



SN – 664

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I Semester B.Com. Examination, November/December 2013
(Prior to 2011-12)
COMMERCE
Business Mathematics

Time : 3 Hours

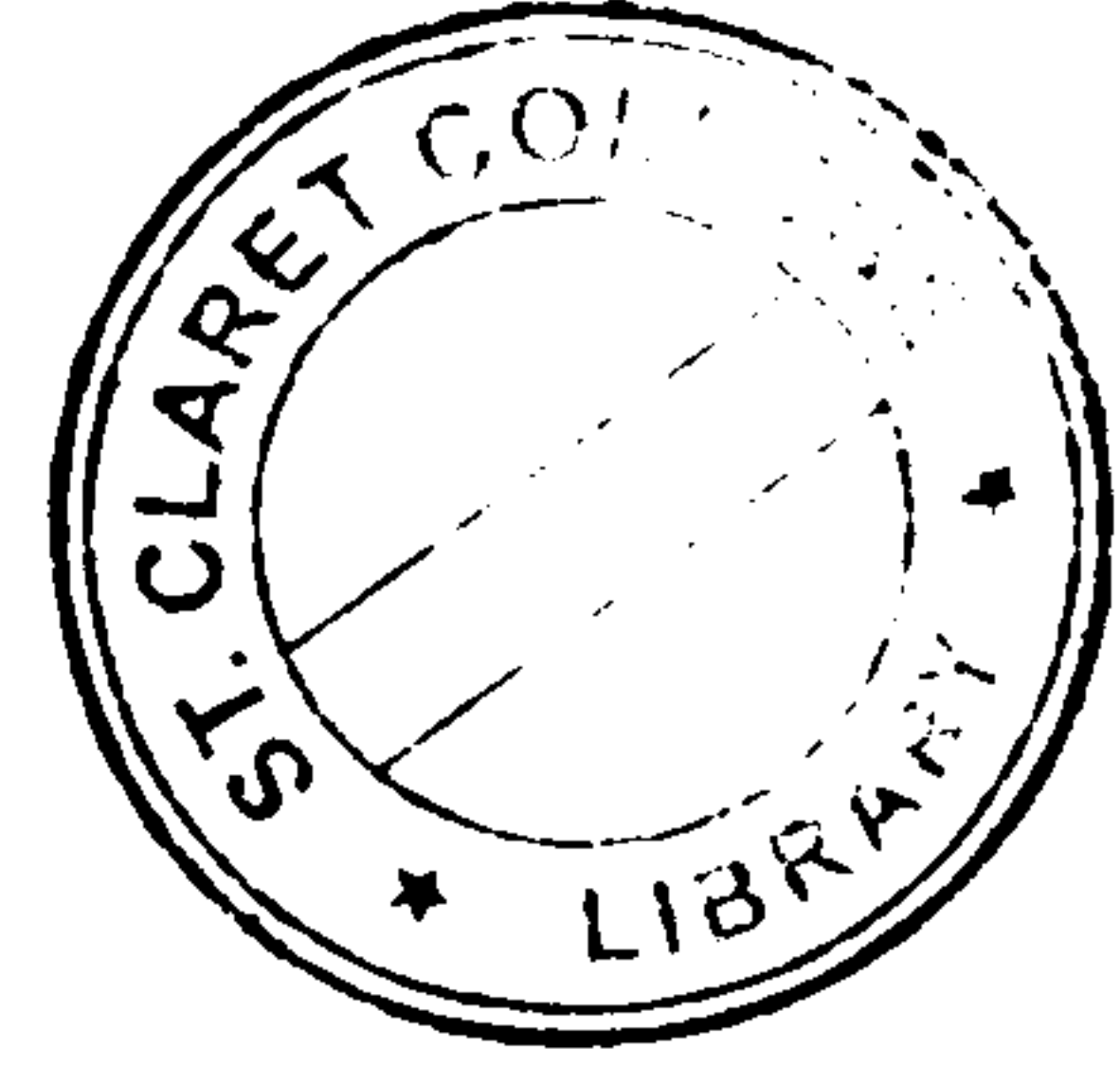
Max. Marks : 90

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

SECTION – A

1. Answer **any 10** questions. **Each** question carries **2** marks. (2×10=20)

- a) Mention the types of progression.
- b) Define an equation.
- c) Form an equation whose roots are 25 and – 3.
- d) Find the LCM of 18, 27 and 36.
- e) What is a real number ?
- f) What is a irrational number ?
- g) What is Bankers Discount ?
- h) Define ratio.
- i) Find S.I. if P = Rs. 800, T = 4 years R = 5%.
- j) What is determinant ?
- k) If $A = \begin{bmatrix} 3 & 5 \\ 2 & 4 \end{bmatrix}$ find A^2 .
- l) Define geometric mean.



P.T.O.



SECTION – B

Answer **any 5** questions. **Each** question carries **5** marks.

(5×5=25)

2. Solve by formula method $15x^2 + 16x - 15 = 0$.
3. The 8th term and 20th term of an A. P are 22 and 46 respectively. Find the A. P and hence 18th term.
4. The 4th and 8th term of a G.P. are 24 and 384 respectively. Find the 1st term and common ratio.
5. If $A = \begin{bmatrix} 0 & 2 & 3 \\ 2 & 1 & 4 \end{bmatrix}$ $B = \begin{bmatrix} 7 & 6 & 3 \\ 1 & 4 & 5 \end{bmatrix}$ Find the value of $2A + 3B$.
6. Solve by substitution method :
$$2x - y = 5$$
$$x - 4y + 1 = 0.$$
7. Mr. Karthik bought a certain number of shirts for Rs. 1,500. Each shirt costing the same. He sold each shirt at Rs. 84 and with total proceeds he could buy 20 more shirts than before. How many shirts did he buy originally ?
8. At what rate compound interest p.a will a sum of Rs. 500 amounts to Rs. 578.81 in 3 years ?
9. The B.G. on a certain bill due 6 months hence is Rs. 40. The rate of interest being 20% p.a. Find the face value of the bill.



SECTION – C

Answer **any 3** questions. **Each** question carries **15** marks.

(3×15=45)

10. a) Using Crammers rule solve the following :

$$2x + y - z = 3$$

$$x + y + z = 1$$

$$x - 2y - 3z = 4.$$

b) Find the inverse of $A = \begin{bmatrix} 1 & 3 & 2 \\ 0 & 2 & 1 \\ 0 & 5 & 3 \end{bmatrix}$.

11. a) Fourth term of a G.P. is 40 and 10th term is 2560. Find the 7th term.

b) Find the difference between S. I and C.I. on Rs. 6,000 in 3 years at 4% p.a.

12. a) The sum of 3 numbers in A.P. is – 24 and their product is 288. Find the numbers.

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

13. a) The difference between TD and BD on a bill due after 6 months at 8% p.a. is Rs. 40. Find :

i) T.D.

ii) B.D and

iii) Face value of the bill.

b) Incomes of A and B are in the ratio of 5 : 3. Their expenses are in the ratio of 8 : 5 and savings in the ratio of 2 : 1. If the total savings of A and B is Rs. 3,600, find their individual income.



14. a) Solve by elimination method :

$$2x - 3y = 19$$

$$3x + 2y = 9$$

b) A machine listed at Rs. 625 was sold at a discount of 15%. Find the discount and net price.