

(4) Operations Research is used in _____field.
(A)Production (B) Administrative (C) Management (D) All of above

(5) The models related to allocation are_____.
(A) Linear Programming Models (B) Assignment Problem (C) Game Theory (D) Dynamic Models

(6) What is the main aim of using Operations Research Techniques?
(A) To meet the expenses (B) To maximize the profit (C) For the benefit of whole unit (D) All of the above

(7) Which of following is element of decision - Theory?
(A) Strategy (B) Event (C) Pay-off matrix (D) All of above

(8) Which of following is element of pay-off matrix?
(A) Positive (B) Negative (C) Zero (D) All of the above

(9) What is the interval of co-efficient of optimistic approach $\propto$ in Horwich principle?
(A) (-1,1) (B) (0, 1) (C) (-1, 0) (D) None

(10) What is balanced approach?
(A) Maxi-min (B) Maxi-max (C) Horwich (D) EMV

(11) What is expected value of perfect Information (EVPI)?
(A) EPPI+Max.EMV (B) EPPI-Max Emv (C) EPPI+Min EMV (D) EPPI-Min EMV

(12) What is $(1-\propto)$ if $(1-\propto): \propto = 1:2$ in Horwich Principle?
(A) 1 (B) 0.67 (C) 0.33 (D) None

(13) In which method equal probability is considered of different events?
(A) Maxi-min (B) Maxi-max (C) Horwich (D) Laplace

(14) Linear Programming was first introduced by _____
(A) Karl Pearson (B) George B. Dantzing (C) Newton (D) Spearman

(15) The values of the variables in Linear Programming problem are_____
(A) Negative (B) Zero (C) Only Positive (D) Non-negative

(16) In Linear Programming $x, y \geq 0$ are called _____
(A) Non-negative constraints (B) Zero Condition (C) Objective Function (D) None

(17) If three or more variables are there in a Linear Programming problem then_____method is used to solve it.
(A) Graphical (B) Complex (C) Simplex (D) None

(18) The limited resources can be expressed in the form of _____in a Linear Programming problem.
(A) Linear inequalities (B) Objective function (C) Optimum solution (D) Both (A) and (B)

(19) What is the value of constants at right hand side of a linear programming problem?
(A) Negative (B) Positive (C) Non-Negative (D) Zero

(20) Linear Programming is of the most frequently used method of _____techniques.
(A) Regression (B) Operations Research (C) Correlation (D) None

(21) In which quadrant feasible solution of Linear Programming is?
(A) First (B) Second (C) Third (D) Fourth

(22) What is the minimum value of objective function of a problem having objective function $f = 400x + 300y$ with extreme points of feasible solution are A(0, 12), B(24,0) C(10, 20) and D(20, 0)
(A) 3600 (B) 9600 (C) 10000 (D) 8000

(23) From which straight line $Y \geq 5x$ does pass?
(A) (0, 0) (B) (10, 50) (C) (4, 20) (D) All of above

(24) Which variable is added in inequality constraints at $'\leq'$ type?
(A) Slack variable (B) Surplus variable (C) Artificial variable (D) None

(25) Which value of replacement ratio is used to select key row?
(A) Maximum (B) Minimum (C) Negative (D) Random

(26) What is the value of penalty in Big-M method?
(A) Too small (B) Too Large (C) Zero (D) One

(27) _____ No. of allocations become feasible solution of transportation problem with m rows and n columns.
(A) $m+n+1$ (B) $2m+n-1$ (C) $m+n-1$ (D) None

(28) Which is the best method for obtaining basic feasible solution of transportation problem?
(A) North-West corner method (B) Least cost method (C) Vogel's method (D) Hungarian's method

(29) Which of the following method used for obtaining optimum solution of a transportation problem?
(A) Least cost (B) Modified distribution (MODI) (C) Vogel (D) None

(30) Basic feasible solution of a transportation problem is $X_{11} = 16, X_{12} = 1$ and $X_{22} = 22,$ per unit cost of each allocation is $C_{11} = 4, C_{12} = 8$ and $C_{22} = 6$ then total cost is _____.
(A) 201 (B) 204 (C) 203 (D) 205

(31) What is the limitation of North-West corner method?
(A) Difficult to use (B) Always give degenerated solution
(C) Do not consider transportation cost (D) All of the above

(32) Following transportation problem is of what type?

	D_1	D_2	Supply
O_1	4	3	400
O_2	7	2	200
Demand	300	300	

(A) Balanced (B) Unbalanced (C) Unique (D) None

(33) _____ method is used to solve assignment problem.
(A) PERT-CPM (B) Hungarian (C) (A) & (B) both (D) None

(34) Maximum how many activities are assigned to each resource in assignment problem?
(A) One (B) Two (C) Three (D) Four

(35) Which principle is used in assignment problem for assignment?
(A) One-One (B) Many-One (C) One-Many (D) Constant

(36) Who had first time developed easy method to solve assignment problem?
(A) Karl Pearson (B) D. Koning (C) Dantzing (D) Fisher

(37) Mathematician from which country had first time given easy method to solve assignment problem?
(A) Britain (B) U.S.A. (C) India (D) Hungary

(38) What is added in 4×5 type cost matrix to convert into balanced problem?
(A) Row (B) Column (C) Either row or column (D) None

(39) During assignment, if there are two or more zeros in all the rows and columns then what is the type of solution?
(A) Restricted Solution (B) Unique Solution (C) Alternative Solution (D) None

(40) Obtain minimum cost of following assignment problem.

	J_1	J_2
E_1	32	36
E_2	42	26

(A) 74 (B) 68 (C) 58 (D) 62

(41) A salesman has to visit 4 cities, then in how many ways his tour to be planned?
(A) 6 (B) 120 (C) 12 (D) None

(42) _____method is used to solve game problem.
(A) Saddle point Method (B) Graphical Method (C) Both (A) and (B) (D) None

(43) What is the value of following game?
Player A

$$\text{Player B} \begin{bmatrix} 17 & 4 & 5 \\ 8 & 7 & 9 \\ -9 & 6 & 1 \end{bmatrix}$$

(A) 6 (B) 7 (C) 4 (D) 3

(44) If payoff matrix for Player A in two – person zero – sum game is denoted by a_{ij}, then what is the payoff matrix for Player B?
(A) bij (B) $-aij$ (C) $-bij$ (D) None

(45) For which type of payoff matrix graphical method may be applicable?
(A) $m \times n$ (B) $m \times 2$ (C) $2 \times n$ (D) Both (B) & (C)

(46) What is the value of V for fair game?
(A) 1 (B) -1 (C) 0 (D) None

(47) The solution of mixed strategy games without saddle point can be obtained by _____.
(A) Algebraic Method (B) Linear programming Method (C) Graphical Method (D) All of the above

(48) The game is referred as _____if the number of players are more than two.
(A) Two – person (B) Three – person (C) n – persons (D) None

(49) Which method is used to reduce size of payoff matrix?
(A) Maxi – Min Principle (B) Saddle point Method (C) Mini – max Principle (D) Dominance Rule

(50) Find saddle point of following game. Player B

		B_1	B_2
Player A	A_1	3	9
	A_2	5	7

(A) (A_1, B_1) (B) (A_1, B_2) (C) (A_2, B_1) (D) (A_2, B_2)
