I Semester B.Com. Examination, Nov./Dec. 2017
(CBCS) (2014-15 and Onwards) (F + R)
COMMERCE
1.6.b : Methods and Techniques for Business Decisions

Time : 3 Hours

Max. Marks : 70

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

SECTION – A

.Answer **any 5 (five)** sub-questions. **Each** sub-question carries **2** marks.　　　(5×2=10)

1. a) What are rational numbers ?

   b) The LCM and HCF of two numbers are 180 and 3 respectively. If one number is 27, find the other.

   c) Solve for x : x + 3 + x = 5.

   d) Find the 10th term of a sequence 10, 12, 14 ...

   e) What is a square matrix ? Give an example.

   f) If $A = \begin{bmatrix} 2 & 4 & 5 \\ 6 & 7 & 8 \end{bmatrix}$ $B = \begin{bmatrix} 1 & 2 & 3 \\ 1 & 4 & 2 \end{bmatrix}$ find A + B.

   g) How much interest will be earned on ₹ 2,000/- @ 8.5% simple interest in 2 years.

SECTION – B

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

2. Solve by the method of elimination:

   5x + 6y = 3

   2x – 5y = 16

3. Find the sum of the series 99 + 101 + 103 ..... to 25 terms.

4. What would be the amount of Compound Interest (CI) on ₹ 5,000/- at 5% rate of interest p.a. for 3 years ?

P.T.O.

5. Show that $\begin{vmatrix} 3 & 4 & 7 \\ 2 & 1 & 3 \\ -5 & -1 & 2 \end{vmatrix} = -40$.

6. Find :

   i) TD, ii) BD, iii) BG on a bill of ₹ 10,450 due 3 months hence @ 5% p.a.

SECTION – C

Answer **any 3 (three)** questions. **Each** question carries **14** marks.   **(3×14=42)**

7. a) Divide ₹ 1,600 between A, B and C, so that B may have ₹ 100 more than A and C ₹ 200 more than B.

   b) The weekly wages of 30 persons consisting men and women amount to ₹ 3,800. Each man receives ₹ 140 and each woman ₹ 100 as wages per week. Find the number of men and women.

8. a) Solve by formula method
      $x^2 - 3x = 10$.

   b) The sum of 3 terms in G.P. is 14 and their product is 64. Find them.

9. a) If $A = \begin{bmatrix} 2 & 4 & 4 \\ 4 & 2 & 4 \\ 4 & 4 & 2 \end{bmatrix}$ prove that $A^2 - 8A - 20I = 0$.

   b) Solve by Crammer's rule
      $3x - y = 6$
      $2x - 15 = -3y$.

10. a) If 12 pumps working 7 hours a day can lift 2,800 gallons of water in 20 days, in how many days can 20 pumps working 9 hours a day lift 3,000 gallons of water ?

    b) A bill for ₹ 14,600 drawn at 3 months was discounted on November 11th for ₹ 14,544. If the role of simple interest is 4% p.a., on what date was the bill drawn ?

11. a) Find the amount of annuity if payment of ₹ 300 is made at the end of each year for 4 years at the rate of 10% p.a. compounded yearly.

    b) Find the co-factors of matrix of A.
       $A = \begin{bmatrix} 5 & 2 & 3 \\ 3 & 1 & 2 \\ 1 & 2 & 1 \end{bmatrix}$.