USN ☐☐☐☐☐☐☐☐☐☐   **14MBA14**

First Semester MBA Degree Examination, Dec.2018/Jan.2019
Business Analytics

Time: 3 hrs.   Max. Marks:100

<u>SECTION – A</u>

Note : 1. Answer any FOUR questions from Q.No.1 to Q.No.7.
2. Use of normal distribution table is allowed.

1   List out different measures of central tendency.   **(03 Marks)**

2   Write a note on Poisson distribution.   **(03 Marks)**

3   Write any 3 benefits of decision tree.   **(03 Marks)**

4   What is discriminant analysis?   **(03 Marks)**

5   Discuss the importance of business analytics.   **(03 Marks)**

6   What is unbalanced transportation problem?   **(03 Marks)**

7   Explain looping and dangling errors in network.   **(03 Marks)**

<u>SECTION – B</u>

Note : Answer any FOUR questions from Q.No.1 to Q.No.7.

1   Briefly explain steps in decision making process.   **(07 Marks)**

2   Calculate correlation coefficient for below data:

     X   48   35   17   23   47
     Y   45   20   40   25   45

                                                     (07 Marks)

3   Find the area under normal distribution curve from $Z = -0.75$ to $Z = 2.04$.   **(07 Marks)**

4   What is factor analysis? Briefly explain exploratory and confirmatory factor analysis.
                                                     (07 Marks)

5   Solve the following assignment problem by HAM.   **(07 Marks)**

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Jobs

	J_1	J_2	J_3	J_4
M_1	12	30	21	15
M_2	18	33	9	31
M_3	44	25	24	21
M_4	23	30	28	14

Men (rows M_1 to M_4)
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6   Solve graphically Maximize $Z = 40x + 35y$
      Subject to Constraint $2x + 3y \le 60$
                and $4x + 3y \le 96$
                       $x \ge 0$ $y \ge 0$ **(07 Marks)**

7 Draw network and identify critical path: (07 Marks)

Activity	1-2	1-3	2-6	3-4	3-5	4-6	5-6	5-7	6-7
Time (days)	4	6	8	7	4	6	5	19	10

SECTION – C

Note : Answer any FOUR questions from Q.No.1 to Q.No.7.

1 From the prices of shares of x and y below, find out which is more stable in value:

x	35	54	52	53	56	58	52	50	51	49
y	108	107	105	105	106	107	104	103	104	101

(10 Marks)

2 The following table shows the ages (x) and blood pressure (y) of eight persons. (10 Marks)

x	52	63	45	36	72	65	47	25
y	62	53	51	25	79	43	60	33

Find blood pressure of a person when age = 49 years.

3 Explain various decision making environments with suitable examples. (10 Marks)

4 A sweetmeat shop sells a particular type of sweet at Rs.100 per piece. The cost of manufacturing the sweet is Rs.70. Any unsold sweet should be disposed of at a steep discount and is sold at Rs.25 each. According to past records, the daily demand for this sweet ranges from 16 to 21 pieces. If the number of units required per day can be manufactured only once in the day, how many sweetmeats of this type should be the store stack? Apply all five decisions rules. (Use $\alpha = 0.7$). (10 Marks)

5 A firm has 3 manufacturing units at places A, B and C with daily production capacity of 500, 300 and 200 units respectively. It has warehouses at places P, Q, R and S with daily requirements of 180, 150, 350 and 320 units respectively. Per unit shipping charges of different routes are given below. Find initial solution with least cost method. (10 Marks)

	P	Q	R	S
A	12	10	12	13
B	07	11	08	14
C	06	16	11	07

6 Explain in detail rules of Network construction. (10 Marks)

7 An incomplete distribution is given below: (10 Marks)

0-10	10-20	20-30	30-40	40-50	50-60	60-70	Class interval
10	20	?	40	?	25	15	Frequency

Find out missing frequency when median = 35 and total frequency = 170.

SECTION – D
(Compulsory)

8 a. Find the initial solution using NWCM and VAM for below transportation problem. (10 Marks)

	D_1	D_2	D_3	D_4	Supply
S_1	19	30	50	10	7
S_2	70	30	40	60	9
S_3	40	8	70	20	18
Demand	5	8	7	14	

b. Write a short note on:
   i)   Baye's Theorem
   ii) Cluster Analysis
   iii) Data Warehousing
   iv) Master data management. (10 Marks)

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