Manmohan Technical University Office of the Controller of Examinations **Exam Year: 2082, Poush (Model Question)**	**Exam Roll:** …… Exam Roll in words: ……	
School: School of Applied Science, Technology and Law	Level: Bachelor	Invigilator's Sign: ……
Program: BBA.LLB	Year/Part: I/II	Superintendent's Sign: ……
Subject: Business Statistics (BLAW 207)		Code No. ……

GROUP A *(Multiple-Choice Questions)* **[10x1=10]** **Time: 20 Minutes**

i. *This group contains 10 multiple-choice questions (MCQs).*
ii. *Answers must be marked on the MCQ Answer Sheet.*
iii. *You may use the main answer sheet for rough work.*
iv. *Marks will not be awarded for answers with cutting, erasing, overwriting, or multiple shaded options.*
v. *The MCQ question paper must be returned along with the MCQ answer sheet.*

Code No.:

1. Data that can be measured on a numerical scale, such as height or weight, is classified as:
   A) Qualitative data
   B) Quantitative data
   C) Nominal data
   D) Ordinal data

2. Which of the following is an example of discrete quantitative data?
   A) Height of students
   B) Number of books in a library
   C) Temperature in degrees
   D) Time taken to run a mile

3. In a dataset, the median is:
   A) The most frequent value
   B) The middle value when data is ordered
   C) The sum divided by the number of observations
   D) The difference between max and min

4. The simplest measure of dispersion is:
   A) Variance
   B) Standard deviation
   C) Range
   D) Interquartile range

5. Mesokurtic distribution is similar to:
   A) Uniform distribution
   B) Normal distribution
   C) Skewed distribution
   D) Bimodal distribution

6 Pearson's correlation coefficient ranges from:
   A) 0 to 1
   B) −1 to 1
   C) $-\infty$ to ∞
   D) 0 to ∞

7 The probability of an impossible event is
   a) 1
   b) 0
   c) Between 0 and 1
   d) Greater than 1

8 For a binomial distribution, p + q =
   a) 0
   b) 1
   c) 2
   d) p × q

9 The area under a normal curve is
   a) 0
   b) 0.5
   c) 1
   d) Infinity

10 Interval estimation provides
   a) Single number
   b) Confidence level
   c) Range of values
   d) Parameter value

Multiple Choice Questions' Answer Sheet

Marks Secured: _____

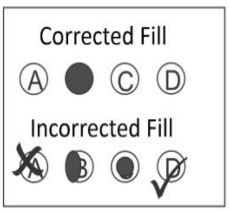
In Words: _____

Examiner's Sign: _____ Date: _____

Scrutinizer's Marks: _____

In Words: _____

Scrutinizer's Sign: _____ Date: _____



1.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	6.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
2.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	7.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
3.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	8.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
4.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	9.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
5.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	10.	Ⓐ	Ⓑ	Ⓒ	Ⓓ

Manmohan Technical University
Office of the Controller of Examinations
Exam Year: 2082, Mansir (Model Question)

School: School of Applied Science, Technology and Law	Level: Bachelor	Time: 3 Hours
Program: BBA.LLB	Year/Part: II/I	Full Marks: 60
Subject: Business Statistics (BLAW 207)		Pass Marks: 30

- ✓ *Candidates are required to give their answers in their own words as far as practicable.*
- ✓ *The figures in the margin indicate **Full Marks**.*
- ✓ *Assume suitable data if necessary.*

GROUP A *(Multiple-Choice Questions are provided on separate sheet)* **[10×1=10]**

GROUP B ***(****Descriptive Answer Questions - **Attempt ALL Questions)*** **[8×4=32]**

11 Following is the IQ scores in the IQ test

IQ Score	10-20	20-30	30-40	40-50	50-60
No. of Students	20	25	30	7	3

Plot the following:

a. Histogram

b. Frequency polygon

12 The average income of 100 persons from village A is Rs. 3,500 with standard deviation 200 and that of 150 persons in village B is Rs. 4,000 with standard deviation 300. What is the average income and standard deviation of both the villages put together?

13 From the following data calculate quartile deviation and its relative measure of dispersion

Variable (X)	5	7	9	11	13	15	17	19
Frequency	5	44	60	75	95	82	24	4

14 The data below represent the age (in years) of 20 patients admitted in a public hospital.

24, 26, 27, 28, 28, 29, 30, 30, 31, 32, 32, 33, 34, 35, 36, 38, 40, 41, 42.

a. Calculate the five-number summary.

b. Construct box-and-whisker plot.

15 In a research report the following information are given:

Number of observation	9
Sum of the product between two variables (X) and (Y)	335
Sum of square of income (X)	412
Sum of square of expenditure (Y)	275
Mean income	Rs. 6
Mean Expenditure	Rs. 5

Check whether the relationship between income and expenditure is positive or negative.

16 In an examination 62% of the students have passed in Sociology, 35% of the students have passed in Basic Mathematics. A student is selected at random. What is the probability that the student has passed in Sociology given that he passed in Basic Mathematics?

17 If the mean of binomial distribution is 0.4 and its standard deviation is0.6, find the probability of at least one success.

Or,

Calculate mean and variance of a Poisson variable X, if P(X = 4) = P(X = 5)

18 In a normal distribution with mean (μ) = 100 and standard deviation (σ) = 10, what is the probability that (a) X>112 (b) 75<X<125?

19 Define Stratified Sampling with example.

Or,

In a study of time and motion in a factory, the supervisor estimates the S.D. to be 0.95 seconds. If you want to be 95% confident that the error will not exceed 0.01 second, what should be the size of the sample to estimate population mean?

20 A sample of 100 students is taken from a large population. The mean height of those students is 64 inches and standard deviation is 4 inches. Can it reasonably be regarded that in the population, mean height is 66 inches?

GROUP C *(Analytical Answer Questions - **Attempt ALL Questions**)* **[2×9=18]**

1. The data on sales and promotion expenditures on a newly launched product for 6 years are given below:

Year	Sales (in Rs. 00000)	Promotion expenses (Rs. 000)
2006	16	4
2007	20	4
2008	18	6
2009	20	10
2010	10	4
2011	22	12

a. Find out if there exists any relationship between sales and promotional expenses and interpret the result.
b. Calculate the two regression coefficients from the above data of sales and expenses.
c. Develop the estimating equation that describes the effect of promotion expenses on sales.
d. Estimate the expected sales if the promotional expenses is Rs. 20,000.

2. Calculate theoretical frequencies from the following by using binomial probability law.

Number of Success(X)	0	1	2	3	4	5
Frequency (f)	150	500	960	900	500	190

Assume that the probability of success in each case is 0.5

Or,

Fit a Poisson distribution for the following frequency distribution.

No. of Defects (X)	0	1	2	3	4
Frequency (f)	11	65	19	3	2

∞∞ ***The End*** ∞