BBM DEGREE (CBCS) REGULAR/IMPROVEMENT/REAPPEARANCE EXAMINATIONS, FEBRUARY 2023

First Semester

Bachelor of Business Management

Complementary Course - BM1CMT03 - BUSINESS MATHEMATICS I

2017 Admission Onwards

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Time: 3 Hours   Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. 14x = 6y find x:y

2. Simplify $3^{-2} \times 3^5$

3. Solve $x^2 - 6x + 8 = 0$

4. Define disjoint sets and power set

5. If $U = \{1, 2, 3, 4, 5\}$ and $A = \{2, 4, 5\}$. Find A^c

6. A man buys a toy for Rs.25 and sells it for Rs. 30. Find his gain percentage

7. Find the logarithm of 625 to the base 5

8. Find the antilogarithm of 2.4678.

9. If the 5th term of an arithmetic progression is 10 and 7th term is 14, find first term and common difference.

10. If the sum of 5 terms of an arithmetic progression is 23 and 8 terms is 38, find the 12th term.

11. Find the harmonic mean of $\frac{1}{2}$ and $\frac{1}{9}$

12. In how many ways 5 prizes can be given among 4 boys when each is eligible for the prizes.

(10×2=20)

Part B

*Answer any **six** questions.*

13. Find three numbers in the ratio 3:2:5 such that the sum of their squares is equal to 1862

14. Find the relationship between x and y if x varies as y and x=14 when y=2

15. Solve 4x+2y=6 , 5x+y=6

16. Let $A = \{a, b, c, d, e, f, g\}, B = \{f, g, h, i, j\}, C = \{a, b, f, g\}$. Show that $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$.

17. There are 30 students in a class. Among them 8 students are leaning English and French.A total of 18 students are learning English.If every student is learning atleast one language, howmany students are learning French in total ?

18. Find the simple interest on Rs.5200 for 2 years at 6% per annum.

19. Find the compound interest for Rs.7000 for 4 years if interest is payable at 6% per annum.

20. Find the number of terms in the geometric progression 6,12,24,...1536.

21. Find the sum of terms of the geometric series $2, 4, 6, 8, \ldots 512$.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. In a survey of university students, 64 had taken Mathematics course, 94 had taken Chemistry course, 58 had taken Physics course, 28 had taken Mathematics and Physics, 26 had taken Mathematics and Chemistry, 22 had taken Chemistry and Physics course. and 14 had taken all the three courses.Find how many had taken one course only ?

23.
    1. A sum of Rs. 12,500 amounts to Rs. 15,500 in 4 years at the rate of simple interest. What is the rate of interest?
    2. Find the simple interest of Rs.12784 in 4 years at 5.5% annum.

24. Insert 3 geometric mean between $\frac{9}{4}$ and $\frac{4}{9}$

25. There are 6 boys and 3 girls in a class. A committee of 5 is to be seleted such that there are 3 boys and 2 girls in a committee.

    1. In how many ways can the committee be selected ?
    2. What is the number of ways if there is atleast one girl in the committee?

(2×15=30)