SN – 579

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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)**
   a) Form an equation whose roots are 2 and –5.
   b) What is arithmetic progression ?
   c) What is Scalar matrix ? Give an example.
   d) Find the compound interest on ₹ 3,000 for 3 yrs at 4% p.a.
   e) If x : 3 = 50 : 2, find 'x'.
   f) What is banker's gain ?
   g) Find the 6^{th} 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^{th} and 8^{th} terms of a G.P. are 24 and 384 respectively. Find the 5^{th} 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.