BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

Question Bank for UT1 Sub- MAM (313316) Course- ME4K

Chapter No. 1 Overview of Metrology & Linear Measurement

Questions for 2 Marks

1. Define Metrology State the types of metrology
2. State the objectives of metrology
3. Define inspection. State any two need of Inspection
4. Define the term Range & Span.
5. Define the term Accuracy & Precision
6. Define the terms Repeatability & Reproducibility.
7. Define the terms Fidelity & Overshoot
8. Define the terms Threshold & Resolution
9. Define the terms Calibration & Sensitivity
10. Define Error. List errors type
11. Define Line standard & End standard
12. Define least count with example

Questions for 4 Marks

1. List down types of metrology and explain two of them.
2. Explain Inspection. Explain the Need of inspection.
3. Differentiate between Accuracy & Precision
4. Define Error and Explain its sources
5. List and explain short characteristics of measuring instruments
6. Explain criteria for Selection of measuring instruments
7. Explain precautions while using an measuring instruments
8. Explain various factors affecting on accuracy
9. Differentiate between Line, End, Wavelength standards
10. Explain with neat sketch working principle of Vernier caliper
11. Explain with neat sketch working principle of Micrometer
12. Explain with neat sketch working principle of Height gauge

Chapter No. 2 Gauges and Comparators

Questions for 2 Marks

1. Define comparator
2. Define wringing of Slip Gauges
3. State the types of comparator
4. List down uses of comparator
5. Write down any two merits and demerits of Dial indicator (2 each)
6. Write down any two merits and demerits of Pneumatic indicator (2 each)
7. Draw Dial Indicator mechanism
8. State Taylor's principle
9. Define Selective Assembly & any two advantages
10. Define Interchangeability & any two advantages

Questions for 4 Marks

1. Define comparator and explain requirement of good comparator
2. Explain working principle of Dial indicator with its advantages & disadvantages

3. Explain working principle of Pneumatic Comparator with its advantages & disadvantages
4. Explain Taylor's Principle Gauge with neat sketch
5. Explain A] Plug gauges B] Ring gauges C] Snap gauges D] Adjustable snap gauges
6. Differentiate between Dial Indicator & Pneumatic Comparator
7. Explain Wringing of Slip Gauges with neat sketch
8. Explain precautions in using slip gauges
9. Prepare stack of slip gauges for height 58.975 mm using set M112
10. Measure a distance of 63.875 mm with the help of slip gauges using M87 set of slip gauges. Show the arrangement with neat sketch.
11. Prepare a stack of slip gauges for height 34.468mm by using a normal set of M45.
12. Develop the dimension 42.424mm by using slip gauges set of M112 for following conditions.
    1. Without protection slips
    2. With protection slips of 2mm each from both sides.

Chapter No. 3 Angular, Screw Thread, Gear & Surface Finish Measurements

Questions for 2 Marks

1. State four instrument for angular measurement
2. State any four limitation of sine bar
3. Define Major Diameter & Minor Diameter
4. Define Effective Diameter with sketch
5. State the types of screw thread with sketch
6. Draw Gear tooth Vernier Caliper
7. Define A] Primary texture B] Secondary texture
8. Define RMS Value with neat sketch
9. Define CLA Value with neat sketch
10. Define Rz Value with neat sketch
11. Define Sampling length, flaw and Lay
12. List down types of Co-ordinate measuring machines

Questions for 4 Marks

1. Explain working of Bevel Protector with neat sketch & its two applications
2. Explain working of Sine bar with neat sketch & state its Limitations
3. Justify Sine bar does not use to measure the angle more than 45^{o}
4. Explain Parkinson's Gear Tester with neat sketch.
5. Explain the principle of measurement of gear tooth thickness using a Gear Tooth Vernier Caliper.
6. Explain how to find Major diameter on floating carriage
7. Explain how to find Effective diameter on floating carriage
8. Explain Best wire size with neat sketch.
9. Explain Two wire method for effective diameter measurement (EDM)
10. Differentiate Primary texture and Secondary texture
11. By using optical flat and monochromatic light source, explain how will you determine flatness of surface.
12. Explain working of Taylor Hobson Talysurf with neat sketch
13. List down types of Co-ordinate measuring machines and explain any two
14. List advantages of Co-ordinate measuring machines (Any 8)