

# TDM54 - Jigs, fixtures and gauges.

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REG. NO

OCTOBER 2021

Time: Three hours

Maximum Marks: 75

- Note:
1. Answer ALL the questions in PART-A (1 mark each)
  2. Answer any ONE question from each unit in PART-B (3 marks each)
  3. Answer any ONE question from each unit in PART-C (10 marks each)
  4. The question paper contains TWO Pages

## PART-A (1x10=10)

1. What is the function of work holder?
2. List any two elements of fixture.
3. Which type of bushes are used in jig to perform more than one operation in same location?
4. Write the materials used for making bush.
5. What is a pot jig?
6. What is self centering vice?
7. What is tennon block?
8. In which fixture work horn is used?
9. What is the difference between unilateral and bilateral tolerance?
10. List the types of gauges.

## PART-B (3x5=15)

### UNIT-I

11. List the advantages of jigs and fixture.
12. Define locational tolerance.

### UNIT-II

13. Compare Rigid and Elastic work holder.
14. List the types non mechanical clamping.

### UNIT-III

15. What are the basic requirements of a drill jig?
16. Sketch a channel jig.

### UNIT-IV

17. What are the important considerations while designing fixtures?
18. List the types of fixtures.

### UNIT-V

19. Write about gauge materials.
20. Sketch a ring gauge.

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PART-C (10x5=50)

UNIT-I

21. Explain Degrees of freedom and 3-2-1 principle of location with sketch.
22. Explain any one type of external locator and one type of internal locator with sketch.

UNIT-II

23. With a neat sketch explain Toggle action clamp and Cam action clamp.
24. Explain detail about slip renewable and slip fixed renewable bushing with sketches.

UNIT-III

25. Sketch and explain the construction and working of leaf drill jig.
26. Explain indexing jig with neat sketch.

UNIT-IV

27. Explain welding fixture with an example.
28. Design a plain milling fixture.

UNIT-V

29. Explain in detail about Taylor's principle of gauging.
30. Explain Screw pitch gauge and progressive snap gauge with sketches.

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