**SYED HAMEEDHA ARTS AND SCIENCE COLLEGE**

**KILAKARAI- 623806**

**MODEL EXAMINATION – DECEMBER 2021**

**ANCILLARY MATHEMATICS I**

**SEMESTER I**

**Year: I BSc CHEMISTRY Time: 3 Hours**

**Subject Code: 7BMAA1 Max. Mark: 75**

**Part – A**

**(102=20)**

**Answer all the questions.**

1. Define characteristic matrix with example
2. Find the sum and product of the eigen values of the matrix A=

Without finding the roots of the characteristic equation

1. Solve: ++2
2. Solve : (-)y=0
3. Leibnitz formula for the derivative of a product
4. Cartesian formula for the radius of curvature
5. =
6. Define Integration by parts
7. Expression for and
8. Solve: (+4D+4)y=0

**Part – B**

**(55=25)**

**Answer all the questions choosing either (a) or (b)**

1. a) Verify Cayley Hamiltonian’s theorem for the matrix A=

**(or)**

b) The product of two eigen values of the matrix A= is 16.Find the third

eigen value, What is the sum of the eigen values of A?

1. a) Solve: (

**(or)**

b) Solve:()y = cosmx

1. a)Find the differential coefficient of log x

**(or)**

b) What is the radius of curvature of the curve =2 at the point (1,1)?

1. a) Evaluate : /4 dɵ =/8 log 2

**(or)**

b) Evaluate log x dx by using integration by parts.

1. a)Prove that cos8ɵ=128 -256 ɵ+160 ɵ - 32 +1

**(or)**

b)Prove that ɵ = cos 6ɵ+6cos4ɵ+15cos2ɵ+10.

**Part – C**

**(310=30)**

**Answer any three questions**

1. Using Cayley Hamiltonian’s theorem for the matrix A= Find (i) (ii)
2. Solve: (-4D+3)y =
3. If y = sin(mx).Prove that
4. Evaluate .
5. Expand in a series of multiples of .

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**MODEL EXAMINATION – DECEMBER 2021**

**DISCRETE MATHEMATICS**

**SEMESTER III**

**Year: II BSc Electronics Time: 3 Hours**

**Subject Code: 7BITA3 Max. Mark: 75**

**Part – A**

**(102=20)**

**Answer all the questions.**

1. Define disjunction
2. Define parsing Tree
3. Define distributive laws
4. Define De-Morgan’s laws
5. Define degree
6. Define pendant vertex
7. Define spanning tree
8. Define cut vertex
9. Define posets
10. Define lattices

**Part – B**

**(55=25)**

**Answer all the questions choosing either (a) or (b)**

1. a) Draw the Parsing tree formula

**(or)**

b) Construct the truth table for

1. a) Obtain disjunction normal form of

**(or)**

b) Obtain conjunction normal form of

1. a)Prove that

**(or)**

b) Prove that in any graph the number of vertices of odd degree is even.

1. a) Prim’s algorithm

**(or)**

b) Dijkstra’s algorithm.

1. a)Explain Hasse diagram

**(or)**

b)Prove that the following conditions are equivalent

(i) (ii) (iii)

**Part – C**

**(310=30)**

**Answer any three questions**

1. Verify Tautology (i) (ii)
2. Show that
3. Explain some special classes of graphs.
4. a) Define Euler graph b) If a graph G contains no odd degree vertex and e is a edge in G, then there is a closed trail in G containing e.
5. Explain properties of Lattices.