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

Question Paper Code: 52632

M.E. DEGREE EXAMINATION, NOV 2016

Third Semester

Structural Engineering

15PSE302 – EXPERIMENTAL TECHNIQUES AND INSTRUMENTATION

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. A _____ may be defined as any instrument or device that is employed to measure the linear deformation over a gauge length.

   (a) Hydraulic jack (b) Strain Gauge
   (c) Combined lever (d) Dial Indicator

2. _____ are instruments used to record and measure earthquakes.

   (a) Seismometer (b) Seismograph
   (c) Seismogram (d) Accelerograph

3. _____ is the deliberate destruction of structures and materials by means of explosives, mechanical devices, fire, chemical agents.

   (a) Demolition (b) Galvanizing
   (c) Stress Relaxation (d) Routing

4. SBR _____

   (a) Signal to Background Ratio (b) Signal to Blank Ratio
   (c) Signaling to Blurred Responding (d) Simultaneous to Broadcasting Reference

5. A technique used to determine a structures vibration characteristics

   (a) Similitude (b) Finite element method
   (c) Modal analysis (d) Oriented analysis

PART B - (5 x 3 = 15 Marks)

6. Distinguish between isoclinics and isochromatics.

7. Define the term harmonic frequency?

8. Define flow meter.

9. What is Geometric similitude.

10. What is rebound hammer?

PART C - (5 x 16 = 80 Marks)

11. (a) Explain briefly working principle of optical strain gauge. (16)

Or

(b) Enumerate and explain the types of pressure measuring devices with neat sketch. (16)

12. (a) Explain briefly about the Cathode Rays Oscilloscope. (16)

Or

(b) Explain the working principle of seismogram with a neat sketch. (16)

13. (a) Explain the effect of stressed model in a plane polari scope in dark-field setup. (16)

Or

(b) Explain direct model study and in direct model study. (16)

14. (a) Write short notes on(i) Brittlecoating (ii) Impactecho. (16)

Or

(b) Discuss the potential mapping on RCC structures by using Half-cell potential measurements. (16)

15. (a) Explain the load testing of towers. (16)

Or

(b) Explain the components of wind tunnel and its uses in structural analysis. (16)

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