SARIVAS Institute of Technolog. Library, Mandalore



First Semester MBA Degree Examination, Dec.2015/Jan.2016

Business Analytics

Time: 3 hrs. Max. Marks: 100

SECTION - A

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

1 Discuss the importance of business analytics. (03 Marks)

2 List out the different measures of central tendency. (03 Marks)

3 What do you mean by random variable? Write the broad classes of random variable. (03 Marks)

4 What is redundant constraint? Explain with a neat sketch. (03 Marks)

5 Explain what is discriminent analysis. Bring out its objectives. (03 Marks)

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

7 What is decision tree analysis? Bring out the two approaches used to evaluate the decision tree.

(03 Marks)

SECTION - B

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

1 What is MDS? Bring out some important uses of MDS in marketing. (07 Marks)

2 Briefly explain steps of decision making process. (07 Marks)

Use the graphical method to solve the following LP Problem.

Maximize,
$$Z = x_1 + \frac{x_2}{2}$$

S.T. $3x_1 + 2x_2 \le 12$
 $x_1 + x_2 \ge 8$
 $5x_1 = 10$
 $-x_1 + x_2 \ge 4$

and $x_1, x_2 \ge 0$. (07 Marks)

- 4 The incidence of occupational diseases in an industry is such that the worker have 20 percent chance of suffering from it. What is the probability that out of six worker's 4 or more will come in contact of the disease? (07 Marks)
- 5 From the prices of shares of X and Y below, find out which is more stable in value.

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

(07 Marks)

6 Briefly explain evaluation of business analytics.

(07 Marks)

7 Briefly explain the rules for constructing network diagram.

(07 Marks)

SECTION - C

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

1 Solve the following assignment problem and obtain the minimum cost at which at the jobs can be performed:

Workers	Job (cost in 00 Rs)							
	1	2	3	4	5			
A	25	18	32	20	21			
В	34	25	21	12	17			
C	20	17	20	32	16			
D	20	28	20	16	27			

(10 Marks)

A small project is composed of I activities whose time estimates are listed in the table below. Activities are identified by their beginning (i) and ending (j) node numbers.

Activity	Estimated duration (weeks)							
(i-j)	Optimistic (t _o)	Most likely (t _m)	Pessimistic (t _p)					
1-2	1	1	7					
1-3	1	. . 4	7					
1-4	2	2	8					
2-5	1	1	1					
3-5	2	5	14					
4-6 5-6	2	5	8					
5-6	3	6	15					

- i) Draw the network diagram and its activities in project.
- ii) What is the expected project length?
- iii) Find out the probability of completing the project (i) at least 4 weeks earlier than expected time.

 (10 Marks)

3 Draw a network corresponding to the following information:

			-0			2	III WOLV	11,		
Activity	1-2	1-3	2-6	3-4	2 6	4-6	5-6	5-7	6-7	l
Duration	4	6	8	7	4	6	5	19	10	ı

- i) Draw the network.
- ii) Obtain early and late start time and completion times.
- iii) Determine the critical path.
- iv) Determine the total float.

(10 Marks)

4 The following table shows the ages (x) and blood pressure (y) of 8 persons.

x	52	63	45	36	72	65	47	25
у	62	53	51	25	19	43	60	33

Obtain the regression equation of y on x and find the expected blood pressure of a person who is 49 years old.

(10 Marks)

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5 The following table gives the number of days in a 50 day period during which automobile accidents occurred in a city.

Number of accidents	0	1	2	3	4
Number of days	21	18	7	3	1

Fit a Poisson distribution to the data.

(10 Marks)

- 6 What is a model? Discuss three important decision models of business analytics with example. (10 Marks)
- 7 Briefly explain the types of decision making environment.

(10 Marks)

SECTION - D CASE STUDY - [Compulsory]

Given the following transportation problem:

Wasahauga	1	Marke	Supply	
Warehouse	Α	В	С	Suppry
1	10	12	7	180
2	14	11	6	100
3	9	5	13	160
4	11	7	9	120
Demand	240	200	220	`

It is known that currently nothing can be sent from warehouse 1 to market A and from warehouse 3 to market C.

1. Solve the above problem by using VAM.

(10 Marks)

2. Find the optimal solution.

(10 Marks)