I Semester B.Com. Examination, November/December 2016
(CBCS) (2014-15 and Onwards) (F + R)
COMMERCE
1.6 (b) : Methods and Techniques for Business Decisions

Time : 3 Hours   Max. Marks : 70

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

SECTION – A

Answer **any 5 (five)** sub-questions, **each** sub-question carries **2 (two)** marks : **(5×2=10)**

1. a) What are irrational numbers ?
   b) Write the meaning of quadratic equation.
   c) Find HCF of 36 and 54.
   d) What do you mean by bankers discount ?
   e) Write the meaning of a matrix.
   f) Define ratio.
   g) Write the meaning of geometric progression with example.

SECTION – B

Answer **any 3 (three)** questions, **each** carries **6 (six)** marks :   **(3×6=18)**

2. Find the LCM of 32 and 48 and hence find their HCF (show steps).

3. Simplify by cross-multiplication method.
   $10x - 9y = 12$
   $3x - 9y = 17$.

4. The sum of 3 number in GP is 35 and their product is 1,000. Find the numbers.

5. If $A = \begin{pmatrix} 0.5 & 0.5 & 0.0 & 0.0 \\ 0.3 & 0.0 & 0.2 & 0.1 \\ 1 & 0.1 & 0.2 & 0.5 \end{pmatrix}_{3 \times 4}$, $B = \begin{pmatrix} 10 \\ 20 \\ 25 \\ 50 \end{pmatrix}_{4 \times 1}$. Find AB.

6. 16 men or 28 women can do a work in 40 days. In how many days will 24 men and 14 women complete the same work ?

P.T.O.

SECTION – C

Answer **any 3 (three)** questions, **each** carries **14 (fourteen)** marks : **(3×14=42)**

7. a) The income of A and B is in the ratio of 4 : 3 and their expenditure is in the ratio of 3 : 2. If both of them save ₹ 6,000 at the end of each month find their respective monthly income.

   b) Calculate the amount and interest on ₹ 100 for 20 years allowing the compound interest at 5% p.a.

8. a) Solve by formula method $\dfrac{1}{x-2} + \dfrac{2}{x-1} = \dfrac{6}{x}$.

   b) Divide 110 into two parts so that 5 times of one part together with 6 times of the other-part will be equal to ₹ 610.

9. a) Labour cost ₹ 20 per hour per unit, material cost is ₹ 5 and one unit of sub-contracted work costs ₹ 10. Find the total cost of manufacturing 3,000, 2,000 and 1,000 vehicles of type A, B and C respectively, given that

Vehicles	Labour hours	Material used	Sub-contracted work
A	40 hrs.	100 units	50 units
B	80 hrs.	150 "	80 "
C	100 hrs.	250 "	100 "

   Solve by matrix method.

   b) Solve the following equations by Crammer's rule.
   10x + 5y = 125
   9x + 12y = 150

10. a) Find the sum of all integers between 100 and 400 which are divisible by 7 (seven).

    b) A class consists of member of boys whose ages are in AP. The common difference being 4 months. If the youngest boy of the class be only 8 years old and the sum of all the ages of all the boys in the class be 168. Find the number of boys.

11. a) Calculate the present value of an annuity of ₹ 5,000 per annum for 12 years the interest being 4% p.a. compounded annually.

    b) Find the Adj of $\begin{pmatrix} -5 & 7 \\ -2 & 3 \end{pmatrix}_{2\times2}$ and hence show that A(Adj A) = |A|.I.