**Gayatri Vidya Parishad College of Engineering (Autonomous)**

**Madhurawada, Visakhapatnam**

**Department of Mechanical Engineering**

**B.Tech., VI Semester**

NON DESTRUCTIVE TESTING

ASSIGNMENT

UNIT-I

1. Explain the different stages of liquid penetrant inspection systems.
2. List out the different types of penetrant systems used in liquid penetrant inspection.
3. Discuss in brief the required characteristics of the penetrant used in LPI.
4. What are the optimum characteristics required for a developer material used in LPI.
5. Tabulate the advantages and limitations of LPI..

**UNIT-II**

1. Explain the terms remenance, ferromagnetism and paramgnetism.
2. Discuss the different magnetization methods used in MPI.
3. Contrast between continuous and residual methods of magnetization.
4. Discuss in about demagnetization and hysteresis loop.
5. List out the application of Magnetic particle Inspection.

UNIT-III

1. Explain the terms bremsstrahlung, source strength, specific activity and half life period.
2. Discuss about attenuation of Radiation in radiography.
3. Write in brief the principle of radiography testing.
4. List out the different variables that effect the filament temperature in radiography.
5. Discuss shadow formation, enlargement and distortion in radiography applications.

**UNIT-IV**

1. List the different inspection techniques used in ultrasonic testing.
2. Explain how different types of defects are analyzed by Ultrasonic testing.
3. Explain the components used in ultrasonic testing with the help of block diagram.
4. Discuss in brief the different reference standards used in ultrasonic testing.
5. List out the application of Ultrasonic testing.

**Unit-V**

1. Explain the working principle of Acoustic Emission Techniques.
2. Compare between continuous and burst emission from materials.
3. Explain the principle of working of AE system with the help of a block diagram.
4. What are the characteristics of Acoustic waves emitted from solids?
5. List out the advantages, disadvantages and applications of Acoustic Emission Techniques.