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

Question Paper Code : 52032

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017

Sixth Semester

Aeronautical Engineering

AE 2352 – EXPERIMENTAL STRESS ANALYSIS

(Regulations 2008)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A (10×2=20 Marks)

1. List some characteristics of strain gauge.
2. State the difference between deformation sensitivity and strain sensitivity.
3. Mention the different types of electrical strain gauges.
4. State Wiedemann's effect.
5. Define stress optic law.
6. What is photo elastic effect ?
7. What is Moire effect ?
8. List the types of brittle coating.
9. What is non-destructive testing ?
10. State the principle of eddy current testing.

PART – B (5×16=80 Marks)

11. a) State the types of extensometer. Explain the working principle of Marten's mirror extensometer with neat sketches.

(OR)

b) Explain the working principle of mechanical extensometer with a schematic.

12. a) What are the factors should be considered while selecting a strain gauge ? Mention the significance of each.

(OR)

b) Describe the different types of electrical strain gauges. Explain the working principle of a capacitance strain gauge and give its uses and limitations.

13. a) Discuss the various methods of obtaining polarised light and explain any one technique with a sketch.

(OR)

b) Explain the compensation and separation techniques in photo elasticity.

14. a) What are the variables influencing the coating behaviour ? Discuss in detail about them.

(OR)

b) State and explain any two failure theories of brittle coating.

15. a) Explain the working principle of acoustic emission and acoustic impact technique.

(OR)

b) Describe the working of visual inspection and radiography testing methods with suitable sketches.
