

711

Register No.:

April 2024

*Time - Three hours*  
*(Maximum Marks: 100)*

- [N.B. 1. Answer all questions under Part-A. Each question carries 3 marks.  
2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.]

PART - A

1. Write the importance of BIS in metrology.
2. Draw the following metrological symbols.
  - (i) Position
  - (ii) Profile of line
  - (iii) Angularity
3. Draw the neat sketch of pitch screw gauge.
4. Compare comparator with measuring instruments.
5. Define pitch and lead of screw thread.
6. Write about the measurement of concentricity of gear teeth.
7. What is interferometry? Write the uses of laser in interferometry.
8. State the significant features of robots in computer aided inspection.
9. Write the advantages of stroboscope.
10. What is the basic difference between reference beam mode and interference fringe mode in LDA?

[Turn over.....

PART – B

11. (a) (i) Compare systematic error and random error. (4)  
(ii) Explain the needs for measurement. (6)  
(iii) Differentiate between precision and accuracy. (4)  
(Or)
- (b) (i) Explain the need for inspection. (7)  
(ii) What are the general rules for accurate measurement? (7)
12. (a) Explain the construction and working principle of universal bevel protractor with neat sketch.  
(Or)
- (b) Explain the construction and working of optical comparator with a neat sketch. Write its advantages and disadvantages.
13. (a) Explain the following  
(i) Measurement of effective diameter of internal thread. (7)  
(ii) Plug screw gauge. (7)  
(Or)
- (b) (i) Explain various elements of surface texture with sketch. (10)  
(ii) What are the limitations of Parkin's gear tester? (4)
14. (a) Explain gauging wire diameter from the diffraction pattern formed in laser with a neat sketch.  
(Or)
- (b) Explain the construction and working of computer controlled coordinating measuring machine.
15. (a) Explain how the torque is measured using strain gauge with a neat sketch?  
(Or)
- (b) Explain construction and working of hot wire anemometer with a neat sketch.

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