

**NETTUR TECHNICAL TRAINING FOUNDATION**  
**DIPLOMA IN TOOL ENGINEERING & DIGITAL MANUFACTURING – CP01**  
**II SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-JULY 2023**

**Subject: Metrology**  
**Subject Code: CP01207T**

**Total Time: 2 Hr.**  
**Total Marks: 50**

**PART B**

**1.0 ANSWER ANY EIGHT OF THE FOLLOWING**

**2\*8=16**

- 1.1 Explain the term tolerance.
- 1.2 How to specify taper in a drawing?
- 1.3 Why sine bar is used?
- 1.4 Write two causes for errors in spirit level reading.
- 1.5 List any two advantages of comparators.
- 1.6 List any two measuring techniques employed in Optical projectors.
- 1.7 What are the different types of CMM?
- 1.8 What is basic size?
- 1.9 What is meant by selective assembly?
- 1.10 Mention two types of standard tapers used in self holding taper.

**2.0 ANSWER ANY SIX OF THE FOLLOWING**

**3\*6=18**

- 2.1 How interchangeable parts are important during assembly?
- 2.2 Explain Nominal size and Actual size.
- 2.3 Explain the term fit and write three main classes of fit.
- 2.4 Explain the terms deviation and fundamental deviation.
- 2.5 Give the details of the fit 20H7/g6
- 2.6 Explain the terms Go and No Go Limits.
- 2.7 List the elements of taper with neat sketch.
- 2.8 Write short note on Profile Projector

**3.0 ANSWER ANY FOUR OF THE FOLLOWING**

**4\*4=16**

- 3.1 Differentiate between hole basis system and shaft basis system.
- 3.2 List six instruments used for measuring angles
- 3.3 With neat labeled sketch explain the working principle of dial indicator.
- 3.4 Draw a neat sketch of vernier bevel protractor and label the parts.
- 3.5 Distinguish between the term Upper deviation and Lower deviation
- 3.6 With a neat sketch explain the purpose of a sine centre

