**I Semester B.Com. Examination, November/December 2013**
**(2012-13 & Onwards) (New Syllabus)**
**COMMERCE**
**1.7 : Methods and Techniques for Business Decisions**

Time : 3 Hours

Max. Marks : 100

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

## SECTION – A

1. Answer **any 10** questions. **Each** subquestion carries **2** marks :      **(10×2=20)**

   a) What are Natural numbers ?

   b) What is H.C.F. ?

   c) Write the types of equation.

   d) Solve for x, $4x^2 - 16 = 0$.

   e) What is pure quadratic equation ?

   f) Define matrix.

   g) What is meant by Transpose of matrix ?

   h) What is meant by interest ?

   i) Define Ratio.

   j) Give the meaning of Banker's Gain.

   k) Find the 10$^{th}$ term of the A.P. 3, 6, 9, . . .

   l) If $\begin{bmatrix} a & 10 \\ -16 & 8 \end{bmatrix} = 0$ find 'a'.

## SECTION – B

Answer **any four** questions. **Each** question carries **8** marks.      **(4×8=32)**

2. Find the L.C.M. of 12 and 14 and hence find their HCF.

3. Solve for 'X'

$$\frac{3x-1}{2} + \frac{x+2}{3} = \frac{9x+12}{5} - 2$$

**P.T.O.**

4. If $A = \begin{bmatrix} 6 & 3 \\ 8 & 2 \end{bmatrix} B = \begin{bmatrix} 8 & 4 \\ -2 & 9 \end{bmatrix} C = \begin{bmatrix} -2 & 4 \\ 6 & 8 \end{bmatrix}$. Find $7A - 2B + 3C$.

5. A man borrowed ₹ 12,500 from a bank and after 2 years he paid back ₹ 13,520 in full settlement of his debt. What is the percentage rate of compound interest charged by the bank ?

6. Find the sum of the sequence 5, 7, 13, . . . to 20 terms.

## SECTION – C

Answer **any 3** questions. **Each** question carries **16** marks.                    (3×16=48)

7. a) Solve $x^2 - 2x = 15$.                                                              8

   b) 9 tables and 8 chairs cost ₹ 5,280. 8 tables and 12 chairs cost ₹ 5,280. Determine the cost of each table and of chair.                                    8

8. a) Find the inverse of $B \begin{bmatrix} 3 & 5 \\ 5 & 12 \end{bmatrix}$.              8

   b) Solve by Crammer's rule :
   
   $5x - 3y = 24$
   
   $-7x + 11\,y = 14$                                                                     8

9. a) Cash sales ₹ 2,50,000, credit sales ₹ 1,50,000, return inwards ₹ 25,000, opening stock ₹ 25,000, closing stock ₹ 35,000. Gross profit ratio 20 %. Find out
   
   i)   Cost of Goods sold
   
   ii)  Gross Profit and
   
   iii) Inventory turnover ratio.                                                         8

   b) The $4^{th}$ and $8^{th}$ terms of a G.P. are 24 and 384 respectively. Find the $5^{th}$ term.   8

10. A bill for ₹ 12,750 drawn on May $27^{th}$ 2012 for 4 months was discounted on July $19^{th}$ 2012 at 4 % p.a. Find :
   
   i)   Bankers discount
   
   ii)  True discount
   
   iii) The Banker's Gain
   
   iv)  How much the holder's of the bill receives ?                                      16