



GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

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Name of Examination : **Summer 2021** - (Preview)

Course Code & Course Name : **ME351U - Metrology And Quality Control**

Generated At : **19-04-2022 14:57:32**

Maximum Marks : **60**

Duration : **3 Hrs**

[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

- 1) Solve any two sub-questions [12]
 - a) Differentiate between systematic errors and random errors. [6]
 - b) Explain the construction, working, and magnification of the sigma comparator with a neat sketch. [6]
 - c) Describe with neat sketch: (i) Straightness checking using a spirit level. (ii) Alignment testing of lathe centers in a vertical plane. [6]
- 2) Solve any two sub-questions [12]
 - a) State the various objectives of quality control. [6]
 - b) How major diameter is measured using a floating carriage micrometer? [6]
 - c) Differentiate between angle gauges and slip gauges (at least six points) [6]
- 3) Solve any two sub-questions [12]
 - a) What is Taylor's Principle as applied to the design of limit gauges? [6]
 - b) Prepare a stack of slip – gauges for Height 34.468 mm by using a normal Set of M45. [6]

Set M45 is,

Range (mm)	Steps in (mm)	Number of pieces
1.001 to 1.009	0.001	9
1.01 to 1.09	0.01	9
1.1 to 1.9	0.1	9
1 to 9	1	9
10 to 90	10	9
Total		45

- c) What is PDCA cycle? Explain. [6]
- 4) Solve all sub-questions [12]
 - a) state the relationship between various quality concepts [6]
 - b) Explain the quality audit procedure of ISO 9000. [6]
 - 5) Solve all sub-questions [12]
 - a) States the steps to Draw P-Chart and its objectives. [6]
 - b) Draw normal distribution curve and state its characteristics. [6]

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