

22673

M.Tech. 3rd Semester (MAE) (CBSC Scheme)

Examination, December-2018

ADVANCED METROLOGY AND CALIBRATION

Paper- 16MMA 23C1

Time allowed : 3 hours]

[Maximum marks : 100

Note: Students are required to attempt any five questions.

The students have to attempt first common question, which is compulsory and one question from each of four units.

1. (a) Shaft basis system of tolerance.
(b) Surface texture parameters.
(c) Various types of micrometer.
(d) What do you mean by Calibration?
(e) What is dial guage?
(f) Purpose of depth-micrometer.
(g) Profile projector.
(h) List measuring instrument for flatness.

$2\frac{1}{2} \times 8 = 20$

Unit-I

2. Write about:
 - (a) Fundamental deviation and its calculation. 10
 - (b) Tolerance position and tolerance for bolt and nut. 10
3. Write in detail about surface errors. 20

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Unit-II

4. Discuss
- (a) Laser Micrometer. 10
 - (b) Various grades of slip gauges. 10
5. What is an Auto-collimator? What is its application? Explain its constructional details, working procedure and underlying principle. 20

Unit-III

6. Discuss about
- (a) Tool maker microscope. 10
 - (b) Optical flats. 10
7. Write about
- (a) Depth - micrometer. 10
 - (b) Surface plate. 10

Unit-IV

8. What is a Vernier Caliper? Discuss in detail with neat sketches. 20
9. Write notes on
- (a) Calculation of uncertainty. 10
 - (b) Co-ordinate measuring machine. 10