DEPARTMENT OF MANAGEMENT STUDIES
QUESTION BANK
19MBA02 – BUSINESS STATISTICS
UNIT – 1
Part-A

1. Define Statistics.
2. Write the functions of Statistics.
3. List out the limitations of statistics.
4. List out the types of Statistics.
5. What is meant by measures of central tendency?
6. What is meant by Arithmetic Mean?
7. Find the range
   15,20,25,30,32,47,67,22
8. Write down the formulas:
   Mean – direct method , deviation method and step-deviation method.
9. Define Median.
10. Write the formula for median

Part-B

1. i) Explain the use of Statistics for a man of business.
   ii) Write short notes on:
       (a) Functions & Importance of statistics.
       (b) Limitations of Statistics.
       (c) Distrust of Statistics.

2. For the following frequency table, find the mean

Class:	100-120	120-140	140-160	160-180	180-200	200-220	220-240
Frequency:	10	8	4	4	3	1	2

3. In a study on patients, the following data were obtained. Find the arithmetic mean

Age (in yrs)	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89
No.of. cases	1	0	1	10	17	38	9	3

4. The following table gives the weekly expenditure of 100 families. Find the median weekly expenditure.

Weekly Expenditure (in Rs)	0-10	10-20	20-30	39-40	40-50
No.of. cases	14	23	27	21	15

5. Compute median from the following data:

Mid Values	115	125	135	145	155	165	175	185	195
No.of. cases	6	25	48	72	116	60	38	22	3

UNIT -2
Part-A

1. Define population.
2. Define sample.
3. What is meant by Probability and non Probability Sampling?
4. List out the techniques of sampling.
5. What are the objectives of sampling?
6. What do you mean by systematic sampling?
7. What is meant by convenience sampling?
8. What is a sampling and non sampling error?
9. Define sampling Distribution.
10. Differentiate between sample and population

Part-B
1. i) What is sampling? Explain various types of sampling methods and their applications.
   ii)Explain any four non-probability sampling methods.
2. i)Describe different techniques of probability sampling.
   ii)Explain various techniques of sampling. Why is sampling design important in research?
3. i)Compare and contrast the meaning and nature of observational and survey methods of data collection.
   ii)Examine the merits of the observational method in collecting data.
4. i) Discuss the method of observation in research, giving its merits & limitations.
   ii) Discuss the merits and demerits of observational and survey methods of data collection.
5. i)Explain the different methods of collecting primary data.
   ii)Explain the features of personal and mail surveys.

UNIT – 3
Part-A

1. What is hypothesis?
2. What is Null hypothesis?
3. What is Alternative hypothesis?
4. Define Type I and Type II error.
5. What do you meant by level of significance?
6. What is critical value?
7. Explain the procedure for testing of hypothesis.
8. Write the uses of Chi- square test.
9. What is meant by ANOVA
10. Differentiate between Large Sample and Small Sample.

Part-B

1. Explain in detail the procedure for testing hypothesis.
2. A personal Manager is interested in trying to determine whether absenteeism is greater on one day of the week than on another day of the week. He has the following record for the past years.

Days of Week: Mon Tue   Wed Thurs Fri
No. of absentees: 66   57   54   48   75

       Test whether absenteeism is uniformly distributed over the week.

3. The following table gives the yield on 15 sample fields under three varieties of seed (Viz., A, B, C):

A	B	C
20	18	25
21	20	28
23	17	22
16	25	28
20	15	32

Test at 5% level of significance whether the average yields of land under different varieties of seed show significance differences.

4. Set up ANOVA for the following per hectare yield for three varieties of wheat each grown on four plots

Plot of Lands	Variety of wheat			Total
	A_1	A_2	A_3	
1	6	5	5	16
2	7	5	4	16
3	3	3	3	9
4	8	7	4	19

5. A farmer applied three types of fertilizers on 4 separate plots. The figure on yield per acre are tabulated below

Fertilizers Plots	Yield				Total
	A	B	C	D	
Nitrogen	6	4	8	6	24
Potash	7	6	6	9	28
Phosphates	8	5	10	9	32

       Find out if the plots are materially different in fertility. as also, if the three fertilizers make any material difference in yields.

UNIT- 4

Part-A

1. Define correlation.
2. What is the significance of correlation?
3. What is positive correlation?
4. What is negative correlation?
5. What do you meant by linear correlation?

6. What do you meant by non-linear correlation?
7. What are the methods used in correlation?
8. What do you meant by scatter diagram?
9. Define the term regression.
10. Difference between correlation and Regression?

Part-B

1. Find the coefficient of correlation between the heights of brothers and sisters from the following data:

Height of brothers(in cm)	65	66	67	68	69	70	71
Height of sisters(in cm)	67	68	66	69	72	72	69

2. Calculate the coefficient of correlation for the following pairs of values of x and y:

x	17	19	21	26	20	28	26	27
y	23	27	25	26	27	25	30	33

3. Find the correlation coefficient between the income and expenditure of a wage earner and comment on the result:

Month	Jan	Feb	Mar	Apr	May	June	July
Income	46	54	56	56	58	60	62
Expenditure	36	40	44	54	42	58	54

4. From the following data, obtain the two regression equations using method of least square.

Sales	91	97	108	121	67	124	51	73	111	57
Purchases	71	75	69	97	70	91	39	61	80	47

5. The heights of a sample of 10 fathers and their eldest sons are given below (to the nearest cm):

Height of father(X)	170	167	162	163	167	166	169	171	164	165
Height of son (Y)	168	167	166	166	168	165	168	170	165	168

(i) Compute the correlation coefficient Y.
(ii) Find the regression of Y on X.

UNIT-5
Part - A

1. Define time series.
2. What is the importance of time series?
3. State the various components of time series?
4. What do you meant by trend?
5. What do you meant by seasonal variations?

6. What do you meant by cyclical variations?
7. What do you meant by irregular variations?
8. What is semi-averages?
9. What is moving average?
10. Define forecasting.

Part-B

1. The production of a sugar factory is given below in '000 quintals

Year	1990	1991	1992	1993	1994	1995	1996
Production	60	72	75	65	80	85	95

    (i) Fit a straight line trend to these figures.
    (ii) Plot these figures on a graph & show the trend line.

2. Apply the method of semi-averages to depict the long –term tendency of the following data and estimate the value for 2006:

Year	Production	Year	Production
1996	40	2000	51
1997	44	2001	50
1998	42	2002	54
1999	48	2003	56

3. The production of pig iron during 1997-03 is given below:

Year	Production (lakh tonnes)	Year	Production (lakh)
1997	48	2001	45
1998	50	2002	41
1999	58	2003	49
2000	52		

(i) Fit a straight line trend to these figures.
(ii) Draw the trend line on the graph.

4. i)Describe step by step, the moving average method of determining seasonal index.
   ii)Explain briefly the various methods of determining trend in a time series.

5. You are given below the figures of annual production(in thousand tones) of a sugar factory:

Year	1981	1982	1983	1984	1985	1986	1987
Production	70	75	90	91	95	98	100

(i)   Fit a straight line trend by the method of least squares and tabulate the trend values.
(ii)   Estimate the likely production for the year 1990.
(iii)   Convert the annual trend equation into the monthly trend equation.