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

 $(5 \times 2 = 10)$

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

SECTION - A

.Answer any 5 (five) sub-questions. Each sub-question carries 2 marks.

- 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

Answerany 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 ?

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(3×14=42)

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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.

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SECTION - C

Answer any 3 (three) questions. Each question carries 14 marks.

- 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 A² - 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.

$$A = \begin{bmatrix} 5 & 2 & 3 \\ 3 & 1 & 2 \\ 1 & 2 & 1 \end{bmatrix}.$$