B.Sc. DEGREE EXAMINATION, APRIL 2018.

I YEAR II SEMESTER

Allied - Paper II - ALLIED MATHEMATICS-II

Time : 3 Hours Max. Marks : 75

SECTION A – (10 × 2 = 20 marks)

Answer any *TEN* questions

1. Find the Fourier Coefficient for the function as a fourier series   
 with period to be valid in the interval 0 to 2

2. Expand as a fourier series with period 2.

3. Eliminate a and b from z = (x+a)(y+b).

4. Find the complete integral for the function z= px +qy +log pq

5. Find .

6. Find

7. Find

8. Find

9. Define Scalar and Vector Point function

10. If , find grad at the point (1, -2,-1).

11. Find the unit vector normal to at the point (1,-1,2).

12. Solve: p +q = x+y.

SECTION B – (5 × 5 = 25 marks)

Answer any *FIVE* questions

13. Obtain the Fourier series for the function

14. Determine the Fourier series expansion of in the interval (0,2.

15. Eliminate f and from the relation

16. Find

17. Evaluate:

[P.T.O.]

18. Find the curl of the vector .

19. Using Green’s theorem find where C is the closed curve formed   
 by and y =x.

SECTION C – (3 × 10 = 30 marks)

Answer any *THREE* questions

20. Find the Fourier series for the function in .

21. Find the general solution of

22. Evaluate: (a) (b)

23. Evaluate

24. Evaluate where and S is that part of the plane

which is located in the first octant.