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Total No. of Pages : 02

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MBA (PIT) (Sem.–1)

QUANTITATIVE TECHNIQUES

Subject Code : MBA-104

M.Code : 51184

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A contains SIX questions carrying TWO marks each and students have to attempt ALL questions.**
2. **SECTION-B consists of FOUR questions each carrying TEN marks each and student has to attempt ALL questions.**
3. **SECTION-C is consist of ONE Question carrying EIGHT marks.**
4. **All Questions are Compulsory.**

SECTION-A

1) Write a short notes on the following :

a. What is mode?

b. Define sample size.

c. What is Z-test?

d. What is standard error?

e. Define Normal distribution.

f. Define time-series analysis.

SECTION-B

2. Calculate lower and upper quartile, third and 20th percentile from the following data :

Central Value	2.5	7.5	12.5	17.5	22.5
Frequency	7	18	25	30	20

3. You are given the following data of the number of lecturers, readers, and professors in a university :

Length of service	Lectures	Readers	Professors	Total
Less than 5 yrs.	2,000	250	50	2,300
5-10 yrs.	3,000	220	80	3,300
10-15 yrs.	1,500	170	30	1,700
More than 15 yrs.	880	80	40	1,000
Total	**7,380**	**720**	**200**	**8,300**

Work out how many lecturers, readers and professors would be selected from each category if :

a. We follow stratified proportionate sampling method and take 10% of the universe equivalent to the sample size,

b if the size of the sample is 10% of the universe but the lecturers, readers and professors are to be in the ration of 5: 3: 2 and weightage of the length of service is to be in the ratio of 4: 3: 2:1.

4. Define hypothesis testing. Discuss applications of z-test, f-test, t-test and chi-square test.

5. The following data relate to age of employees and the number of days they reported sick in a month.

Employee	1	2	3	4	5	6	7	8	9	10
Age (X)	30	32	35	40	48	50	52	55	57	61
Sick Days (Y)	1	0	2	5	2	4	6	5	7	8

Calculate Karl Pearson's Coefficient of Correlation and interpret it.

SECTION-C

6. **Solve the following case :**

Eight coins are tossed at a time 256 times. Number of heads observed at throw is recorded and the results are given below. Find the expected frequencies. What are the theoretical values of mean and standard deviation?

No. of heads at a throw	0	1	2	3	4	5	6	7	8
Frequency	2	6	30	52	67	56	32	10	1

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.