K18U 1954

Reg. No. : .....

Name : .....

III Semester B.Com. Degree (CBCSS – Reg./Sup./Imp.) Examination, November 2018
(2014 Admn. Onwards)
(General Course for B.Com.)
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 only _____ element is called singleton set or unit set.

2) The simplest form of 12 : 24 : 30 is

a) 6 : 8 : 15 b) 4 : 8 : 10 c) 3 : 6 : 6 d) 2 : 4 : 5

3) A diagonal matrix in which all the diagonal elements are equal is called a _____ matrix.

4) If 3 n = 729; then n is

a) 5 b) 7 c) 6 d) 8 **(4×½=2)**

PART – B

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

5) If a : b = 2 : 5 and b : c = 3 : 4 then the ratio of a : c is

6) Manju takes a loan of Rs. 8,000 @ 15% p.a. Find the interest she has to pay at the end of one year.

7) A = (2, 4, 5, 7, 8) B = (1, 3, 4, 7). Find A ∪ B.

P.T.O.

8) In a university there are 20 professors who teach economics or politics. Of these 12 teach politics and 4 teach both economics and politics. How many teach politics ?

9) 8 kg. of a variety of wheat at Rs. 40 per kg. is mixed with 6 kg of an inferior variety at Rs. 25 per kg. Find the cost per kg. of the mixture.

10) Find the fourth proportion to 3, 5.9. **(4×1=4)**

PART – C

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

11) Find the effective rate of interest if interest is calculated at 12% quarterly.

12) A business earns cash inflow of Rs. 10,000 every year for the next 5 years. The rate of return estimated is 9%. Find the total present value of all these expected cash inflows.

13) From the following matrix, calculate A + B :

$$A = \begin{bmatrix} 3 & 7 & 9 \\ 5 & 6 & 4 \\ 2 & 1 & 8 \end{bmatrix} \qquad B = \begin{bmatrix} 2 & -5 & -4 \\ 1 & 2 & -6 \\ 3 & 7 & -9 \end{bmatrix}$$

14) Draw the graph of the inequality $x + 3y \geq 6$.

15) What is truth table ?

16) Discuss the :

a) Union of two sets and

b) Intersection of sets with an example.

17) Find two numbers whose sum is 30 and difference is 4.

18) Average marks of 18 boys in a class is 47 and the average marks of 17 girls is 52. Find the average marks of all students together. **(6×3=18)**

PART – D

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

19) Solve $9x + 3y + 4z = 35$

$x + y - z = 4$

$2x - 5y - 4z + 48 = 0.$

20) a) $A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$ Find 5A.

b) If $A = \begin{bmatrix} 4 & 6 \\ 5 & 8 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 4 \\ 3 & 5 \end{bmatrix}$

Find 4A – 2B.

21) Find the rank of the matrix

$$\begin{bmatrix} 5 & 2 & 1 \\ 0 & 1 & 3 \\ 2 & 1 & 0 \end{bmatrix}.$$

(2×8=16)