

M. Tech. Structural Engineering & Construction (CBCS Pattern) Semester - I  
**PSES151 / PEPS1(A) - Structural Instrumentation & Material Science**

P. Pages : 1

Time : Three Hours



**GUG/S/23/10966**

Max. Marks : 70

- Notes :
1. All questions carry equal marks.
  2. Answer **any five** questions.
  3. Due credit will be given to neatness and adequate dimensions.
  4. Illustrate your answers wherever necessary with the help of neat sketches.

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|-----------|----|---|----------|
| <b>1.</b> | a) | Explain with neat sketch transducers for shock and vibration measurement.                           | <b>7</b> |
|           | b) | Explain with neat sketch Linear Valuable Displacement Transducer (LVDT).                            | <b>7</b> |
| <b>2.</b> | a) | Explain various types of photo electric strain gauge.   | <b>7</b> |
|           | b) | Explain non-contact type transducers and its working principle.                                     | <b>7</b> |
| <b>3.</b> | a) | What is Ferrocement? What are the advantages and disadvantages of ferrocement.                      | <b>7</b> |
|           | b) | Explain steel fiber reinforced concrete (SFRC). Draw stress – strain curve in compression of SFRC.  | <b>7</b> |
| <b>4.</b> | a) | Explain in detailed with diagram of ultrasonic testing.   | <b>7</b> |
|           | b) | What are various advantages and limitations of NDT.   | <b>7</b> |
| <b>5.</b> | a) | Explain different method of prevention of corrosion? Differentiate between Galvanising and tinning. | <b>7</b> |
|           | b) | Explain various types of admixture with its effect on concrete.                                     | <b>7</b> |
| <b>6.</b> | a) | Explain high performance concrete with its application.   | <b>7</b> |
|           | b) | How special type of concrete improve performance of concrete. Explain in details.                   | <b>7</b> |

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