



UN – 417

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I Semester B.B.M. Examination, Nov./Dec. 2015

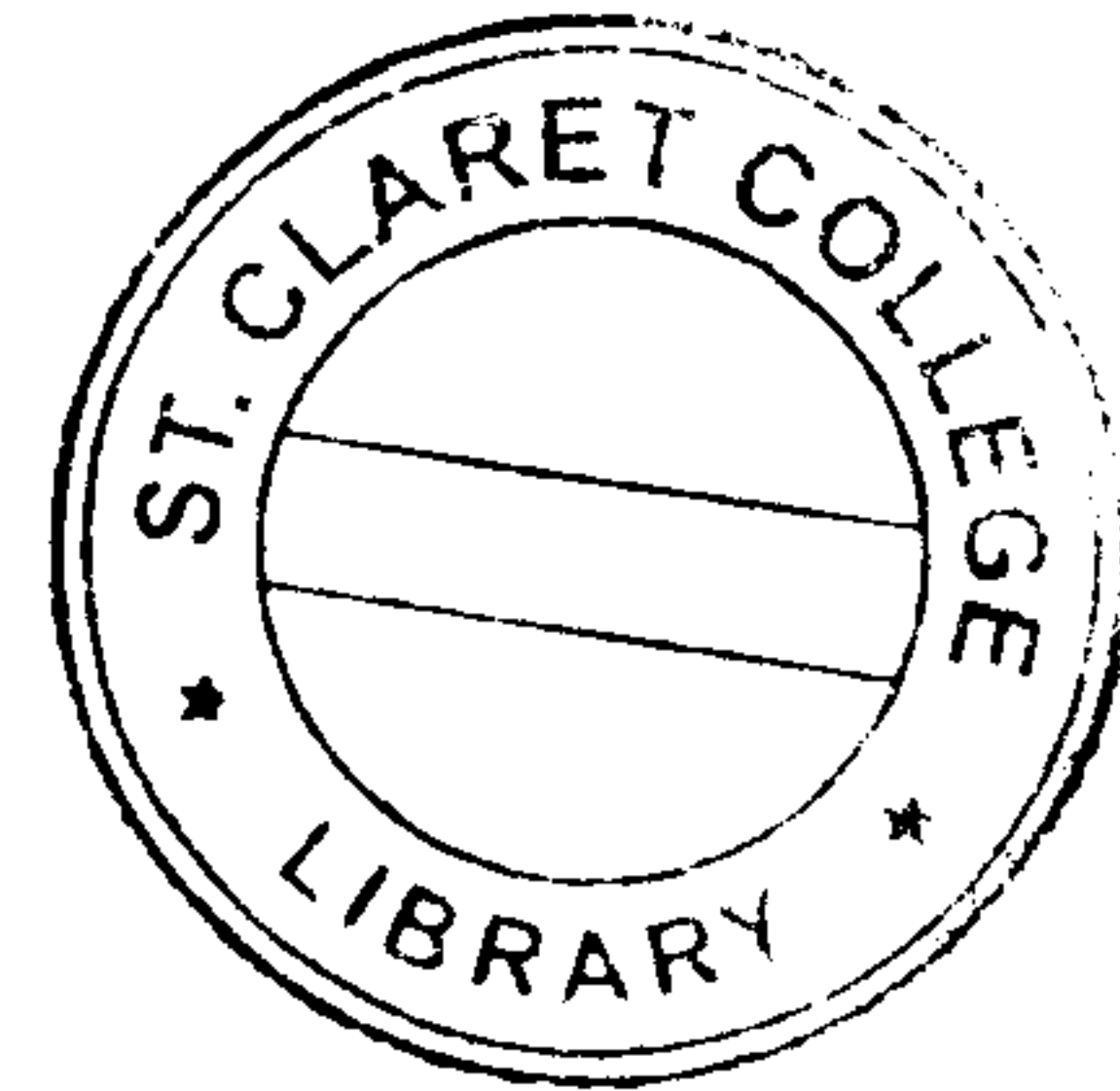
(Repeaters) (Prior to 2012-13)

