



K23U 3757

Reg. No. : .....

Name : .....

III Semester B.Com. Degree (CBCSS – Supplementary) Examination,  
November 2023

(2017 – 2018 Admissions)

GENERAL COURSE

3A12COM : Numerical Skills for Business

Time : 3 Hours

Max. Marks : 40

PART – A

Answer **all** the questions. **Each** carries  $\frac{1}{2}$  mark.

1. A matrix in which every element is zero.
  - a) Unit
  - b) Diagonal
  - c) Scalar
  - d) Null
2.  $A \cap B = \phi$  means
  - a) A and B are union
  - b) A and B are disjoint
  - c) A and B are interrelated
  - d) None
3. Simultaneous equations means a set of equations in \_\_\_\_\_ unknowns.
  - a) One
  - b) Two
  - c) Three
  - d) Any number
4. The sum at the end of 2 years for 1000 at 10% p.a. compounded yearly
  - a) 100
  - b) 210
  - c) 1100
  - d) 1210

P.T.O.



## PART – B

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

5. A grocer wishes to sell a mixture of two varieties of pulses worth Rs. 16 per kg. In what ratio must he mix the pulses to reach this selling price, when cost of one variety of pulses is Rs. 14 per kg and the other is Rs. 24 per kg ?
6. Find the number of years a sum of Rs. 10,000 will take to become 18,000 if the rate of interest is 8%.
7. What is Venn diagram ?
8. Exemplify the transpose of a matrix.
9. Show that  $\begin{bmatrix} 2 & 3 \\ 3 & 5 \end{bmatrix}$  is symmetric.
10. Two third of a number increased by 5 equals 27. Find the number.

## PART – C

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

11. A dealer has 1000 kg sugar and he sells a part of it at 8% profit and the rest of it at 18% profit. The overall profit he earns is 14%. What is the quantity which is sold at 18% profit ?
12. Find the compound interest on Rs. 8,000 for 4 years if interest is payable half yearly for the first 3 years at the rate of 8% p.a. and for the fourth year, the interest is payable quarterly at the rate of 6% p.a.
13. Solve  $2x - y = 5$   
 $3x - 4y = 10$ .
14. Explain the methods of describing a set.
15. A machine with useful life of 7 years costs Rs. 10,000 while another machine with useful life of 5 years costs Rs. 8,000. The first machine saves labour expenses of Rs. 1,900 annually and the second one saves labour expenses by Rs. 2,200 annually. Determine the preferred course of action. Assume cost of borrowing as 10% compounded p.a.



16. Using the following sets verify that  $A \cup (B \cap C) = (A \cup B) \cap C$   
 $A = \{1, 2, 3\}$ ,  $B = \{2, 4, 6\}$ ,  $C = \{3, 4, 5\}$ .

17. Solve the following equations by Cramer's rule  $2x - 3y = 3$   
 $4x - y = 11$ .

18. Find the product of matrices;  $A = \begin{bmatrix} 1 & 3 & 2 \\ 0 & 2 & 1 \\ 0 & 5 & 3 \end{bmatrix}$   $B = \begin{bmatrix} 3 & 1 & 2 \\ 4 & 2 & 3 \\ 4 & 1 & 1 \end{bmatrix}$

PART - D

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

19. Find the inverse of  $A = \begin{bmatrix} 1 & 2 & -1 \\ 0 & 1 & 5 \\ 0 & 0 & 2 \end{bmatrix}$ .

20. By selling a table for Rs. 56, gain is as much percent as its costs in rupees.  
What is the cost price?

21. Solve  $2x + 4y + z = 7$   
 $10x - 2y + 9z = 17$   
 $x + y + z = 3$ .

