Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 21032

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Sixth Semester

Aeronautical Engineering

AE 2352/ AE 54/ AE 1353/ 080180031/ 10122 AE 603 — EXPERIMENTAL STRESS ANALYSIS

(Regulations 2008/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Range.
2. Define Gauge factor.
3. What is strain rosette?
4. What are the restrictions of an optical gauge?
5. List the difference types of electrical strain gauges.
6. What are the margins of potentiometer circuit?
7. What is stress trajectory?
8. What is stress optic law?
9. What are the advantages of thermograph?
10. List the limitations of Holography.

PART B — (5 × 16 = 80 marks)

11. (a) Explain clearly Optical Acoustical and Electrical extensometers. (16)

Or

(b) Explain in detail the accuracy and sensitivity range of measurements. (16)

12. (a) Explain the construction and working of Acoustic Strain Gauge. (16)

Or

(b) Explain the different types of electrical strain gauges. (16)

13. (a) Explain the various methods of calibrating the strain gauge. (16)

Or

(b) What is the compulsion of temperature compensation? How this can be accomplished? (16)

14. (a) Select any two compensation techniques used in photo electricity and also explain with neat diagrams. (16)

Or

(b) Explain any two brittle coating methods. (16)

15. (a) Explain with neat sketches magnetic particle inspection. (16)

Or

(b) Explain the following with neat sketch :

(i) Acoustic Emission Technique (8)

(ii) Fluorescent Penetrant Technique. (8)

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