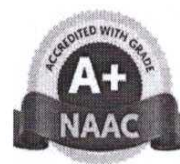


SHRI GNANAMBICA DEGREE COLLEGE: MADANAPALLE



(AUTONOMOUS)
COURSE-8: BUSINESS STATISTICS AND MATHEMATICS
SEMESTER III
(W.E.F.2024 - 25)
Program: BBA Honors



Hours per week: 4

Credits: 4

Course Objectives:

- Understand the importance of Statistics in real world business applications.
- Formulate complete, concise and correct mathematical proofs.
- Frame problems using multiple mathematical and statistical tools, measuring relationships by using standard techniques.
- Build and assess data-based models, learn and apply the statistical tools to business.
- Create quantitative models to solve real world problems in appropriate contexts.

UNIT I: INTRODUCTION TO BUSINESS STATISTICS

Meaning, definition, functions, importance and limitations of Statistics in business context. Methods of Data Collection–Primary and Secondary data. Frequency distribution, Diagram and graphic representation of data.

UNITII: MEASURES OF CENTRAL TENDENCY AND DISPERSION

Definition, objectives and characteristics of Measures of Central Tendency – Types of Averages – Arithmetic Mean, Geometric Mean, Harmonic Mean. Median, Mode, Quartiles, Deciles and percentiles. Properties of averages and their application. Meaning, definitions, objectives of Dispersion, Range Quartile Deviation, Mean deviation, Standard Deviation. Co-efficient of variation. Definition and objectives of Skewness–Karl Pearson's and Bowle's measures of skewness.

UNIT III: MEASURES OF CORRELATION

Meaning, Definition and use of correlation. Types of Correlation Karl Pearson's correlation coefficient, Spearman's Rank correlation. Probable error.

UNITIV: SET THEORY

Definition of Set- Types of Sets-Union of Sets-Intersection of Sets-Venn diagrams Operations on Sets-complement of Set-Distributive Laws-De'Morgan's Laws.

UNITV: MATRIX

Meaning and operations, Matrix Algebra. Types of matrices, Matrix addition, Matrix Multiplication. Matrix Determinants, Minors and Co-factors, Matrix inversion.

Reference Books:

1. Sivayya K. V. and Satya Rao, Business Mathematics, Saradhi Publications, Guntur.
2. Sancheti and Kapoor V K., Business Mathematics, Sultan Chand & Sons, New Delhi.
3. D.N.Elhance: Fundamental of Statistics, Kitab Mahal, Allahabad.
4. Gupta S.C. Fundamentals of Business Statistics, Sultan Chand, New Delhi.
5. Aggarwal, Business Statistics, Kalyani Publishers, Hyderabad.
6. Reddy CR, Business Statistics, Deep & Deep Publications, New Delhi.



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(AUTONOMOUS)

COURSE-8: BUSINESS STATISTICS AND MATHEMATICS

SEMESTER III

(W.E.F.2024 - 25)

Program: BBA Honors

Question Paper Blue print

Time : 3 Hrs

Max Marks: 70

Part-A

Answer any **FOUR** of the following questions. Each question carries FIVE marks $4 \times 5 = 20$

1. Question
2. Question
3. Question
4. Question
5. Question
6. Question
7. Question
8. Question

Answer any Five of the following choosing one from each unit

$5 \times 10 = 50$ Marks

Unit-I

9. Question
or
10. Question

Unit-II

11. Question
or
12. Question

Unit-III

13. Question
or
14. Question

Unit-IV

15. Question
or
16. Question

Unit-V

17. Question
or
18. Question



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COURSE-8: BUSINESS STATISTICS AND MATHEMATICS

SEMESTER III

(W.E.F.2024 - 25)

Program: BBA Honors

Model Question Paper

Time : 3 Hrs

Max Marks: 70

Part-A

Answer any **FOUR** of the following questions. Each question carries FIVE marks **4×5=20**

1. Define statistics. Give advantages and limitations of statistics.
2. Explain(a)Questionnaire(b)Schedule
3. Calculate Harmonic mean from the following data.10, 50,30,20,10,20,70,30
4. Calculate Range and co-efficient of range from the following data 31, 37, 35, 38, 42, 23, 17, 18, 35, 25, 35, 29
5. Standard Deviation.
6. Probable Error.
7. Explain representation of sets.
8. Find the inverse of the matrix $A = \begin{bmatrix} 1 & 2 \\ -3 & 0 \end{bmatrix}$

Answer any Five of the following choosing one from each unit

5x10=50Marks

9. Define Secondary data. Explain sources of secondary data.
10. Draw a Histogram and frequency polygon from the following data.

Daily Wages in Rs.	30-40	40-50	50-60	60-70	70-80	80-90
Number Of Workers	10	20	40	16	8	6

11. Calculate Mean, Median, and Mode from the following data.

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	12	16	6	7	9

12. Calculate Karlpearson's and Bowly's coefficient of skewness from the following data.

Class Interval	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Frequency	34	40	48	100	125	80	50	22



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13. Find Karl Pearson's coefficient of correlation between the values of X and Y given data:

X	128	129	130	140	132	135	125	130	132	135
Y	80	89	90	95	96	94	80	100	96	100

14. Compute the rank correlation coefficient for the following data of the marks obtained by 8 students in the Commerce and Mathematics.

Marks in Commerce	15	20	28	12	40	60	20	80
Marks in Mathematics	40	30	50	30	20	10	30	60

15. State and prove distributive and De-Morgan's laws.

16. If the universal set is given by $U = \{1, 2, 3, 4, 5, 6\}$, and $A = \{1, 2\}$, $B = \{2, 4, 5\}$, $C = \{1, 5, 6\}$ are three sets, find the following sets: i) $A \cup B$ ii) $A \cap B$ iii) A^c iv) B^c v) Verify De-Morgan's law i.e., $(A \cup B)^c = A^c \cap B^c$ vi) Verify distributive law i.e., $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$

17. Calculate the inverse of the matrix

$$A = \begin{bmatrix} 2 & 4 & -6 \\ 7 & 3 & 5 \\ 1 & -2 & 4 \end{bmatrix}$$

18. If $A = \begin{bmatrix} 2 & 3 & 4 \\ 3 & 5 & 6 \\ 4 & 5 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 2 & 1 \\ -1 & 2 & 1 \\ 3 & 2 & 1 \end{bmatrix}$ then

Find (i) AB (ii) $A+B$ (iii) $A-B$ (iv) $(A+B)^2$ (v) $(A-B)^2$ (vi) $A^2 + B^2$



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