**BUSINESS MANAGEMENT**

Paper – 1.6 : Business Mathematics

100 – 2011-12 Only

90 – Prior to 2011-12



Time : 3 Hours

Max. Marks : 100/90

- Instructions :**
- 1) Answers should be written in **English**.
  - 2) **All** rough works must be shown on right hand margin.
  - 3) Section **A, B** and **C** to be answered by **all** Repeater students prior to **2011-12** (90 marks).
  - 4) Section **D** to be answered by students of **2011-12** and onwards (100 marks).

SECTION – A

Answer **any ten** of the following sub-questions. **Each** sub-question carries **two** marks.  
(10×2=20)

1. a) Give the meaning of common ratio.
- b) Solve for x,  $4x^2 - 16 = 0$ .
- c) What is meant by transpose of matrix ?
- d) What is meant by interest ?
- e) Find the 10<sup>th</sup> term of the A P 3, 6, 9 ....
- f) If  $\begin{bmatrix} a & 10 \\ -16 & 8 \end{bmatrix} = 0$  find a.
- g) Calculate the rate of interest at which Rs. 750 will amount to Rs. 825 in 5 years.
- h) Find the third proportional to 12, 7.
  - i) Find LCM of 48,72 and 108.
  - j) What are quadratic equations ?
- k) If 20 men can do a job in 18 days, how long will 60 men take to do the same job ?
- l) Sum of 4 consecutive numbers is 166. Find out the numbers.

P.T.O.



## SECTION - B

Answer **any five** of the following. **Each** question carries **5** marks.

(5×5=25)

2. If the fifth term of GP is 81 and 2<sup>nd</sup> term is 25, find CR and 1<sup>st</sup> term.
3. In what time Rs. 4,000 amounts to Rs. 4,410 at 5% compound interest ?
4. Find the 2 numbers whose sum is 64 and whose difference is 16.
5. Find LCM of 12 and 14 and find their HCF.
6. Slove for X

$$\frac{3x-1}{2} + \frac{x+2}{3} = \frac{9x+12}{5} - 2.$$

7. 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  $7A - 2B + 3C$ .

8. Slove the following

$$x + 2y = 4$$

$$3x + y = 7.$$

## SECTION - C

Answer **any three** of the following. **Each** question carries **15** marks.

(3×15=45)

9. a) Find the difference between compound and simple interest on Rs. 5,000 invested for 4 years at 8% p.a.
- b) A sum of Rs. 312 divided among 4 persons A, B, C and D received by them is in GP. If A and D together receive Rs. 252, find the amount received by each person separately.
10. a) Slove by elimination method
  - i)  $x + y = 15$   
 $3x - y = 21$
  - ii)  $2x + 3y = 4z$   
 $5x - y = 20.$

b) If  $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$  show that  $A^2 - 4A - 5I = 0$ .



11. a) Solve using Cramer's rule

$$4x - 2y = 8$$

$$3x + y = -4$$

b) Find the 3 numbers in GP such that their sum is 26 and their product is 216.

12. a) Solve the quadratic equation by formula method.

$$6x^2 - x - 35 = 0.$$

b) A man borrowed Rs. 12,500 from a bank and after 2 years he paid back Rs. 13,520 in full settlement of his debt. Find the rate of compound interest charged by bank.

13. a) Find  $\frac{dy}{dx}$  if  $y = \frac{2x^3 - x^2 + x - 2}{x^2}$ .

b) Evaluate

$$\lim_{x \rightarrow 3} \frac{x^2 - 5x + 6}{x^2 - 4x + 3}$$

*2011-12*

SECTION - D

To be answered by students of 2011-12 and onwards.

(1×10=10)

14. a) Solve  $x^2 - 2x = 15$ .

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

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