DEPARTMENT OF COMMERCE

QUESTION BANK FOR B COM (Computer Application & Taxation) Semester III

QUANTITATIVE TECHNIQUES FOR BUSINESS – I

MODULE I INTRODUCTION TO STATISTICS
CO1- IDENTIFY STATISTICAL THEORY AND ITS APPLICATION
(Apply Level-)

SECTION A

1. Define statistics as Method.
2. Define Statistics in the singular sense.
3. Define Statistics in the plural sense.
4. Mention the limitations of Statistics.
5. What is Descriptive statistics?
6. What is inferential statistics?
7. What is applied statistics?
8. Define statistics as Data.
9. What do you mean by distrust of statistics?
10. What is Empirical Analysis?

SECTION B

11. Identify the importance of statistics in planning.
12. What do you mean by distrust of statistics?
13. Identify the characteristics of statistics.
14. "All numerically expressed data are statistics.' Comment on the statement.

15. "Statistics are like clay of which one can make God or Devil as one likes". Comment
16. Explain the Distrust of statistics and state how statistics can be misused?
17. Explain the importance (utilities) of statistics in the modern world
18. Distinguish between Statistical Data and Statistical Method.

SECTION C

19. Explain the important functions of statistics.
20. Examine the characteristics of statistics.
21. Discuss the limitations of statistics
22. Evaluate the reasons for distrust of statistics.
23. Identify the role of Statistics in Business and Commerce

MODULE 2 STATISTICAL SURVEY
CO2- CONSTRUCT AND DESIGN STATISTICAL SURVEY
(Apply Level)

SECTION A

1. What is a statistical survey?
2. What is a statistical unit?
3. What is primary data?
4. What is secondary data?
5. Explain Sampling.
6. What is population?
7. What is random sampling?
8. What is a Simple unit?
9. What is a Composite unit?

10. What is a Hypothetical unit?

SECTION B

11. What is a Table? What are the essential parts of a Table?
12. Distinguish between Classification and Tabulation.
13. Distinguish between Primary and Secondary data.
14. Distinguish between Population and sample.
15. Distinguish between random sampling and non-random sampling.
16. What are the different methods of random sampling?
17. What are the different methods of non-random sampling?
18. What is the difference between a questionnaire and schedule?
19. What are the advantages of questionnaire method of data collection?

SECTION C

20. 20 What is Primary Data? What are the methods of collecting primary data? Explain.
21. Explain the merits and demerits of a questionnaire.
22. What is sampling? What are the different methods for selecting samples? Explain.

MODULE 3 UNI-VARIATE DATA ANALYSIS-I
CO3- EXAMINE CENTRAL TENDENCY.
(Analyse Level)

SECTION A

1. What is Geometric Mean?
2. What are the different types of averages?

3. What is central tendency?
4. Define median.
5. What are quartiles?
6. What s mode?
7. What is Harmonic mean?
8. In a skewed distribution the values of mode and mean are 32 and 35 respectively. Find the median.
9. Define Mean
10. Find the mean of 8, 5, 7, 10, 15, 21
11. Find the median of the set of numbers: 1, 2, 3 , 4, 5, 6, 7, 8, 9 and 10.

SECTION B

12. Examine the mean, median and mode for the following list of values: 13, 18, 13, 14, 13, 16, 14, 21, 13
13. Calculate median from the following:
    38, 24, 45, 50, 85, 60, 95, 40, 56, 63
14. Find median from the following

Marks (midvalue)	10	15	20	25	30	35	40
No: of students	3	7	10	15	8	5	2

15. Explain how median can be located graphically.
16. Following are the daily wages of ten workers of a firm:

    120,130, 140,110,160,150,190,180,170,200. Find out median, quartiles, 6^{th} decile and 40^{th} percentile.

17. From the following data relating to flipping of. a die, find out the value of median.

Face of die	1	2	3	4	5	6
Frequency	1	8	30	25	27	62

18. The table given below represents the frequency-distribution of ages for Standard 1st students.

Ages	4	5	6	7
Number of Students	6	4	10	8

Measure the Harmonic Mean of the given class.

19. Given the following frequency distribution, Inspect the arithmetic mean

Marks:	64	63	62	61	60	59
Number of Students:	8	18	12	9	7	6

20. The mean annual salary paid to all workers in a factory was Rs. 660. The mean annual salary paid to male and female workers were Rs. 620 and Rs.520 respectively. Obtain the percentage of male and female workers.

21. Examine the merits and demerits of mean.

22. Examine the merits and demerits of median.

23. From the following calculate geometric mean

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No: of students	5	13	7	10	5	10

24. There were 500 workers working in a factory. The mean wages was calculated as Rs. 200. Later on it was discovered that the wages of two workers were misread as 180 and 20 instead of 80 and 220. Find the correct mean.

SECTION C

25. Compute Arithmetic Mean.

Temperature (C)	-40 to -30	-30 t0-20	-20 to-10	-10 to 0
No. fo Days	8	15	20	16

0 - 10	10-20	20-30	30-40
10	8	7	5

26. Calculate the value of mode from the following:

wages	<10	<20	<30	<40	<50	<60	<70	<80	<90
No of workers	4	13	30	60	80	90	95	98	100

27. From the following series locate the values of the median, quartiles, 4th decile and 60th percentile. Also comment on each of the result.

