4. Performance Test on a Vapour Compression Refrigeration.
5. Performance Test on a Vapour Compression Air - Conditioner
6. Experiment on Transient Conduction Heat Transfer

21 Hours

Scheme for Examination:

One Question from Part A	-	20 Marks (05 Write up +15)
One Question from Part B	-	20 Marks (05 Write up +15)
Viva-Voce	-	10 Marks

Total		**50 Marks**

COMPUTER AIDED MODELING AND ANALYSIS LABORATORY

Sub Code	**: 10MEL 68**	**IA Marks**	**: 25**
Hrs/week	**: 03**	**Exam Hours**	**: 03**
Total Lecture Hrs	**: 42**	**Exam Marks**	**: 50**

PART - A

Study of a FEA package and modeling stress analysis of

a. Bars of constant cross section area, tapered cross section area and stepped bar

6 Hours

b. Trusses – (Minimum 2 exercises)

3 Hours

c. Beams – Simply supported, cantilever, beams with UDL, beams with varying load etc (Minimum 6 exercises)

12 Hours

PART - B

a) Stress analysis of a rectangular plate with a circular hole

3 Hours

b) Thermal Analysis – 1D & 2D problem with conduction and convection boundry conditions(Minimum 4 exercises)

9 Hours

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c) Dynamic Analysis
   1) Fixed – fixed beam for natural frequency determination
   2) Bar subjected to forcing function
   3) Fixed – fixed beam subjected to forcing function

9 Hours

REFERENCE BOOKS:

1. **A first course in the Finite element method,** Daryl L Logan, Thomason, Third Edition
2. **Fundaments of FEM,** Hutton – McGraw Hill, 2004
3. **Finite Element Analysis,** George R. Buchanan, Schaum Series

Scheme for Examination:

One Question from Part A	-	20 Marks (05 Write up +15)
One Question from Part B	-	20 Marks (05 Write up +15)
Viva-Voce	-	10 Marks

Total		**50 Marks**

ELECTIVE-II (GROUP - A)

THEORY OF ELASTICITY

Sub Code	**: 10ME 661**	**IA Marks**	**: 25**
Hrs/week	**: 04**	**Exam Hours**	**: 03**
Total Lecture Hrs	**: 52**	**Exam Marks**	**: 100**

PART - A

UNIT - 1

Definition And Notation: Stress, Stress at a Point, Equilibrium Equations, Principal Stresses, Mohr's Diagram, Maximum Shear Stress, Boundary Conditions.

6 Hours

UNIT - 2

Strain At A Point: Compatibility Equations, Principal Strains, Generalised Hooke's law, Methods of Solution of Elasticity Problems – Plane Stress-Plane Strain Problems.

7 Hours

UNIT - 3

Two Dimensional Problems: Cartesian co-ordinates – Airy's stress functions – Investigation of Airy's Stress function for simple beam problems – Bending of a narrow cantilever beam of rectangular cross section under

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