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Question Paper Code : X86917

M.E. /M.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2021
Second Semester
Structural Engineering
ST 5203 – Experimental Techniques
(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Name the types of strain gauge.
2. Differentiate vibrating wire sensors and Fiber optic sensors.
3. State the working principle of seismograph.
4. List any three application of Digital Data Acquisition systems.
5. Classify the types of distress.
6. What is controlled blasting ?
7. Define Holography.
8. List the equipments used in NDT techniques.
9. State the Laws of similitude.
10. What are the structural problems in Model analysis ?

PART – B

(5×13=65 Marks)

11. a) Derive the expressions for principal strains, principal stresses and maximum shear stresses for a Delta Rosette.

(OR)

- b) Explain the measurement using Hydraulic jacks and Pressure Gauge with neat sketches.

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12. a) Explain briefly the working principle of LVDT.

(OR)

b) Write notes on :

i) Cathode ray oscilloscope

(7)

ii) XY plotter

(6)

13. a) Describe the various types of damages that occur in structures due to corrosion.

(OR)

b) Explain the methods used to measure residual stress.

14. a) Explain the principle, components and application of ultrasonic testing with neat sketch.

(OR)

b) Write short notes on the Principles and Application of the following

i) GECOR

(7)

ii) GPR

(6)

15. a) Describe about the scale effect in Model analysis.

(OR)

b) Explain in detail the usage of influence line in model study.

PART – C

(1×15=15 Marks)

16. a) Explain the working principle and operation of pressure transducer.

(OR)

b) How will you measure the Corrosion of reinforcement in concrete and explain how to control it ?
