

M.E. Second Semester (Civil (Structural Engineering)) (New-CGS)
13097 : Elective Experimental Stress Analysis : 2 SFSE 5

P. Pages : 1

Time : Four Hours



AW - 3895

Max. Marks : 80

- Notes :
1. All question carry equal marks.
 2. Answer **two** question from Section A and **two** question from Section B.
 3. Illustrate your answer necessary with the help of neat sketches.
 4. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. a) Discuss in detail the effect of a stressed model in circular polariscope employing light field setup. **10**
b) Draw the line diagram of dark field arrangement in circular polariscope. Obtain the fringe order in such polariscope arrangement. **10**
2. a) Explain the shear difference method in three dimensions. **10**
b) Explain the oblique incidence method of stress separation when one of the principal stress direction is known in two dimensional photo elasticity. **10**
3. a) Explain a scattered-light method for determining the directions of the secondary principal stresses. **10**
b) Explain stress freezing method in three dimensional analysis. **10**

SECTION - B

4. a) Explain the basic characteristic of strain gages. Write down the characteristics of an optimum strain gage. **10**
b) With neat diagram explain the working principal of electrical strain gage. **10**
5. a) Derive the expression for gage factor of resistance strain gage. **10**
b) Explain the effect of temperature is strain gages. Discuss the method of compensation of effect of temperature in strain gage. **10**
6. Write short note on:
a) Brittle coating crack pattern produced by refrigeration. **10**
b) Moire method of strain analysis. **10**
