


BBA/M-11   
 BUSINESS MATHEMATICS  
 PAPER: BBA-112  
 TIME: 3 HRS] [MAX MARKS :90

1. (a) The sum of three number in A.P is 9 and sum of their squares is 29. Find the numbers.
- (b) The distances between the points (6, 5) and (3, y) is 5 units. Find the values of y.
- (c) Find the ratio in which the line joining the points (1, 3) and (2, 7) is divided by the line 3x+y=9.
- (d) The sum of three numbers in G.P is 21 their product is 216. Find the numbers.
- (e) Find the value of the integral

$$\int_0^{\pi/2} \frac{\sin X}{(\sin x + \cos x)} dx$$

(f) Evaluate:

$$\int \frac{dx}{x^2 + 2x}$$

2. (a). Find the equation of a St. line which passes through the point (3,4) and have intercept on the axes such that their sum is 14.
- (B) . Find the equations of lines which pass through (4,5) and makes an angle of 45° with the line 2x+y+1=0.
3. (a) Find the co-ordinates of the orthocenter of triangle whose angular points are (1,0),(2,4) and (-5,-2).
- (b) Find the distance between the lines:  
 9x+40y-20=0 and 9x+40y+103=0.
4. (a). The first term of an A.P is 2 and the sum of the first five terms is equal to one-fourth of the sum of the next five terms. Find the sum of the first thirty terms.
- (b) Find the sum of the n terms of the series:  
 4+44+444+444+..... .
5. (a) The sum of the n terms of two series in A.P in the ratio 3x+4:5x+6. Find the ratio of their 11<sup>th</sup> term.
- (b) Find the sum of square of first n natural numbers.

6. (a). Evaluate:

$$\int \frac{x^2}{x^4 + x^2 + 1} dx$$

(b) prove that:

$$\int_0^{\pi/2} \log(\sin x) dx = -\int_0^{\pi/2} \log(\cos x) dx = -\frac{\pi}{2} \log 2$$

7. (a) Evaluate:

$$\int \frac{xe^x}{(1+x)^2} dx$$

(b). Prove that:

$$\int_0^{\pi/4} \log(1 + \tan x) dx = -\frac{\pi}{8} \log 2$$

8.(a) If  $\log 2 = 0.3010$  and  $\log 3 = .4771$ , Find  $\log(.405)^{1/3}$

(b) A sum of money invested at compound interest amount to Rs. 1218.99 at end of 5 years and to Rs. 1267.37 at the end of 7 years. Find the principal and the rate of interest.

*HowToExam.com*