22432

11920

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

(8) Use of steam tables, logarithmic, Mollier's chart is permitted.

Marks

1. Attempt any FIVE of the following : **10**

(a) List any one advantages and disadvantages of photo pick-up speed measurement.

(b) Define force and state its unit.

(c) Draw the sketch of LVDT.

(d) Define vibration and state its unit.

(e) Draw the sketch of piezoelectric crystal.

(f) Draw the sketch of Proving Ring.

(g) Name the sensor used for measuring vibration.

2. Attempt any THREE of the following : **12**

(a) Describe working with sketches of electromechanical type of vibration measurement transducers.

(b) Explain with sketch the working of the capacitive type of thickness measurement transducers.

(c) Explain with neat sketch working of strain gauge load cell.

(d) Explain with sketches the working of condenser type of sound measurement transducers.

3. Attempt any THREE of the following : **12**

(a) Select relevant speed transducers for speed (rpm) of a rotating body with justification.

(b) Describe the calibration procedure of piezoelectric transducer for sound measuring system.

(c) Explain with diagram AC tachogenerator.

(d) Describe the trouble-shooting procedure of pressductor load cell for force measurement transducer.

4. Attempt any THREE of the following : **12**

(a) Describe with sketches the construction of ultrasonic vibration type of thickness measurement.

(b) Prepare the specification of electro-mechanical vibration pickup vibration measurement transducers.

(c) State the sound transducer widely used in electronic communication and audio recording device and state its principle.

(d) Describe the troubleshooting procedure of DC tachometer for speed measurement transducer.

(e) Describe conveyor belt weigh feeding system with neat sketch.

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

(a) Describe working of Radiation type of thickness measurement with diagram.

(b) Describe the calibration procedure for magnetic pickup speed transducers.

(c) Explain with sketch the working of hydraulic force meter.

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

(a) Describe the calibration procedure for the relative displacement vibration pickup type of vibration measurement transducer.

(b) Describe working of sound level meter with diagram.

(c) Select relevant sound measurement transducer for sound measurement near crushing mills.

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