FOURTH SEMESTER B.Com./B.B.A. DEGREE (SUPPLEMENTARY/ IMPROVEMENT) EXAMINATION, MAY 2016

(UG—CCSS)

Common Course

A13—BASIC NUMERICAL SKILLS

Time : Three Hours   Maximum : 30 Weightage

I. Objective Type Questions. Answer all *twelve* questions

Choose the correct answer

1 If A is a non-empty set then $A \cup A^1 =$ _____

    (a) A.   (b) u.

    (c) A^1.   (d) None of these.

2 Which of the following is a measure of central tendency ?

    (a) Quartile deviation.   (b) Standard deviation.

    (c) Range.   (d) Median.

3 The Kth term of an A.P is $4k$ 1 then its common difference is

    (a) 5.   (b) 4.

    (c) 10.   (d)   2.

4 The Quadratic equation $x^2 + 5x + 0 = 0$ has :

    (a) No solution.   (b) Exactly two solution.

    (c) One solution.   (d) None of these.

Fill in the blanks :

5 In the quadratic equation axe $+ bx + c = 0$ $(a = 0)$, $b^2 - 4ac$ is called ———.

6 The nth term of the sequence 3, 5, 7

7 The point (7, 8) lies in the _____ quadrant.

8 The aggregated or totality of statistical data forming a subject of investigation is called _____

Answer the following

9 Find the median of the following data

     35, 32, 36, 34, 41, 45, 28, 50, 49.

10 Let U = {1, 2, 3, 4, 5, 6, 7, 8), A = (2, 4, 6, 8) B = (2, 4, 8), Find $A \cup B'$.

11 Find any *three* solution of the Equation $x + 4y + 2 = 0$.

12 Find the sum to n terms of the A.P whose K^{th} term is 5 K + 1.

                                         (12 x ¼ = 3 weightage)

II. Short Answer Questions. Answer all *nine* questions. Each question carries 1 weightage

13 Let $A = \begin{bmatrix} 2 \\ 1 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -1 \\ 0 & 2 & 6 \end{bmatrix}$.

     (a) Find A B.

     (b) Is BA defined ? Justify your answer.

14 Solve $x^2 + \dfrac{x}{\sqrt{2}} + 1 = 0$.

15 If = U {1, 2, 3, 4, 5, 6, 7, 8, 9}, A = {2, 4, 6, 8}, B =(2,3, 5, 7).

     Verify that

         (i) $(A \cup B)' = A \cap B^1$.

         (ii) $(A \cap B)' = A' \cup B'$.

16 If A = {3, 5, 7, 9, 111, B = {7, 9, 11, 131 and C = {11, 13, 151, Find $A \cap (B \cup C)$.

17 Write down measures of central tendency.

18 The nth term of an A.P is 2.n + 1 :

     (a) Write its first two terms.

     (b) Find the sum of first 10 terms.

19 If $A = \begin{bmatrix} 3 \\ -1 & 2 \end{bmatrix}$ then show that $A^2 - 5A + 7I = 0$.

20 What are the merits of Arithmetic mean ?

21. Find the inverse of the matrix $\begin{bmatrix} -1 & 5 \\ -3 & 2 \end{bmatrix}$.

(9 x 1 = 9 weightage)

III. Short Essay *or* **Paragraph Questions. Answer any** *five* **questions from seven. Each questions carries** 2 weightage

22 **Solve:** 3x + 2y = 11

2x + 3y = 4

23 Find the sum of integers from 1 to 2001.

24 Find the 12th term of G.P whose 8th term is 192 and common ratio is 2.

25 Find the mean deviation about mean for the data

x	5	10	15	20	25
1	7	4	4	6	5

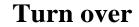26 Compute the inverse of the matrix $A = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$

27 Consider $f(x) = x^2 - 5x + 6$ and let $A = \begin{bmatrix} 2 & 0 & f \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{bmatrix}$

　　(a)　Write f (A).

　　(b)　Find the value of $f(A)$.

Turn over

28. Let A $\begin{vmatrix} 2 & 4 \\ & 3 \end{vmatrix}$ and B $\begin{vmatrix} 1 & -1 & 5^1 \\ 0 & 2 & 6 \end{vmatrix}$

Find (0 AB

(ii) Is BA defined ?Justify your answer.

(5 x 2 =10 weightage)

W. Essay questions. Answer any *two* questions from three

29 Draw the frequency polygon and histogram for the following data

Class Interval	0-10	10-20	20-30	3040	40-50
Frequency	12	13	25	20	10

30 Solve the system of Equations

$x - y + z = 4$

$x - 2y - 2z = 9$

$2x + y + 3z = 1.$

31 Find the sum of first 51 terms of an AP whose second and third terms are 14 and 18 rest ctively.

(2 x 4 = 8 we ghtage)