

Roll No.

Total No. of Pages : 03

Total No. of Questions : 15

MBA / MBA(IB) (2012 & onward) (Sem.-1)

QUANTITATIVE TECHNIQUES

Subject Code : MBA-104

Paper ID : [C0104]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

- 1. SECTION-A contains SIX questions carrying FIVE marks each and students has to attempt any FOUR questions.**
- 2. SECTIONS-B consists of FOUR Subsections : Units-I, II, III & IV. Each Subsection contains TWO questions each carrying EIGHT marks each and student has to attempt any ONE question from each Subsection.**
- 3. SECTION-C is COMPULSORY and consist of ONE Case Study carrying EIGHT marks.**

SECTION-A

1. Compute the mean, median, mode, range and inter-quartile range for following data :
2, 3, 1, 2, 6, 4, 2, 1, 5, 3, 2, 3, 1, 2, 2, 1, 3, 1, 2, 2, 4, 2, 1, 2, 8, 3, 2, 1, 1, 3.
2. Describe general methods of assigning probabilities.
3. Distinguish between discrete and continuous random variables.
4. How to estimate a population mean from a sample mean when population standard deviation is known and when it is unknown?
5. Explain the difference in testing hypothesis process of two independent and related populations.
6. Discuss covariance and correlation as methods of association are similar and different from each other.

SECTION-B

UNIT-I

7. Suppose you are an operations manager for a plant that manufactures batteries. Explain how you can use descriptive and inferential statistics in the industry.
8. Describe different types of data used in measurement and explain various graphical techniques used for each type of data by giving example.

UNIT-II

9. Determine when to use sampling instead of a census. Distinguish between random and non-random sampling methods.
10. A company randomly selected 10 employees to measure the change in their attitude after training. The scores obtained by these employees are shown below. Use alpha as 0.10 to determine whether there is a significant change in the attitude of employees after training program.

Employees	Before training	After training	Employees	Before training	After training
1.	25	32	6.	30	28
2.	26	30	7.	22	25
3.	28	32	8.	20	30
4.	22	34	9.	21	25
5.	20	32	10.	24	28

UNIT-III

11. Compute cost of living index number using Laspeyre's and Paasche's price index number.

Items	Unit consumption in base year (Rs.)	Price in base year (Rs.)	Price in current year	Unit consumption in base year (Rs.)
1.	150	20	23	152
2.	100	14	17	95
3.	40	30	42	37
4.	42	60	80	35
5.	50	12	18	44
6.	120	10	13	110
7.	12	270	330	13
8.	50	70	100	35

12. How correlation and regression analysis differ from each other? Discuss various types of correlation and application of correlation as non-parametric test.

UNIT-IV

13. For the following data fit a straight line trend by the method of least squares and estimate the sales in 2011.

Years	Sales	Years	Sales	Years	Sales	Years	Sales
1992	950	1996	1050	2000	1200	2004	1180
1993	920	1997	1010	2001	1250	2005	1330
1994	880	1998	1100	2002	1300	2006	1400
1995	1020	1999	1150	2003	1220	2007	1250

14. List down the properties of various probability distributions. How Binomial and Poisson distribution can be approximated as normal distribution?

SECTION-C

15. CASE STUDY

A study conducted by PricewaterhouseCoopers has determined that the average cost of hiring an employee is \$3270 and the average annual human resource expenditure per employee is \$1554. The average health benefit payment per employee is \$6393 and the average employee cost per participant is \$2258. According to a survey conducted, companies annually spend an average of \$955 per employee on training and on average an employee receives 32 hours of training annually. The survey also showed that the average annual cost of unscheduled absenteeism is 660. According to this survey 35% of all unscheduled absenteeism is caused by personal illness.

Questions :

- Suppose that number of hours of training is uniformly distributed across all employees varying from 0 to 64 hours. What percentage of employees receives between 20 and 40 hours of training?
- What is the probability of randomly sampling 120 unscheduled absences and finding out that more than 50 were caused by personal illness?