Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **MBA**

15MNG101

1st Semester Back Examination 2018-19
STATISTICS AND DECISION SCIENCE
BRANCH : MBA
Time : 3 Hours
Max Marks : 100
Q.CODE : E635

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.
The figures in the right hand margin indicate marks.

Part- I

Q1 **Short Answer Type Questions (Answer All-10)** **(2 x 10)**

a) The mean of distribution is 22.2 and the mode is 23.3 find median.
b) The average of 5 numbers is 40 and the average of another 6 numbers is 50. Find average of all numbers taken together.
c) The arithmetic mean of two numbers is 6.5 and their G.M is 6. Find two numbers.
d) Find mean if C.V = 5% and variance = 4.
e) Compute S.D of 7,7,7,9,9,9.
f) Find standard error of correlation coefficient if r=0.5
g) If B $\subset$A, find P $(\frac{A}{B})$.
h) One card is drawn from a pack of 52 cards. What is prob. that card drawn is an ace?
i) In a binomial distribution if mean=4 and variance = 3, find 'p'.
j) If λ=20 persons per hour and μ=25 persons per hour, then find prob. that the service facility is busy.

Part- II

Q2 **Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 x 8)**

a) Find N, if $R=\frac{2}{3}$ and $\Sigma D^2=55$ (R = Rank Correlation Coefficient)
b) Two variables gave the following data :
$\bar{x} = 20, \bar{y} = 15, \delta_x = 4, \delta_y = 3$, r=0.7
Find the value of y when x=24 from the regression equation.
c) Find median from the following table :

Marks	Less than 10	Less than 20	Less than 30	Less than 40	Less than 50
No. of Students	3	8	17	20	22

d) If the means of two groups of 30 and 50 observations are equal and their S.D are 8 and 4 respectively, find grouped S.D. are .8 and .4 respectively, find grouped S.D.
e) If Q_1 = 26, Q_3 =76 and Bowley coefficient of skewness = 0.2, Find median.
f) If a random variable x follows Normal distribution with mean = 18 and S.D.=25, find P(-31 < x < 67)
g) A Binomial random variable x satisfies the relation 9P (x=4) = P(x=2) find 'p'.
h) Two dice are tossed at once. What is prob. that the sum is neither 7 nor 11?
i) Find the best act from the following pay-of table by using EMV criterion.

Event	**Act**			**Prob.**
	X	**Y**	**Z**	
A	-120	-80	100	0.3
B	200	400	-300	0.5
C	260	-260	600	0.2

j) The following table gives daily demand of brades in 100 days.

Demand	0	1	2	3	4	5
Frequency	14	16	18	23	19	10

Simulate for next 8 days testing Random Nos: 2379,1482,0652,3009.

k) Kind optimal strategy and value of the game from the following pay-off matrix

$$\begin{matrix} & \text{Player B} \\ \text{Player A} & \begin{bmatrix} -1 & 3 & 2 \\ 3 & 2 & 2 \\ 2 & 0 & 1 \end{bmatrix} \end{matrix}$$

l) Obtain an initial BFS and TC from the following TP by NWCM.

	D1	**D2**	**D3**	**Supply**
O1	4	3	2	6
O2	6	1	4	9
O3	7	2	4	7
Demand	8	10	4	

(O = Origin, D= Destination)

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

Q3 Solve the following LPP by simplex method **(16)**

Maximize Z = 2x+3y

s.t

2x+4y≤12

4x+2y≤12, x,y≥0

Q4 Find the optimal cost plan by 'MODI' method via VAM for the following transportation problem. **(16)**

	W1	**W2**	**W3**	**Supply**
P1	25	17	25	300
P2	15	10	18	500
Demand	250	300	500	

(W = Ware house, P = Plant)

Q5 Solve by using dominance rule the following game **(16)**

$$\begin{matrix} & \text{B} \\ \text{A} & \begin{bmatrix} 1 & 7 & 2 \\ 6 & 2 & 7 \\ 6 & 1 & 6 \end{bmatrix} \end{matrix}$$

Q6 Find the assignment of men to jobs that will minimize the total time taken in minutes and is given in the following matrix. **(16)**

Workers	**Jobs**			
	A	**B**	**C**	**D**
1	45	40	51	67
2	55	40	61	53
3	49	52	48	64
4	41	45	60	55