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Total No. of Questions: 10

Total No. of Pages: 03

MBA/MBA (IB) (Sem. 1)
QUANTITATIVE TECHNIQUES
Subject Code: MBA-104
Paper ID: C0104

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. Section A contains SIX questions carrying FIVE marks each and students have to attempt any FOUR questions.
2. There are FOUR Sub-sections from Section B. Attempt any one question from each Sub-Section. Each question carries EIGHT marks.
3. Analyse the case in light of given facts and answer the given questions. The section carries EIGHT marks.

SECTION A

1.
 - a) Discuss the importance and limitations of statistics.
 - b) What is non-probability sampling? Give its advantages and disadvantages.
 - c) Using an example, explain the use of z test.
 - d) What is regression analysis? Explain the difference between correlation and regression analysis.
 - e) What is time series analysis? Explain its components.
 - f) Explain multiplication theorem of probability using examples.

SECTION B
SUBSECTION-I

2. The frequency distribution of weight in grams of mangoes of a given variety is given. Calculate the arithmetic mean and median.

Weight in grams	410-419	420-429	430-439	440-449	450-459	460-469	470-479
Number of mangoes	14	20	42	54	45	18	7

3. What is standard deviation? Explain its superiority over other methods of variation.

SUBSECTION-II

4. Discuss and compare probability and non-probability methods of sampling.
5. Nine candidates were imparted training and their performance was recorded once before and then after the training program. Test at 5% level, whether the training program was effective.

Training	Before Training	After Training
1	75	70
2	70	77
3	46	57
4	68	60
5	68	79
6	43	64
7	55	55
8	68	77
9	77	76

SUBSECTION-III

6. What are index numbers? Explain construction of price index numbers.
7. Two departmental managers ranked a few trainees according to their perceived abilities. The ranks are given as:

Trainees	A	B	C	D	E	F	G	H	I	K
Manager A	1	9	6	2	5	8	7	3	10	4
Manager B	3	10	8	1	7	5	6	2	9	4

Calculate an appropriate correlation coefficient to measure consistency in ranking.

SUBSECTION-IV

8. Explain the least squares method of trend analysis.
9. a) Explain normal curve
b) The I.Q.'s of army volunteers in a given year are normally distributed with mean =110 and standard deviation =10. The army wants to give advanced training to 20% of those recruits with the highest scores. What is the lowest I.Q. score acceptable for advanced training?

SECTION C

- 10.** Dr. K A Hamied incorporated the chemical, Industrial and Pharmaceutical laboratories which came to be known as Cipla. Cipla's products are categorized as prescription, animal health care products, OTC products, bulk drugs and technology services Over the years Cipla's sales have grown such that it now exports to countries in Europe, Australia, Asia etc in 2007, it took over Ranbaxy and GlaxoSmithKline to become the largest pharmaceutical company in the domestic market. The sales turnover of Cipla from 1989-2006 being given, calculate:

1. Average sales of Cipla Ltd for 1989-2006.
2. Median sales of Cipla Ltd for 1989-2006.

Year	Sales	Year	Sales
1989	971	1998	5170
1990	928	1999	6255
1991	1236	2000	7721
1992	1514	2001	10643
1993	1990	2002	14008
1994	2454	2003	15730
1995	2987	2004	20554
1996	3623	2005	24008
1997	4525	2006	31036