

Subject Code: MB916/R09

M B A - I Semester Regular/Supply Examinations, Dec/Jan – 2015-16

QUANTITATIVE ANALYSIS FOR BUSINESS DECISION

Time: 3 hours

Max Marks: 60

Answer any **FIVE** of the following

All questions carry equal marks. **Q.No.8 is compulsory**

1. What are the criteria for decision making?
2. Solve the following linear programming problem?

$$\begin{aligned} \text{Max } Z &= 5X_1 + 3X_2 \\ \text{STC } 3X_1 + 5X_2 &\leq 15 \\ 5X_1 + 2X_2 &\leq 10 \\ X_1, X_2 &\geq 0 \end{aligned}$$

3. Solve the following assignment problem?

		Machines			
Jobs		A	B	C	D
1		1	4	6	3
2		9	7	10	9
3		4	5	11	7
4		8	7	8	5

4. Determine the optimum strategies for the game?

		B		
		1	2	3
A	1	2	-2	4
	2	-1	4	2
	3	2	1	6

5. 5 coins are tossed 3200 times and the number of heads appearing each time is noted at the end. The following results were obtained.

Number of heads	0	1	2	3	4	5
Frequency	80	590	1100	900	500	300

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6. The following data relate to radio advertising expenditures, news paper advertising expenditures and sales. Fit a regression $y=a+b_1x_1+b_2x_2$.

Radio advertising expenditure (X₁)	4	7	9	12
News paper advertising expenditure (X₂)	1	2	5	8
Sales (Y)	7	12	17	20

7. To assess the significance of possible variation in performance in a certain test between grammar schools of city, a common test was given to a number of students taken at random from the senior 5th class of each of the 4 schools concerned. The results are given below. Make an analysis of variance of data.

SCHOOLS

A	B	C	D
8	12	18	13
10	11	12	9
12	9	16	12
8	14	6	16
7	4	8	15

8. CaseStudy:

A small project is compose of activity whose time estimated are listed in the table below.

- Draw the project network?
- Find the expected duration and variance for each activity, what is the expected project length?
- Calculate the variances of the project length?
- Where is the probability of project completion earlier than 4 weeks?

	Estimated	duration	weekly
Activity	a	m	b
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	2	5	8
5-6	3	6	15

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