

D 11759

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Name.....

Reg. No.....

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021**

B.B.A.

BBA 3A 11—BASIC NUMERICAL SKILLS

(2014—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all questions.**Each question carries 1 mark.*

I. Choose the correct answer :

- 1 The set with no element is denoted by _____.
 - a) 0.
 - b) \emptyset .
 - c) A.
 - d) \$.
- 2 If A and B are disjoint sets, then $A \cap B$ is _____.
 - a) 0.
 - b) A.
 - c) B.
 - d) \emptyset .
- 3 Which of the following measure possesses mathematical properties ?
 - a) AM.
 - b) GM.
 - c) HM.
 - d) All of these.
- 4 Index Number is a _____.
 - a) Measure of relative changes.
 - b) A special type of an average.
 - c) A percentage relative.
 - d) All the above.
- 5 Skewness refers to _____.
 - a) Flatness.
 - b) Peakedness.
 - c) Symmetry.
 - d) Asymmetry.

Turn over

II. Fill in the blanks :

- 6 Find mode 23, 35, 28, 42, 62, 53, 35, 28, 42, 35, 23, 42, 3 _____.
- 7 A matrix in which every element is zero is called _____.
- 8 Row headings of a table is called _____.
- 9 Find the 15th terms of the sequence 20, 15, 10 _____.
- 10 The solution of the equation $4 = \frac{2}{3} \times$ _____.

(10 × 1 = 10 marks)

Part B

Answer any **eight** questions.

Each question carries 2 marks.

- 11 If $A = \{a, b, c, d\}$; $B = \{d, e, f, g\}$; $C = \{h, i, j, k\}$. Prove that $(A - B) \cap (A - C) = A - (B \cup C)$.
- 12 Represent $A \cap B'$ by using Venn diagram.
- 13 If $A = \{1, 2\}$; $B = \{4, 5\}$. Find $B \times A$.
- 14 Find $2A - 3B$

$$A = \begin{pmatrix} 2 & 3 & 1 \\ 0 & -1 & 5 \end{pmatrix}; B = \begin{pmatrix} 1 & 2 & -1 \\ 0 & -1 & 3 \end{pmatrix}.$$

- 15 Find the value of determinants :

$$A = \begin{vmatrix} 1 & 5 & 2 \\ 3 & 1 & 2 \\ 6 & 2 & 5 \end{vmatrix}.$$

- 16 Solve the equation $2x^2 + 8x + 8 = 0$.

- 17 Solve $2x - y = 5$
 $3x - 4y = 10$.

- 18 In an arithmetic progression the sum of the first 10 terms is 400 and the sum of the next ten terms is 1000. Find the common difference and the first term.
- 19 Find the number of years a sum of Rs. 10,000 will take to become 19,600 if the rate of interest is 8 %.
- 20 What do you mean by cartogram ?

(8 × 2 = 16 marks)

Part C*Answer any **six** questions.**Each question carries 4 marks.*

- 21 Find Karl Pearson's co-efficient of skewness for the given values :
- 25, 18, 32, 20, 25, 48, 72, 24, 50, 25
- 22 Describe the steps in Statistical investigation.
- 23 With Median as base calculate Mean Deviation and compare the variability of the two series :

Series A : 3484, 4572, 4124, 3682, 5624, 4388, 3680, 4308

Series B : 487, 508, 620, 382, 408, 266, 186, 218

- 24 State the limitations of statistics.
- 25 Solve the following equation by using matrices :

$$2x - 3y = 3$$

$$4x - y = 11.$$

- 26 Draw appropriate Venn diagram for each of the following :

$$(A \cup B)^c \quad A \cap B^c \cap C^c$$

- 27 Find the compound interest for Rs. 7,000 for 4 years if interest is payable half yearly at 6 % per annum.
- 28 A bank offers 5 % compound interest calculated on half-yearly basis. A customer deposits Rs. 1,600 each on 1st January and 1st July of a year. Find the interest he would have gained at the end of the year.

(6 × 4 = 24 marks)

Turn over

Part D (Essay Questions)

Answer any two questions.

Each question carries 15 marks.

- 29 Each student in a class of 40, studied at least one of the languages Malayalam, Hindi and French. 16 studied Malayalam, 22 French, 26 Hindi, 5 studied Malayalam and French, 14 Hindi and French, 2 Malayalam, Hindi and French. Find the number of students who studied Malayalam and Hindi but not French.
- 30 Solve the following equations by using matrices :

$$3x + 2y + z = 6$$

$$2x - 3y + 3z = 2$$

$$x + y + z = 3.$$

- 31 Calculate standard deviation and co-efficient of variation from the following data :

Class	:	0-5	5-10	10-15	15-20	20-25	25-30
Frequency	:	6	8	10	15	12	19

(2 × 15 = 30 marks)