BBA DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS, DECEMBER 2021

Second Semester

Bachelor of Business Administration

Complementary Course - BA2CMT08 - MATHEMATICS FOR MANAGEMENT

2017 ADMISSION ONWARDS

25FC9D56

Time: 3 Hours   Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. In which quadrant do the following points lie
   (a) (3,-5) (b) (-4,3) , (c) (-2,-1) (d) (1,4)

2. What is the co ordinate of the mid point of the line joining (x_1 , x_2)

3. Find the centroid of a triangle whose vertices are (4, 2) , (4 , 5) and (-2,2)

4. Write the equation of a straight line whose slope m and which passes through the point (x_1, y_1).

5. Convert ax + by + c = 0 in the slope form.

6. Show that the lines 2x + 3y +5 = 0 and 3x -2y +7 =0 are perpendicular.

7. Three numbers in the ratio 2:1:1, if 10 is added to the second ,the resulting numbers form an AP. find the original numbers.

8. Find the sum of the series 1, 3, 9, 27, ...to 10 terms ?

9. Find the compound interest on ₹ 10,000 for 3 years at 5% per annum ?

10. Find the rate of interest corresponding to a rate of discount of 7% ?

11. What sum amount to ₹ 8,000 after 4 years at 5% compound interest ?

12. Find the present value of the annuity of ₹ 7,500 payable indefinitely at 8% compound interest ?

(10×2=20)

Part B

13. Show that the points(7, 9) , (3, -7) and (-3 ,3) are vertices of a right angled triangle.

14. Show that the points (0,-1), (2,1), (0,3) and (-2,1) are the vertices of a square.

15. (a) Write down the equation of the straight line whose slope is 3/4 and passes through the point (-3, -1).
    (b) Find the slope of the line joining (7, -4) and (9, 10)

16. For what value of k , will the point (7, k) lie on the line passing through (3, 6) and (-5, 2) .

17. Give any two properties of an AP, with examples.

18. If the 5th and the 10th terms of a GP are respectively 32 and 1024,. find the first term and the common ratio?

19. What principal value will amount to ₹ 560 in 3 years at 4% per annum simple interest.

20. A machine depreciate each year by 10% of its value at the beginning of the year . At the end of the fourth year its value is ₹ 1,31,200 . Find its original value ?

21. Find the amount of an annuity, if a payment of ₹ 1,000 is made at the end of every quarter for 10 years at the rate of 8% per annum compounded quarterly ?

(6×5=30)

Part C

Answer any two questions.

Each question carries 15 marks.

22. (a) Find the area of the quadrilateral formed by the points(1,2),(6,2),(5,3),(2,4)
    (b) Show that the points   are collinear (1,-1),(2,1),(4,5) are collinear

23. (a) Find the equation of the line passing through the intersection of the lines 2x +y =8 and 3x - 2y +7 =0 and parallel to the line 4x+y -11 = 0
    (b) For what value of k will the lines 3x-4y+5 =0,7x-8y+5=0,4x+5y +k =0 are concurrent

24. (a)The 13 th term of an AP is 3 and the sum of the first 13 terms is 234,find the first term?
    (b) The first term of an AP is 5, last term 45 and their sum is 400.Find the number of terms and the common difference ?

25. (a)Find three numbers in GP such that their sum is 130 and their product is 27000 ?
    (b)Find five numbers in GP such that their product is 32 and the product of the last two is 108 ?

(2×15=30)