

Roll No.

Total No. of Questions : 14]

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MBA/MBA(IB) (Sem. - 1st)

QUANTITATIVE TECHNIQUES

SUBJECT CODE : MBA - 104 (2012 & Onward)

Paper ID : [C0104]

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A : Attempt any Four questions. Each question carries 5 marks.
- 2) Attempt Four questions from Section - B selecting one question from each unit. Each question carry 8 marks.
- 3) Section - C : Consists of one case study of 8 marks.

Section - A

- Q1)** Discuss the importance of inferential statistics in Management Analysis.
- Q2)** Explain the various steps in testing of hypothesis.
- Q3)** What do you understand by non-probability sampling?
- Q4)** What are index numbers? How are they used in analysis of data?
- Q5)** Elaborate classical approach to probability.
- Q6)** What is the role of random variable in management analysis?

Section - B

Unit - I

- Q7)** a) Discuss the role of statistical analysis in managerial decision making.
b) Explain the primary & secondary sources of collection of data.

OR

- Q8)** The following data is given for two companies. Combining the data for groups of male and female employees, find out (i) which company has a higher productivity per employee, and (ii) which company has more consistent productivity?

Productivity per employee	Company A		Company B	
	Males	Females	Males	Females
Mean	30	20	27	32
Variance	8	3	12	5
No. of employees	40	10	20	30

Unit - II

- Q9)** An automobile manufacturer tabulates the following information about age groups and the liking for a particular model of the car which it plans to introduce. On the basis of this data, can it be concluded that the car model appeal is independent of the age groups? (Given for $\nu = 3$, $\chi^2 = 7.815$)

		Age Group (in years)				Total
		Below 20	20-30	30-40	40-50	
Persons who	Liked the car	140	80	40	20	280
	Disliked the car	60	50	30	80	220
	Total	200	130	70	100	500

OR

- Q10)** The data below gives the number of refrigerators sold by 4 salesmen in 3 months. Determine
- Whether there is a significant difference in the sales made by the four salesman?
 - Whether there is a significant difference in the sales made during different months?

Months	Salesmen			
	A	B	C	D
May	50	40	42	39
June	46	48	50	45
July	39	44	40	39

Unit - III

- Q11)** a) Discuss the uses and significance of index numbers? Further discuss the methods of construction of different Index numbers.
- b) What is standard error in regression analysis?

OR

- Q12)** The following table gives the age of cars of a certain make and annual maintenance costs. Obtain the regression equation for costs related to age. Also find out the maintenance cost of a car whose age is 12 years old.

Age of cars (in years)	2	4	6	8
Maintenance costs (in thousand Rs)	10	20	25	30

Unit - IV

- Q13)** Discuss the utility of Time Series Analysis in managerial analysis decisions. Also discuss its various components and methods.

OR

Q14) A manager accepts the work submitted by his typist only when there is no mistake in the work. The typist has to type on an average 20 letters per day of about 200 words each. Find the chance of her making a mistake (i) if less than 1% of the letters submitted by her are rejected; (ii) if on 90% days, all the work submitted by her is accepted.

Section - C
(Case Analysis)

A departmental store gives in-service training to its salesmen, which is followed by a test. The store management is considering whether it should terminated the services of any salesman who does not do well in the test. The following data gives the test scores and sales made by the nine salesmen during a certain period. You as a manager are required to analyze the given data, and determine whether there is any association between the test scores and sales. Subsequently discuss as to whether the termination of services of low test scoring employees is justified? Also determine if the store management wants a minimum sales volume of Rs. 30,000, what should be the minimum test scores that shall ensure continuation of service? Further estimate the most probable sales volume of a salesman who has scored a test score of 28.

Test Scores	14	19	24	21	26	22	15	20	19
Sales (in '000 Rs)	31	36	48	37	50	45	33	41	39

