(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2024 ONLY)

24UBM1A1

REG.NO.:

N.G.M.COLLEGE (AUTONOMOUS):POLLACHI

END-OF-SEMESTER EXAMINATIONS : NOVEMBER-2024

COURSE NAME: B.B.A **MAXIMUMMARKS:75**

SEMESTER: I **TIME:3HOURS**

PART– III
MATHEMATICALTECHNIQUES-I

SECTION – A (10X1=10MARKS)

ANSWER THE FOLLOWING QUESTIONS.

MULTIPLE CHOICE QUESTIONS. **K1**

1. Which of the following is the correct definition of a matrix?
   a) An algebraic expression b) A type of vector
   c) A geometric figure d) An array of numbers arranged in rows and columns
2. The term "data" came from the Latin root term-_____.
   a) Detem b) Datam c) Datum d) Data
3. What is the median for 14,13,18,16,and 20?
   a)16 b)20 c)15 d)17
4. For appositively skewed distribution, mean is always:_____.
   a) Less than the median b) Less than the mode c) Greater than the mode d) Difficult to tell
5. Who introduced the term' regression'?
   a) YaLun Chou b) Croxton and Cowden c) KarlPearson D) FrancisGalton

ANSWERTHEFOLLOWINGINONE(OR)TWO SENTENCES. **K2**

6. Write the formula for simple interest and compound interest.
7. Explain the limitation of statistics.
8. What is Arithmetic Mean?
9. What is scattered diagram method?
10. Define correlation.

SECTION – B (5X5=25MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. K3

11. a) The difference in simple interest and compound interest on a certain sum of money in 2 Years at10%p.a. isRs.50.Find the Principal.

(OR)

b) Explain i) Commutative Law of Addition.

ii) Left Distributive Law of Matrix Multiplication.

(CONTD….2)

12.a) Distinguish between Primary Data and Secondary Data

(OR)

b) Explain the types of table.

13. a) Write the Merits & Demerits of Arithmetic Mean, Geometric Mean

(OR)

b) The temperature in F on 20 days during the month of June was as follows:

$^{\circ}F$	70	76	76	74	70	70	72	74	78	80	74	74	78	76	78	76	74	78	80	76

What is the mode of the temperatures for the month of June?

14.a) From the marks secured by120students in Section A and B of a class, the Following measures are obtained:
Section A: X = 46.83;S.D = 14.8;Mode =51.67
Section B:X=47.83;S.D=14.8;Mode=47.07
Determine which distribution of marks is more skewed.

(OR)

b) Compute Pearsons coefficient of correlation between advertisement cost and sales as per the data given below:

Advertisement Cost1000's	39	65	62	90	82	75	25	98	36	78
Salesin lakhs	47	53	58	86	62	68	60	91	51	84

15. a) Find the means of *X* and *Y* variables and the coefficient of correlation between them from the following two regression equations:

$2Y–X–50=0$

$3Y–2X–10= 0.$

(OR)

b) For 5 pairs of observations the following results are obtained
$\sum X=15, \sum Y=25, \sum X2=55, \sum Y2 =135, \sum XY=83$ Find the equation of the lines of regression and estimate the value of *X*on the first line when *Y*=12 and value of *Y* on the second line if *X*=8.

SECTION – C (5X8=40MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

16.a) $A=\begin{bmatrix} 4 & 8 \\ 3 & 7 \end{bmatrix}$, $B=\begin{bmatrix} 1 & 0 \\ 5 & 2 \end{bmatrix}$ Find A+B, A-B, A*B

(OR)

b) A person lends$15,000 at an annual interest rateof10%. After 5years, he repays the loan and finds that the total amount paid is $21,000. What was the effective rate of interest if some part of the loan was lent at 8% and the rest at 12%?

17.a) Discuss the different methods of collecting primary data, its merits and demerits and brief On the ethical issues in collecting data.

(OR)

b) Examine the classification of statistical data.

(CONTD….3)

18.a) Consider the following frequency distribution. Calculate the mean weight of students.

WEIGHT(IN KG)	31-35	36–40	41–45	46–50	51–55	56–60	61–65	66–70	71–75
Number of Students	9	6	15	3	1	2	2	1	1

(OR)

b) The following data is obtained from the survey. Compute H.M

Speed of the car	130	135	140	145	150
No of cars	3	4	8	9	2

19.a) Calculate SD for the data:x:32, 51, 23, 46, 20, 78, 57, 56, 57, 30

(OR)

b) What is ascatter diagram? Explain the types of correlation with graph. Mention its uses.

20.a) Calculate the regression co efficient and obtain the lines of regression for the Following data.

X	1	2	3	4	5	6	7
Y	9	8	10	12	11	13	14

(OR)

b) Discuss the difference between Correlation & Regression.

****