

C 33495

(Pages : 4)

Name.....

Reg. No.....

**THIRD SEMESTER B.Com./B.B.A. DEGREE (SUPPLEMENTARY)
EXAMINATION, NOVEMBER 2017**

(UG—CCSS)

BC 3A 13—BASIC NUMERICAL SKILLS

(Common with B.Com./B.B.A.)

Time : Three Hours

Maximum : 30 Weightage

Use of scientific / Basic calculators and mathematical / Statistical tables are permitted.

Part A

This part consists of three bunches of questions carrying equal weightage.

Each bunch has four questions.

Answer all twelve questions.

A. Answer in single word :

1 The set of all first elements of the ordered pairs which belongs to R is called _____.

2 Consider $A = \begin{pmatrix} 4 & 10 \\ 2 & 5 \end{pmatrix}$ $B = \begin{pmatrix} 5 & -18 \\ -2 & -2 \end{pmatrix}$ Find $A + B$.

3 Solve $4y + 8 = 3y + 15$.

4 _____ is the value of the determinant formed with elements obtained when the row and the column in which the element lies are deleted.

B. Fill in the blanks :

5 11, 17, 23, 29 _____ Find 53rd term of the series.

6 If 'a' is the first term and 'r' is the common ratio, then the n^{th} term of a GP is _____.

7 In case of _____ enquiry only a part of the population is studied.

8 Total of all items related to a study is _____.

C. Answer in one word :

9 Rectangle is a _____ dimensional diagram.

10 If A and B are two disjoint sets, the $A \cap B$ will be _____.

Turn over

- 11 Represent A^c by means of Venn diagram
 12 Find mode : 23, 35, 28, 42, 62, 53, 42, 35, 23, 42.

(12 × ¼ = 3 weightage)

Part B

Answer all nine questions.

Each question carries a weightage of 1.

- 13 Mean marks obtained by 100 students was found to be 40. Later on it was noted that one value was read as 83 instead of 53. Find the correct mean.
 14 Find the harmonic mean of the following values. 2, 3, 4, 5.
 15 What are the uses of measures of dispersion ?
 16 What do you mean by analysis of time series ?
 17 Find the sum of 8 terms of the GP 1, 3, 9, 27,.....
 18 The 6th and 17th terms of an A P are 19 and 41 respectively. Find the 40th term.
 19 Find the compound interest for Rs. 7,000 for 4 years if interest is payable half yearly at - 6% p.a.
 20 Solve $2x - y = 5$
 $3x - 4y = 10$
 21 Represent $A \cap (B \cup C)$ using venn diagram.

(9 × 1 = 9 weightage)

Part C

Answer any five questions from seven.

Each question carries a weightage of 2.

- 22 Solve $8x + 7y = 10$
 $11x = 10(1 - y)$.
 23 Find the sum of all integers between 50 and 500 which are divisible by 7.
 24 The n^{th} term of sequence is given by $a_n = 4_n + 7$
 List the first 5 terms of the sequence and find the 35th term of the AP.

- 25 The following data relate to the number of students admitted to first year class in different courses in a college. Show this data by means of a sub divided bar diagram :

| Year | Arts | Commerce | Science |
|------|------|----------|---------|
| 2004 | 300 | 200 | 100 |
| 2005 | 250 | 250 | 200 |
| 2006 | 250 | 300 | 200 |

- 26 Write a short note on Lorenz Curve. What are the uses of Lorenz Curve ?
- 27 Calculate simple index number by average relative method :

| Items | Price in Base Year | Price in Current Year |
|-------|--------------------|-----------------------|
| 1 | 5 | 7 |
| 2 | 10 | 12 |
| 3 | 15 | 25 |
| 4 | 20 | 18 |
| 5 | 8 | 9 |

- 28 What is trend ? What are the various methods of measuring trend ? Explain.

(5 × 2 = 10 weightage)

Part D

*Answer any two questions from three.
Each question carries a weightage of 4.*

29. Solve completely the following equations using matrices :

$$2x - 3y = 3$$

$$4x - y = 11$$

30. Find standard deviation of the following distribution :

| Income per month | Number of Employees |
|------------------|---------------------|
| 0-500 | 90 |
| 500-1000 | 218 |
| 1000-1500 | 86 |
| 1500-2000 | 41 |
| 2000-3000 | 15 |

Turn over

31. Workout the trend values by 4 yearly moving average' method for the following data and plot the given values and trend values on a graph.

| Year | production |
|------|------------|
| 1997 | 1102 |
| 1998 | 1250 |
| 1999 | 1180 |
| 2000 | 1340 |
| 2001 | 1212 |
| 2002 | 1317 |
| 2003 | 1452 |
| 2004 | 1549 |
| 2005 | 1586 |
| 2006 | 1476 |
| 2007 | 1614 |
| 2008 | 1586 |

(2 × 4 = 8 weightage)