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**I Semester B.Com. (A&F) Degree Examination, January/February - 2025****COMMERCE****Quantitative Aptitude****(SEP 2024-25 Regular Scheme)****Paper : 1.3****Time : 3 Hours****Maximum Marks : 80****Instructions to Candidates:****Answers should be written in English only.****SECTION - A****Answer any FIVE questions. Each question carries Two marks. (5×2=10)**

1. a) What do you mean by prime number? Give examples.
- b) Find triplicate ratio of 2:3.
- c) Find the third proportional to 2 and 6.
- d) A man buys a fan for Rs. 1000 and sells it at a loss of 15%. What is the selling price of the fan?
- e) What is scalar matrix? Give examples.
- f) In a certain language "PARAMPARA" is written as "RAPPMAARA". How is "SUDHAKARA" coded in that language?
- g) If  $a + b$  means  $a$  is daughter of  $b$ ,  $a - b$  means  $a$  is husband of  $b$ ,  $a \times b$  means  $a$  is brother of  $b$ . What does the relation  $p \times q - r$  show?
- h) Six persons are sitting around a round table. A and Z are sitting opposite. Y is sitting between C and Z. B is sitting between A and X. B is sitting to the left of A. So who is to the right of C?

**[P.T.O.]**



## SECTION - B

Answer any FOUR questions. Each question carries Five marks.

(4×5=20)

2. Solve for  $x$ ,  $\frac{7x+5}{5} - \frac{x-11}{14} = \frac{3(x-25)}{7} + 35$ .

3. A man spends 30% of his income for rent and 50% of the remainder for other expenses. If he saves Rs. 2000 per month. Find his monthly income.

4. If  $A = \begin{bmatrix} 1 & 5 & 6 \\ 7 & 8 & 9 \\ 0 & 1 & 2 \end{bmatrix}$   $B = \begin{bmatrix} 4 & -2 & 3 \\ 0 & 1 & 2 \\ 3 & 4 & 5 \end{bmatrix}$  find

a)  $A + 2B$ .

b)  $2A - B$ .

5. Calculate the amount of annuity of Rs. 10,000 for 10 years if the rate of interest is 10% p.a.

6. Find the value of  $x$  if  $\begin{vmatrix} 1 & 4 & 5 \\ 2 & x & 0 \\ 3 & 5 & 8 \end{vmatrix} = 0$ .

7. Sowmya walked 20 m towards the north. Then she turned right and walks 30 m. Then she turns right and walks 35 m. Then she turns left and walks 15m. Finally she turns left and walks 15 m. In which direction and how many meters is she from the starting position?

## SECTION - C

Answer any THREE questions. Each question carries Fifteen marks.

(3×15=45)

8. a) Solve by Cramer's rule  $6x + 5y = 2$  and  $4x - 3y = 14$ .

b) Given  $A = \begin{bmatrix} 4 & 2 & -1 \\ 3 & -7 & 1 \end{bmatrix}$ ,  $B = \begin{bmatrix} 2 & 3 \\ -3 & 0 \\ -1 & 5 \end{bmatrix}$  Find  $(AB)'$  and  $B'A'$ .



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9. a) Manohar borrowed Rs. 12,650 from a money lender at 18% p.a. simple interest. After 3 years he paid Rs. 10,381 and gave an  $Ox$  to clear the debt. Find the cost of the  $Ox$ .
- b) A bill of Rs. 10,900 due in 9 months at 5% p.a. Find present value, true discount, Banker's discount and banker's gain.
10. a) If 15 men working 12 hours a day perform a job in 16 days. How long will it take for 21 men working 10 hours daily to do the same task?
- b) By selling an article for Rs. 160 A lose 20%. At what price A must sell it to gain 10%?
11. a) Solve by substitution method  $3x + 4y = 2$  and  $5x + 7y = 0$ .
- b) Ramesh lends Rs. 15,000 for 2 years at a certain rate of compound interest. If after 2 years it amounts to Rs. 16,224. Find the rate of interest.
12. a) Find HCF and LCM of  $\frac{2}{3}$ ,  $\frac{8}{9}$ ,  $\frac{16}{81}$  and  $\frac{10}{27}$ .
- b) Five years ago father was thrice as old as son. Ten years later father will be twice as old as son. How old are they now?

#### SECTION - D

Answer the following questions. Which carries Five marks.

(1×5=5)

13. Calculate simple interest and compound interest using imaginary figures.