DRAVIDIAN UNIVERSITY

Directorate of Distance Education (DDE)

KUPPAM – 517 426:: A.P.

Course: I year MSC (Maths)

Paper – I ALGEBRA

Question Paper for Assignment

Answer any **THREE** of the following **FIVE** Questions.

3x10=30

1. State and prove the Fundamental Theorem of Galosis Theory.

2. State and prove Gauses Lemma.

3. State and prove Second Sylow Theorem.

4. Show that every permutation is the product of its cyclic.

5. Prove the **"L"** satisfies the descending chain condition if and only if every ideal of **"L"** is principal.

DRAVIDIAN UNIVERSITY

Directorate of Distance Education (DDE)

KUPPAM – 517 426:: A.P.

Course: I year MSC (Maths)

Paper – II ANALYSIS

Question Paper for Assignment

Answer any **THREE** of the following **FIVE** Questions.

3x10=30

1. Show that every infinite subset of a countable set **A** is countable .

2. Show that every **K-Cell** is compact.

3. Let   **f**   be a monotonic on (a,b). Then show that the set of points of (a,b) at which **f** is discontinuous is at most countable **.**

4. State and prove the fundamental theorem of Calculus.

5. If *f* is measurable, them prove that (*f*) is measurable.

DRAVIDIAN UNIVERSITY

Directorate of Distance Education (DDE)

KUPPAM – 517 426:: A.P.

Course: I year MSC (Maths)

Paper – III DIFFERENTIAL EQUATIONS AND NUMERICAL METHODS

Question Paper for Assignment

Answer any **THREE** of the following **FIVE** Questions.

3x10=30

1. Using Runge- Kutta method of fourth orders solve $\dfrac{dy}{dx} = \dfrac{y^2-y^2}{y^2+y^2}$ with $y(0)=1$ at x =0,2,0,4.

2. Solve $\dfrac{dy}{dx} =(4x + y+1)2$.

3. Solve $\dfrac{dy}{dx} - x \ \tan(y\text{-}x)=1$

4. Find a root of the Equation x^2-4x +9=0 using the bisection method in four stages.

5. Use trapezoidal rule to evaluate $\int 0x^3 d x$ considering five sub intervals.

Directorate of Distance Education (DDE)

KUPPAM – 517 426:: A.P.

Course: I year MSC (Maths)

Paper – IV OPERATIONS RESEARCH

Question Paper for Assignment

Answer any **THREE** of the following **FIVE** Questions.

3x10=30

1. Explain two phase method for solving Linear Programming Problem.

2. Explain Vogel's approximation method to find the basic feasible solution to transportation problem.

3. Define a queue give a brief description of the types of queue descriptive commonly found.

4. Define Primal Problem and Dual Problem and Explain all integer cutting plane algorithm.

5. What assumptions are made in the theory of games?

Directorate of Distance Education (DDE)

KUPPAM – 517 426:: A.P.

Course: I year MSC (Maths)

Paper – V

COMPLEX ANALYSIS AND SPECIAL FUNCTIONS

Question Paper for Assignment

Answer any **THREE** of the following **FIVE** Questions.

3x10=30

1. State and prove Cauchy's residue theorem and

2. Show that the mobius transformation is invariant and

3. Find the bilinear transformation which maps the points a, I, O, in the Z plane -1,-I,1 in W-plane.

4. Find the Poles and Residues at each Pole $\dfrac{Zez}{(Z\text{-}1)3}$

5. Find the image of the infinite strip $\mathbf{O\!<\!y\!<\!\frac{1}{2}}$ under the transformation $\mathbf{W\!=\!\frac{I}{Z}}$.