



23124483

QP CODE: 23124483

Reg No : .....

Name : .....

**BBA DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE  
EXAMINATIONS, MAY 2023**

**Second Semester**

Bachelor of Business Administration

**Complementary Course - BA2CMT08 - MATHEMATICS FOR MANAGEMENT**

2017 ADMISSION ONWARDS

30E2DC1F

Time: 3 Hours

Max. Marks : 80

**Part A**

*Answer any **ten** questions.*

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

1. Mark the points  $A = (3, -4)$  ,  $B = (-4, 2)$  ,  $C = (0, 2)$  ,  $D = (3, 5)$  on the plane.
2. Prove that the points  $(-1, 0)$ ,  $(11, 8)$  ,  $(1, 3)$ ,  $(0, 0)$  are the vertices of a parallelogram.
3. Find the centroid of a triangle whose vertices are  $(4, 0)$  ,  $(6, -3)$  and  $(5, -5)$ .
4. Slope of a straightline passing through the points  $(4, 5)$  and  $(2, 3)$ .
5. Find the point of inter section of the lines  $3x + 2y - 4 = 0$  and  $x + y - 3 = 0$
6. Show that the lines  $3x - 4y + 8 = 0$  and  $6x - 8y + 5 = 0$  are parallel.
7. Which term of the series  $96, 92, 88, \dots$  is zero ?
8. Find the sum of the series  $1, 3, 9, 27, \dots$  upto 5 terms ?
9. What sum of money will produce ₹ 75 as interest in 3 years at 5% per annum simple interest?
10. Find rate of discount corresponding to a rate of interest 6% ?
11. What sum amount to ₹ 8,000 after 4 years at 5% compound interest ?
12. A person desires to institute an endowment fund for ₹ 4,000 ,such that every year a scholarship of ₹ 100 may be given. Find out at what rate of interest per annum ,the amount must be invested ?

(10×2=20)





### Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Show that the points  $(1,1)$ ,  $(2,3)$  and  $(5,-1)$  form a right angled triangle.
14. Show that the following points  $(-1,6)$ ,  $(-10,12)$ ,  $(-16,16)$  are collinear.
15. A straight line passes through two given points  $(0,5)$  and  $(6,-3)$ . Find its equation?
16. Find the length of the perpendicular from the point  $(3,-2)$  to the line  $12x - 5y + 6 = 0$ ?
17. Find four numbers in AP whose sum is 20 and sum of squares is 120 ?
18. Find the sum to  $n$  terms of the series  $11, 103, 1005, \dots$ ?
19. The population of a town in 1985 was 15,000 . Calculate the population in the year 2000 , if the compound annual rate of increase is 2% ?
20. A machine is depreciated in such a way that at the end of any year the value is 90% of the value at the beginning of the year . The cost of the machine was ₹ 20,000 and it was sold as waste metal for ₹ 500 on finding it is not working properly . How many years the machine was in use ?
21. Find the total amount of an annuity of ₹ 1,000 paid at the beginning of each year for 8 years at 6% compound interest per annum ?

(6×5=30)

### Part C

Answer any **two** questions.

Each question carries **15** marks.

22. If the midpoints of the sides of the triangle ABC are  $(5,1)$ ,  $(0,-2)$  and  $(2,6)$  , Find the coordinate of the vertices?
23. Find the equation of the sides and altitude of the triangle formed by  $(2,3)$ ,  $(1,4)$ ,  $(2,0)$  ?
24. (a)How many terms of the series  $9, 12, 15, \dots$  must be taken so that the sum may be 306?  
(b)Find the sum of all natural numbers between 200 and 400 which are divisible by 7 ?
25. (a) Find the first four terms in GP such that the sum of the first two is 4 and the sum of the last two is 36?  
(b)The sum of three numbers in GP is  $\frac{42}{5}$  and their product is -8. Find the numbers?

(2×15=30)

