I Semester B.Com. Examination, November/December 2013  
(2012-13 & Onwards) (New Syllabus)  
COMMERCHE  
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. 
   \( 10 \times 2 = 20 \)  
   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\textsuperscript{th} term of the A.P. 3, 6, 9, \ldots  
   l) If \[ \begin{bmatrix} a & 10 \\ -16 & 8 \end{bmatrix} = 0 \] find 'a'.  

SECTION – B  

Answer any four questions. Each question carries 8 marks. \( 4 \times 8 = 32 \)  

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

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. (3x16=48)

7. a) Solve \( x^2 - 2x = 15 \).

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

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

b) Solve by Cramer's rule:
   \[
   5x - 3y = 24
   -7x + 11y = 14
   \]

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.

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

10. A bill for ₹ 12,750 drawn on May 27th 2012 for 4 months was discounted on July 19th 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?