



-26-

I Semester B.Com. Examination, Nov./Dec. 2014  
(Fresh) (CBCS) (2014-15 and Onwards)  
COMMERCE

1.6 (b) : Methods and Techniques for Business Decisions

Time : 3 Hours

Max. Marks : 70

**Instruction:** Answers should be completely in **English** or **Kannada**.

SECTION – A

1. Answer **any 5** questions. **Each** question carries **2** marks. (5×2=10)
- Form an equation whose roots are 2 and –5.
  - What is arithmetic progression ?
  - What is Scalar matrix ? Give an example.
  - Find the compound interest on ₹ 3,000 for 3 yrs at 4% p.a.
  - If  $x : 3 = 50 : 2$ , find 'x'.
  - What is banker's gain ?
  - Find the 6<sup>th</sup> term of G.P. 2, 6, 18 .....

SECTION – B

Answer **any three** questions. **Each** question carries **6** marks. (3×6=18)

2. Solve for 'x'  $\frac{1}{x+1} + \frac{3}{x+4} = \frac{4}{x+3}$ .

3. The 4<sup>th</sup> and 8<sup>th</sup> terms of a G.P. are 24 and 384 respectively. Find the 5<sup>th</sup> term.

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

i)  $A + 2B$

ii)  $2A - B$

5. Find the banker's discount and bankers gain on ₹ 3,030 for 73 days at 5% p.a.
6. A man spends 20% of his income for rent, 75% of the remainder for other expenses. If he saves ₹ 1,600 per month, find his monthly income.

P.T.O.



## SECTION – C

Answer **any three** questions. **Each** question carries **14** marks.

**(3×14=42)**

7. a) Find the inverse of  $A = \begin{bmatrix} 3 & 5 \\ 2 & 1 \end{bmatrix}$ .

b)  $2A + B = \begin{bmatrix} 4 & 3 \\ 6 & -2 \\ 1 & 0 \end{bmatrix}$   $3A + 2B = \begin{bmatrix} 3 & -2 \\ -6 & 1 \\ 0 & -8 \end{bmatrix}$  Solve for 'A' and 'B' matrix.

8. a) The sum of 3 numbers in AP is 9 and their product is 15. Find them.

b) The sum of 3 numbers in GP is -21 and their product is 125. Find them.

9. a) Solve by formula method  $6x + \frac{15}{x} = 19$ .

b) Find the compound interest on ₹ 20,000 for 4 years at the rate of 4% p.a. payable half yearly.

10. a) On a bill of ₹ 10,900 due in 9 months at 5% p.a. find

- 1) Present value
- 2) True discount
- 3) Banker's discount
- 4) Banker's gain.

b) If  $A = \begin{bmatrix} 7 & 4 & 2 \\ 3 & 2 & 1 \end{bmatrix}$   $B = \begin{bmatrix} 6 & 2 \\ 3 & 4 \\ 1 & 3 \end{bmatrix}$  show that  $(AB)' = B'.A'$ .

11. a) The last term of a series in AP is 40 and the sum of their series is 952. The common difference is -2. Find the first term and the number of terms in the series.

b) The age of the father is 4 times that of his son, 5 yrs ago the age of the father was 7 times that of his son. Find their present ages.