

22432

23124

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
- (2) Answer each next main Question on a new page.
- (3) Illustrate your answer with neat sketches wherever necessary.
- (4) Figures to the right indicate full marks.
- (5) Assume suitable data, if necessary.
- (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following: **10****
- a) List the types of contactless tachometer.
- b) Define force and state its units.
- c) Draw a neat sketch of capacitive pickup type thickness measuring transducer.
- d) List any four causes of vibration.
- e) List any four transducers used for sound measurement.
- f) State the principle of strain gauge load cell.
- g) Write any two specification of electromagnetic relative vibration pick up.

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- 2. Attempt any THREE of the following:** **12**
- a) Compare electro mechanical relative vibration pickup and electromagnetic relative vibration pickup transducer.
 - b) Draw a neat labelled diagram of ultrasonic vibration type thickness transducer and explain its working.
 - c) Explain the working of hydraulic force meter. State its two applications.
 - d) Explain with neat sketch the working of sound level meter.
- 3. Attempt any THREE of the following:** **12**
- a) Describe the operation of magnetic pickup type tachometer with the help of suitable diagram.
 - b) Draw condenser type microphone and explain its operation.
 - c) Draw and explain the working of photo pickup for measurement of speed.
 - d) Select proper force transducer to measure overloading of truck with proper justification.
- 4. Attempt any THREE of the following:** **12**
- a) Explain the transducer used for measurement of thickness of sheet with the help of neat diagram.
 - b) Prepare specification for absolute vibration sensor. (Any four)
 - c) List any four applications of Peizo electric crystal microphone.
 - d) Compare AC and DC tachometer. (Any four)
 - e) Describe the calibration process of strain gauge load cell.
- 5. Attempt any TWO of the following:** **12**
- a) Draw a neat labelled diagram of relative displacement vibration pickup transducer and explain its working.
 - b) Draw a labelled diagram of stroboscope and explain its working. List its any two application.
 - c) Describe the construction and working of pressductor load cell.

6. Attempt any TWO of the following:**12**

- a) Describe the calibration procedure for electromagnetic relative vibration pick up transducer.
 - b) State the difference between contact and non-contact type thickness measuring transducer. Explain the operation of non-contact types of thickness measuring transducer.
 - c) Select proper transducer for measuring the sound near generator with justification.
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