

QP Code : 3290

Duration 3 Hours

Maximum marks 80

- N.B.:**
1. Question No.1 is Compulsory
 2. Attempt any three questions out of the remaining six questions.
 3. Assume suitable data if required.
 4. Figures to the right indicate full marks to that question.
 5. Support your answers with appropriate sketches wherever required.

- Q.1. Attempt any four questions of the followings. 20
- a) Define Primary and Secondary Texture with neat sketch. 4
 - b) Explain Comparators with its broad classification. 4
 - c) Differentiate between a "HOLE BASE" and "SHAFT BASE" SYSTEM of a tolerances used in engineering fits. 4
 - d) Explain Application of Transducers for measurement of various process parameters. 4
 - e) Explain with neat sketch principle of Interference of light. 4
 - f) Distinguish between Accuracy and Precision with an example. 4
- Q.2. a) Explain in brief with neat sketch the constructional features and working of Tool Maker's Microscope. 10
- b) Derive an expression for the Best Wire Size used in screw thread measurement. 10
- Q.3. a) Explain in detail construction, working of LVDT transducer. Explain with neat sketch any one application of it. 10
- b) Explain various types of possible ERRORS in Gears. 10
- Q.4. a) Design the workshop, inspection and general type of GO and NOT-GO GAUGE for checking the assembly of $\phi 30H_7 f_8$ and State the Taylor's Principles of the design of Limit Gauges. 20
- Being given
- $$i = 0.45 \sqrt[3]{D} + 0.001D, \text{Fundamental deviation for } f \text{ shaft} = -5.5D^{0.41}$$
- Diameter step 18-30

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- Q.5. a) Derive the expression for tooth thickness measurement of a spur gear by constant chord method. 14
- b) Draw Involute Gear Tooth profile and show various elements. 06
- Q.6. Write short notes on any four from the following 20
1. Taylor Hobson tally surf.
 2. Line and Wave Length standards
 3. Parkinson tester
 4. Two Wire and Three Wire method in thread measurement.
 5. Laser Interferometer.