Roll No.

56503

MBA 5 Year 1st Semester (New Scheme) Examination – December, 2022 BUSINESS MATHEMATICS

Paper: 501-P3

Time: Three Hours]

[Maximum Marks : 80

Before answering the questions, capaidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note: Attempt five questions in all. Section - A (Questions No. 1) is compulsory. Attempt four more questions from Section - B selecting one question from each Unit. All questions carry equal marks.

SECTION - A

1. (a) What are equivalent sets?

2

(b) If (A) = 100, (B) = 50 and (A \cup B) = 120, find (A \cap B).

2

(c) Find the value of $\frac{x^{m+2n} \cdot x^{3m-8n}}{x^{5m-6n}}$ 2

(d) If $\log_2 x = 6$, find x.

2

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(e) Find that value of ${}^5P_2 \times {}^4P_1$.

f) Expand $(2x - 3y)^3$. 2

(g) Distinguish between differentiation and integration.

(h) Explain and illustrate a diagonal matrix. 2

SECTION - B

UNIT - I

Using suitable examples, differentiate between :

 $4 \times 4 = 16$

2

(a) Null set and singleton set.

(b) Subset and proper subset.

(c) Intersection of two sets and difference of two sets.

(d) Finite and infinite sets.

3. (a) Prove that: $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$ 8

(b) Prove that: $A \cap (B - C) = (A \cap B) - (A \cap C)$ 8

UNIT - II

4. (a) Simplify:

8

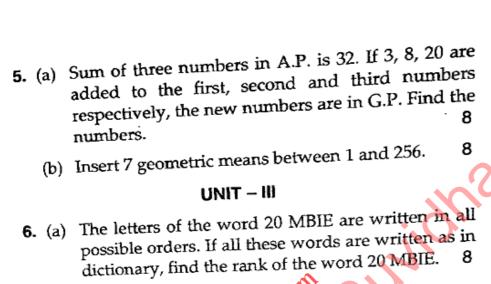
$$\frac{1}{x^b + x^{-c} + 1} + \frac{1}{x^c + x^{-a} + 1} + \frac{1}{x^a + x^{-b} + 1}$$

(b) Using log tables, find the value of:

 $\frac{(6.284)^3\sqrt[3]{624}}{\sqrt[4]{0.005}}$

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(2)



dictionary, find the rank of the word 20 MBIE. 8

(b) Prove that: ${}^{n}C_{r} + {}^{n}C_{r-1} = {}^{n}C_{r}$ 8

7. (a) Using Binomial theorem expand $(2x - 3y)^{6}$. 8

(b) If the 21st and 22 V terms in the expansion of $(1 + x)^{44}$ are equal, find the value of x. 8

UNIT – IV

8. Solve the following linear equations: 16

(3)

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-(P-3)(Q-9)(22)

8

8