



## I Semester B.B.A. Degree Examination, Nov./Dec. 2017

(F+R) (CBCS)

(2014-15 and Onwards)

## BUSINESS ADMINISTRATION

## 1.5 : Quantitative Methods for Business – I

Time : 3 Hours

Max. Marks : 70

**Instruction :** Answers should be written in **English** only.

## SECTION – A

1. Answer **any five** sub-questions from the following. **Each** question carries 2 marks. (5×2=10)
- Give the meaning of 'Rational Numbers'.
  - What are Simultaneous Linear Equations ?
  - Write the duplicate ratio of  $\sqrt{2} : \sqrt{5}$ .
  - State the meaning of inverse of a matrix.
  - Give the meaning of geometric mean.
  - With an example state the meaning of annuity.
  - Find the fourth proportional to 4 : 5 : 8.

## SECTION – B

Answer **any three** of the following. **Each** question carries 6 marks. (3×6=18)

2. Find the largest number less than 842 and divisible by 18, 27 and 12.

3. Solve by x :  $6x + \frac{15}{x} = 19$ .

P.T.O.



4. If,  $A = \begin{bmatrix} 4 & 2 \\ 6 & 4 \end{bmatrix}$ ,  $B = \begin{bmatrix} 8 & 4 \\ 6 & 2 \end{bmatrix}$  Show  $(AB)^t = B^t A^t$ .

5. Solve by Cramer's rule :

$$3x - y = 6$$

$$2x - 15 = -3y.$$

6. Find the amount of an annuity of Rs. 8,000 payable at the end of each year for 5 years, if the rate of interest is 6% effective per annum.

### SECTION - C

Answer any three of the following. Each question carries 14 marks. (3×14=42)

7. a) If  $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \end{bmatrix}$ ,  $B = \begin{bmatrix} 0 & 1 & 2 \\ 3 & 6 & 5 \end{bmatrix}$

Find :

i)  $A + B$

ii)  $A - B$

iii)  $2A + 3B$

iv) Is  $A + B = B + A$  ?

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

8. a) Solve for  $x$  :  $\frac{x+1}{2} - \frac{x-2}{3} = \frac{x+4}{5} + \frac{7}{15}$ .

b) 3 pounds of coffee and 8 pounds of tea costs Rs. 1,080 and 5 pounds of coffee and 6 pounds of tea costs Rs. 1,140. Find the cost of coffee and tea per pound.



9. a) A person borrowed Rs. 6,400. After 2 years he paid Rs. 5,000 in cash and a motor cycle to clear the amount. If the rate of simple interest was 7.5% p.a., find the value of the motor cycle.
- b) In how many year's will a sum doubles itself at 8% p.a., compound interest ?
10. a) A bill for Rs. 84,000 was drawn on 2-4-2016 at 6 months date. It was discounted on 12-5-2016 at 10% p.a. Calculate :
- i) Banker's discount
  - ii) True discount
  - iii) Banker's gain.
- b) The present ages of three persons are in the ratio of 4 : 7 : 9. Eight years ago the sum of their ages was 56. Find their present ages.
11. a) The sum of 3 terms in A.P. is 36 and their product is 1536. Find the numbers.
- b) The sum of 3 terms in G.P. is 26 and their product is 216. Find the numbers.

Answer any three of the following. Each question carries 6 marks.

2. Find the largest number less than 100 and divisible by 18, 27 and 12.