

22450

12425

03 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

-
- 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) 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.

Marks

1. **Attempt any FIVE of the following:** **10**
 - a) State the need of inspection.
 - b) Define sensitivity and calibration.
 - c) Define fit. List its types.
 - d) List the instruments used to measure gear tooth thickness.
 - e) State the names of instruments used for linear measurement.
 - f) Draw and label the symbol of surface finish designating on drawing.
 - g) Define quality control.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Describe the concept of least count of measuring instrument with suitable example.
 - b) State the requirements of good comparator.
 - c) Compare mechanical comparator and pneumatic comparator.
 - d) Discuss the Taylor's principle of gauge design.
- 3. Attempt any THREE of the following:** **12**
- a) Describe the interchangeability with its importance.
 - b) Compare limits and tolerance.
 - c) Draw a neat sketch of floating carriage micrometer.
 - d) Describe Parkinson's gear tester with neat sketch.
- 4. Attempt any THREE of the following:** **12**
- a) Explain analytical and functional inspections of gear.
 - b) Illustrate screw thread terminology with labels.
 - c) Describe the working of universal bevel protractor.
 - d) An angle of $114^{\circ} 28' 36''$ is to be developed using angle gauge set of $[1^{\circ}, 3^{\circ}, 9^{\circ}, 27^{\circ}, 41^{\circ}]$ $[1', 3', 9', 27']$ $[3'', 6'', 18'', 30'']$ and a right angle (square block). Sketch the arrangement.
 - e) With reference to surface finish measurement, define the following terms:
 - i) Primary texture,
 - ii) Secondary texture,
 - iii) Sampling length,
 - iv) CLA value.

5. Attempt any TWO of the following: 12

- a) With the help of neat sketches, illustrate procedure to carry out any two alignment tests on Lathe machine.
- b) Explain the principle of stylus probe type direct instrument measurement of surface finish.
- c) Write advantage and limitations of ISO 9000 implementation.

6. Attempt any TWO of the following: 12

- a) Sketch ideal and actual o.c. curve showing all parameters on it and define them.
 - b) Compare single, double and multiple sampling plan.
 - c) Define:
 - i) Process capability
 - ii) Process capability index C_pand describe stepwise procedure to calculate C_p .
-