Marks	Below 10	10-20	20-30	30-40	40-50	50-60	60-70	70 and above
No of students	13	17	50	60	55	45	23	7

MODULE 4 UNI-VARIATE DATA ANALYSIS-II
CO4- ASSESS THE CONCEPTS OF DISPERSION.
(Evaluate Level)

SECTION A

1. Define range.

2. Define mean deviation.
3. What is variance?
4. Define dispersion.
5. What is skewness?
6. What is positive skewness?
7. What is negative skewness?
8. Define moments.
9. Define kurtosis.
10. Define Standard Deviation.

SECTION B

11. Explain how moments are used to measure skewness and kurtosis.
12. Explain raw moments and central moments and how raw moments can be converted into central moments.
13. Explain the merits and demerits of mean deviation.
14. Distinguish between mean deviation and standard deviation.
15. Using quartiles compare the two series and state which is more variable

    Series A: 30 38 39 5 10 27 29 43 56 86 90

    Series B: 28 35 39 40 10 15 27 28 45 72 89

16. Calculate mean deviation about median of the number of telephone calls received at an exchange.

No of calls	0	1	2	3	4	5	6	7
freq	14	21	25	43	51	40	39	12

17. From the following data calculate standard deviation and coefficient of variation.

Roll	1	2	3	4	5	6	7	8	9	10

No										
Marks	50	45	60	44	40	60	65	50	56	70

18. Samples of size 60 and 40 have means 100 and 150 with standard deviations 70 and 80 respectively Calculate SD of the combined group.

19. The yield of wheat and rice per acre for 10 districts of a state is as under:

District	1	2	3	4	5	6	7	8	9	10
Wheat	12	10	15	19	21	16	18	9	25	10
Rice	22	29	12	23	18	15	12	34	18	12

Calculate for each crop,
(i) Range
(ii) Q.D.
(iii) Mean Deviation about Mean

SECTION C

20. The scores of two batsmen Lara and Sachin in 10 innings during a certain season are as follows:

Sachin:	30,	90	70,	60	,40,	120,	20	,5,	3,	40
Lara:	60,	80,	100	,50,	70,	30,	180,	60,	90	,75

Who is a better run-getter? Who is more consistent?

21. Particulars regarding the income of two towns are given below:

	Town A	Town B
Number of people	600	500
Average income	175	186
variance	100	81

1. In which town is the variation in income greater?
2. Which town mobilises larger amount as income?
3. What is the combined standard deviation of the two towns put together

22. The following are the marks obtained by two students, Ram and Shyam, in 10 unit tests. Find out (1) Who is more intelligent and (2) Who is more consistent?

Ram	44	80	76	48	52	72	68	56	60	54
Shyam	48	75	54	60	63	69	72	54	57	66

23. Calculate mean deviation from mean and its coefficient:

Age (above)	0	10	20	30	40	50	60	70
No: of patients	200	180	150	100	50	30	10	0

MODULE 5 INTERPOLATION AND EXTRAPOLATION
CO5- UTILISE INTERPOLATION AND EXTRAPOLATION CONCEPTS
(Apply Level)

SECTION A

1. Define Extrapolation.
2. What are the utilities of Interpolation technique?
3. What are the basic assumptions of Interpolation techniques?
4. What are the merits and demerits of graphic method of Interpolation?
5. State Newton's Method of Advancing differences as an Interpolation techniques.
6. What are the conditions to be fulfilled while applying Binomial Interpolation?
7. Define Interpolation.
8. What is the significance of Lagrange's Method of Interpolation?
9. Distinguish between interpolation and extrapolation
10. What is mean by Inverse interpolation?

SECTION B

11. The following are the annual premium charged by LIC of India for a poly of Rs 10000.Calculate the premium payable at the age of 26 by using Newton's formula.

Age	20	25	30	35	40
Premium	230	260	300	350	420

12. What is the significance of lagrange's method of interpolation?
13. The expectation of life at different ages of males in India is given. Use Newton's formula and estimate the expectation of life at the age of 32 years.

Age	20	25	30	35	40
Expected life	33	29.8	26.6	23.5	20.5

14. Construct the difference table from the following values of f(x)

X	5	10	15	20	25
F(X)	48	58	80	131	192

15. Explain the uses and limitations of interpolation.
16. Explain the methods of interpolation.
17. Determine the number of criminals under 35years of age

Age	25	30	40	50
%of criminals	52	67.3	84.1	94.4

18. Estimate the sales during the year 1965

Year	1950	1955	1960	1970
sales	250	285	328	440

SECTION C

19. The following table gives the expectation of life at different ages, having two missing values. Estimate the missing values by using Binomial Expansion

X	5	6	9	11
Y	12	10	14	16

Method

Age	10	15	20	25	30	35
Expected life	35.4	?	29.2	?	23.2	20.4

20. The value of X and Y are given below. Find the value of Y when X=10

21. Using Newton's backward interpolation formula. Find f(x) when x= 7

X	2	4	6	8
F(x)	5	10	36	59

22. The following table gives the value of acertain function y= f(x) for equidistant value of x

X	14	20	26	32	38	44
Y	110	192	308	464	666	920