

S.No. : 282

BBAS 2201

No. of Printed Pages : 04

Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 28806

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B. B. A. (LSCM) Examination 2021-22

(Even Semester)

BUSINESS MATHEMATICS

Time : Three Hours]

[Maximum Marks : 60

Note :- Attempt all questions.

SECTION - A

1. Attempt all parts of the following : $8 \times 1 = 8$
 - (a) Write down the formula to find n^{th} term of G. P. series.
 - (b) Define sets.
 - (c) Define the term discount.
 - (d) If cost price is Rs. 85 and selling price is Rs. 105 then what is the profit?
 - (e) What is the ratio of 8 c.m. to 3m.?

[P. T. O.]

- (f) Give one difference between compound interest and simple interest.
- (g) Define infeasible solution.
- (h) Differentiate $10x^2$ w.r.t x .

SECTION – B

2. Attempt any two parts of the following : $2 \times 6 = 12$

- (a) If 25 articles are bought for Rs. 125 and sold at Rs. 6 per article, what is the profit percent at cost price?
- (b) let A = set of natural number less than 8,
 B = even natural number less than 12,
 C = multiple of 3 between 5 and 15?
Find $B \cup C, A \cap C, \{(B \cap C)\} \cup A$.
- (c) A box contains 5 different red and 6 different white balls. In how many ways can 6 balls be selected so that there are at least 2 balls of each colour.
- (d) Differentiate $y = e^x \sin x$

SECTION - C

Note:- Attempt all questions. Attempt any two parts from each questions. $8 \times 5 = 40$

3. (a) What should be subtracted from each term in the ratio 5:6 so that it becomes A:11?
- (b) Find the common difference and first term of G.P. series whose 6th term is 64 and 10th term is 1024.
- (c) Find the sum of two digit number when divided by 5 remainder is 2.
4. (a) Ramesh borrowed Rs. 3100 at 3.5% per annum simple interest. What amount will he have to pay after $4\frac{1}{2}$ years.
- (b) Write a short note on annuity.
- (c) Sonu decided to purchase a motorcycle, for this purpose he took a loan of Rs. 50000 at 5% per annum for 3 year at compound interest. How much amount did he return after 3 year?

[P. T. O.]

5. (a) In how many different ways can the letter of the word 'LEADING' be arranged in such a way that vowels always come together.

(b) If ${}^n P_4 = 20 \times {}^n P_2$, find n .

(c) In a city 20 percent of the population travels by car, 50 percent travel by bus and 10 percent travel by both car and bus. Then find the persons travelling by car or bus.

6. (a) Solve the given LPP graphically

$$\text{maximize } Z = 8x + y$$

$$\text{S. T. C. } x + y \leq 40,$$

$$2x + y \leq 60,$$

$$x, y \geq 0$$

(b) Calculate $\int (x^3 + 3x^2 + 4) dx$

(c) Write a short note on LPP.

