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JAYA GROUP OF INSTITUTION-THIRUNINRAVUR
4th SEM / 6th SEM / 8th SEM – B.E. / B.Tech
INTERNAL ASSESSMENT-1 (MODEL EXAM-II)

2A-II

Sub. Name: Experimental stress Analysis.
Sub. Code: AE2352
Duration: 180 minutes

Date: 06/03/2015
Branch: Aeronautical
Max.Marks: 100

PART-A (10 x 2 = 20)

1. Define stress optic law.
2. What is isoclinic?
3. Write short notes on holography.
4. What is the principle involved in moiré techniques?
5. How temperature compensation achieved in wheatstone bridge?
6. What is fringe sharpening?
7. Explain plane polarized light and circularly polarized light
8. Explain with example whole field technique and point by point technique.
9. Show the arrangement of optical elements in circular polariscope.
10. Differentiate between model and master grating.

PART-B (5x16=80)

- 11 a) i) Derive an expression for output voltage of Wheatstone bridge circuit for strain measurement. (16)
(Or)
b) i) What are the assumptions made while analyzing brittle coating? Derive expressions for coating stresses. (16)
- 12 a) What is compensation in photoelasticity Explain tardy method and babinet soliel method of compensation? (16)
Or
b) What do you understand by temperature compensation? Explain the methods to achieve it. (16)
- 13 a) Derive the expression for the intensity of emerging light from a plane polariscope with a stressed model and show how it enables us to determine the isoclinics and the isochromatics and explain it. (16)
Or
b) Show the intensity of light emerging from circular polariscope is a function of principal stress difference and explain it. (16)
14. (a) What are the important properties of ideal photoelastic material? what are the different photoelastic material. derive stress optic law? (16)
(Or)
b). Explain Brittle coating technique and its types with neat sketch. (16)
- 15 a) i) Explain working principle of Holography (16)
(Or)
b) List out the different types of moiré techniques. How moiré fringes are produced? (16)