B.Sc. DEGREE EXAMINATION, APRIL 2016.

I /II YEAR— II/IV SEMESTER

Allied Mathematics — II

**Time** : 3 **hours**  **Max. Marks: 75**

SECTION – A (10 **×** 2 =20 **marks**)

**Answer any *TEN* questions**

1. Eliminate the arbitrary constants *a* and *b* from.
2. Find the complete integral of *p+q = x+y.*
3. Solve *xp + yq = z.*
4. Evaluate *L [(t + 1)2]*.
5. Find *L (cos2t)*.
6. Find *L (cosh 2t)]*.
7. Find 
8. Evaluate 
9. Find the value of *a* so that the Vector is solenoidal.
10. Find the unit vector normal to the surface *x2+ y2+ 2z2 =* 4 at the point (1,1,1).
11. Write the Fourier series expansion formula for *f(x) in .*
12. Find ao in the Fourier series expansion for *f(x)=  in .*

SECTION – B (5 **×** 5 =25 **marks**)

Answer any *FIVE* questions

1. Eliminate the arbitrary function *f* from *f(x2+y2+z2, x+y+z) = 0.*
2. Find the complete integral of *.*
3. Evaluate .
4. Find .
5. Find the value of the constants *a,b,c* so that  is irrotational .
6. If  evaluate along the line *y = x* from *(0,0)* to *(1,1).*
7. Obtain the Fourier expansion for the function  in

SECTION – C (3 **×** 10 =30 **marks**)

Answer any *THREE* questions

1. Solve *(mz – ny)p + (nx –lz)q =ly –mx.*
2. Find .

[P.T.O.]

1. Evaluate .
2. State Green’s theorem.Using it evaluate the following integral where C is the square formed by the lines *x= -1, x=1, y=-1, y=1* in the plane.
3. Find the Fourier series for the function *f(x) = x2* in Deduce that.

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