B.CA DEGREE EXAMINATION, APRIL 2018.

I YEAR I SEMESTER

Core - Allied I - ALLIED MATHEMATICS-I

Time : 3 Hours Max. Marks : 75

SECTION A – (10 × 2 = 20 marks)

Answer any *TEN* questions

1. Define proposition
2. Construct the Truth Table for  ↔ 
3. Expand sin 5θ in terms of sinθ and cosθ
4. Expand cos 8θ in terms of sinθ
5. Separate real part and imaginary part of sin(x+iy)
6. Show that sinh2x= 2 sinhxcoshx
7. Find the Laplace transform of cosh(at)
8. Find the Laplace transform of f(t) = cos2 t
9. Find
10. Find f (t) if L (f (t)) =
11. Separate real and imaginary parts of cosh(x+iy)
12. When proposition is said to be tautology and contradiction

SECTION B – (5 × 5 = 25 marks)

Answer any *FIVE* questions

1. Show that  is a tautology.
2. If show that θ is nearly equal to 3.010
3. Prove that cosh(x+y) = coshx coshy + sinhx sinhy
4. State and prove change of scale property L[f(at)] =
5. Find
6. Find the Laplace transform of tsinat
7. Show that  is a contradiction.

SECTION C – (3 × 10 = 30 marks)

Answer any *THREE* questions

1. Show that  
2. Show that sin 6θ=
3. If x+iy = sin (A+iB) , Prove that and
4. Solve the equation where (0) = -3, (0) = 5 using Laplace equation.
5. (a).

(b).