K17U 2028

Reg. No. : .....

Name : .....

III Semester B.Com. Degree (CBCSS-Reg./Sup./Imp.) Examination, November 2017
(2014 Admn. Onwards)
General Course
3A12 COM : NUMERICAL SKILLS FOR BUSINESS

Time : 3 Hours Max. Marks : 40

PART – A

I. Answer **all** questions. **Each** carries ½ marks.

1) A set which contains _____ element is called the null set or empty set.

2) A matrix with equal number of rows and columns is called a _____ matrix.

3) A single surd is Monomial while sum of two is

4) _____ is the relation between two quantities of the same kind with regards to their magnitude. (4×½=2)

PART – B

II. Answer **four** questions. **Each** carries **one** mark.

5) If a : b is 3 : 6 and b : c is 2 : 5, then the ratio of a : c is

6) Solve $4x + 7 = 2x + 9$.

7) Represent $A \cup B$ by Venn diagram.

8) From the following matrices, calculate A + B

$$A = \begin{bmatrix} 3 & 5 & 2 \\ 2 & 4 & 5 \\ 7 & 1 & 8 \end{bmatrix} \quad B = \begin{bmatrix} 3 & -2 & 4 \\ 5 & 6 & 1 \\ 2 & 7 & 0 \end{bmatrix}$$

9) If set A = (1, 2, 3, 8, 9) set B = (2, 4, 5, 8). Find $A \cup B$, $A \cap B$.

10) Simplify $\frac{1}{2+\sqrt{3}}$. (4×1=4)

P.T.O.

PART – C

III. Answer **any six** questions (**not** exceeding **one** page). **Each** carries **three** marks.

11) Solve $7 + 4x = 9x - 13$.

12) Salaries of A : B : C : D are in the ratio 3 : 4 : 5 : 6. The sum of their salaries is Rs. 72,000. Find their respective salaries.

13) Solve the following system of inequalities graphically.

$3x + y \leq 3,\quad x + 7y \leq 7,\quad x \geq 0\quad y \geq 0.$

14) Let $A = \begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$. Find A^3.

15) 12 kg of wheat at Rs. 35 per kg is mixed with 6 kg of wheat at Rs. 30 per kg. What would be the selling price per kg of the mixture, if a profit of 25% of sales to be made ?

16) Find the number of year an amount of Rs. 8,000 will take to become 14,400 at 8% per annum, simple interest.

17) The average of 5, 7, 8, x is 7 and the average of 13, 9, x, y, is 9. What is the value of y ?

18) Show that $A = \begin{bmatrix} 2 & -3 & -5 \\ -1 & 4 & 5 \\ 1 & -3 & -4 \end{bmatrix}$ is idempotent. **(6×3=18)**

PART – D

IV. Answer **any two** questions. **Each** carries **eight** marks.

19) Find the rank of $\begin{bmatrix} 1 & 2 & 0 & 5 \\ 3 & 1 & 2 & 2 \\ 2 & 4 & 0 & 10 \end{bmatrix}$

20) Solve $X + Y + Z = 6$
$X - Y + Z = 2$
$X + 2Y - Z = 2.$

21) Let $A = \begin{bmatrix} 2 & 3 \\ 0 & 1 \end{bmatrix}$ $B = \begin{bmatrix} 2 & -1 \\ 3 & 2 \end{bmatrix}$ $C = \begin{bmatrix} 2 & 4 \\ 5 & 7 \end{bmatrix}$. Prove $A(B + C) = AB + AC$.

(2×8=16)
