

QP CODE: 19101702



Reg No : .....

Name : .....

**BBA DEGREE (CBCS) EXAMINATION, MAY 2019**

**Second Semester**

Bachelor of Business Administration

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

2017 ADMISSION ONWARDS

9B991CC5

**Maximum Marks: 80**

**Time: 3 Hours**

**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  $(-4, 6)$ ,  $(2, -2)$  and  $(2, 5)$
4. Find the slope of the line  $2x - 3y - 6 = 0$
5. Find the slope of the line  $3x + 2y + 3 = 0$ .
6. Examine whether  $(3, 1)$  is a point on the line  $4x - 3y = 9$
7. Find the Arithmetic Mean between 'a' and 'b' ?
8. Find the sum of the series  $1, 1/2, 1/4, 1/8, \dots$  to 12 terms
9. Find the simple interest on ₹ 300 for 7 years at 14% per annum ?
10. When a child is born ₹ 500 is placed to his credit at 6% compounded annually . What amount will be there on his twentieth birthday ?
11. A machine costs ₹ 50,000 . Calculate its scrap value at the end of 8 years , depreciation on the reducing instalment system being charged at 10% per annum ?
12. Find the rate of discount corresponding to a rate of interest 10% ?

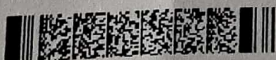
(10×2=20)

**Part B**

Answer any **six** questions.

Each question carries **5** marks.

13. Find the coordinate of the point which divides the line joining the points  $(1, -2)$  and  $(4, 7)$  internally in the ratio 1:2





14. Show that the points  $(2, 5)$ ,  $(5, 2)$  and  $(6, 6)$  are vertices of an isosceles triangle
15. Find the equation to the straight line passing through the origin and parallel to  $5x - 3y + 7 = 0$
16. Find the equation of the line perpendicular to  $3x - 7y = 0$  and passing through  $(1, -2)$
17. Find the sum of the series  $1, 3, -5, 7, 9, -11, 13, 15, -17, \dots$  to  $3n$  terms?
18. Which term of the series  $2, 1, 1/2, \dots$  is  $1/2048$
19. Find the total amount of annuity of ₹ 400 payable at the end of every quarter for 6 years at 8% per annum compounded quarterly?
20. What sum amount to ₹ 8,000 after 4 years at 5% compound interest payable half yearly?
21. A loan of ₹ 25,000 is repaid by means of 4 equal instalments. Calculate the amount of annual instalment at 5% per annum?

(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  $(-3,2)$ ,  $(7,-6)$ ,  $(-5,-4)$ ,  $(5,4)$   
  
(b) Find the value of  $k$ , if the points  $(-5,a)$ ,  $(1,2)$ ,  $(3,4)$  are collinear
23. (a) A firm invests Rs. 10,000 in a business which has a net return of Rs. 500 per year. An investment of Rs. 20,000 would yield an income of Rs. 2000 per year. What is the linear relationship between investment and annual income. What would be the annual return on an investment of Rs. 12,000?  
  
(b) Find the equation of the line through the point  $(2,2)$  such that the sum of its intercepts on the axis is 9.
24. (a) A club consists of members whose ages are in AP, the common difference being 3 months. If the youngest member of the club is 7 years old and the sum of the ages of all the members is 250 years, find the number of members in the club?  
  
(b) The ratio of 7th to 3rd term of an AP is 12:5. Find the ratio of the 13th to the 4th term?
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  $42/5$  and their product is -8. Find the numbers?

(2×15=30)

