Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

# Question Paper Code: U5311

## M.E. DEGREE EXAMINATION, NOV 2024

Professional Elective

Structural Engineering

21PSE511- EXPERIMENTAL STRESS ANALYSIS AND TECHNIQUES

(Regulations 2021)

Duration: Three hours                                    Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

| | | |
|---|---|---|
| 1. | Show the principle of load measurement using proving ring. | CO1- U |
| 2. | Define Stress Optic law. | CO2- App |
| 3. | Define Vibration analyzer | CO1- U |
| 4. | Differentiate the use of XY plotter from conventional printer? | CO1- U |
| 5. | Name any four signs of distress in concrete structures | CO1- U |
| 6. | Define half-cell. | CO3- Ana |
| 7. | When do you for Brittle Coating Techniques? | CO2- App |
| 8. | Define GECOR. | CO1- U |
| 9. | Difference between direct and indirect modeling | CO1- U |
| 10. | Analyze Structural Problem | CO1- U |

PART – B (5 x 16= 80 Marks)

11. (a) Analyze the compensation methods in photo elasticity and explain    CO2- App    (16)
in detail two methods of compensation in polariscope ?

(b) Explain with neat sketches the construction and working of    CO2- App    (16)
Huggenberg extensometer.

12. (a) Summarize Case Study on LVDT techniques. CO1-U (16)

Or

(b) Explain in detail about seismic recording Cathode Rays CO1-U (16)
Oscilloscope.

13. (a) Prepare the Case study on controlled blasting of demolition CO3-Ana (16)
Techniques.

Or

(b) Invent the various types of strengthening techniques adopted for CO3-Ana (16)
structural distress.

14. (a) Construct with neat sketch explain the principle and CO2-App (16)
construction of film anemometer?

Or

(b) Describe about the Principles and Application of the CO2-App (16)
following:
(i) GECOR
(ii) GPR
(iii) Impact echo
(iv) Ultrasonic pulse echo

15. (a) Explain in Detail about the Necessity, Advantages & CO2- App (16)
Applications ofIndirect Model analysis?

Or

(b) Application of Model analysis in Structural member CO2- App (16)

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