Reg. No. _____

Karunya University

(Karunya Institute of Technology and Sciences)

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

Model Question Paper

Subject Title: METROLOGY AND COMPUTER AIDED INSPECTION Time: 3 hours
Subject Code: ME281 Maximum Marks: 100

Answer ALL questions

PART – A (10 x 1 = 10 MARKS)

1. Define Sensitivity of an instrument.
2. List out the different types of standards:
3. Name the instrument designed on the principle of 'Screw and Nut'.
4. State any two limitations of the Sine Bar.
5. List the factors affecting surface roughness.
6. Define Concentricity.
7. State the two corrections to be applied for the measurement of effective diameter.
8. Define Module of a gear:
9. State the types of CMM.
10. Which type of Optical Flats has both the surfaces flat and parallel to each other?

PART – B (5 x 3 = 15 MARKS)

11. Write short note on ‘Readability’.
12. What are the two categories of measurement for which Clinometers can be used?
13. Compare Straightness test by using Spirit level and Auto Collimator.
14. Explain the various Pitch Errors in Screw Threads.
15. Explain about the Laser Equipment for Alignment Testing.

PART – C (5 x 15 = 75 MARKS)

16. Explain in detail, the different types of errors in measurement and their causes.

(OR)

17. Define Calibration. the standard procedure of calibrating a metrological instrument.

18. State the types of Comparators. Explain the Mechanical Comparator in detail.

(OR)

19. Explain with neat sketch, the principle and construction of an Autocollimator.

20. Explain in detail, the methods of measuring Surface Finish.

(OR)

21. Explain the construction and working of the Tool Makers Microscope.

22. Draw and explain the measurement of effective diameter of a screw thread using 3 – wire method.

(OR)

23. Explain in detail, the various Gear Errors.

24. a. Explain about the performance evaluation of CMM. (7)
    b. List out the applications of CMM. (8)

(OR)

25. Explain in detail, the principle and working of LASER Interferometer.