

**I M.Tech - II Semester – Regular/Supplementary Examinations
JULY - 2017**

**EXPERIMENTAL STRESS ANALYSIS
(MACHINE DESIGN)**

Duration: 3 hours

Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. Derive the conditions of compatibility in terms of strain and stress functions. 14 M

2. a) What are the different types of materials used in strain gauge? Explain. 7 M

b) Explain briefly about strain gauge circuits. 7 M

3. What are the different types of recording instruments? Explain how dynamic recording at intermediate frequency can be accomplished? 14 M

4. Explain the different types brittle coatings. 14 M

5. Explain the geometrical approach and displacement field approach to Moire-Fringe analysis. 14 M

6. Explain in detail about different types of polariscopes for stress analysis. 14 M
7. Write the different applications of the frozen-stress method and scattered light method for three dimensional photo elasticity. 14 M
8. Explain briefly coating stresses and strains, coating sensitivity and coating materials for birefringent coating methods. 14 M