

SECTION-D

Note: Long answer questions. Attempt any two questions out of three Questions. (2x8=16)

- Q.23 Design and draw a drilling jig for drilling 5 equispaced holes of 10mm diameter on a Circular MS plate of 200mm diameter. The PCD of holes being 100mm.
- Q.24 Design and draw a suitable milling fixture for cutting a keyway of 50x10x10mm on a shaft of 50mm dia and 200 mm length.
- Q.25 Explain the stepwise procedure for designing a ring gauge with go and not go side. Draw the same, assuming suitable dimensions.

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Roll No.

4th Sem.

Branch : Mechanical (Tool & Die Design)

Sub. : Jigs. Fixtures & Gauges – Design & Drawing

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (6x1=6)

- Q.1 Which fixtures are used for machining parts having equally spaced machined features?
- a) Profile fixtures b) Duplex fixtures
- c) Indexing fixtures d) None of the above
- Q.2 In which of the following operation jigs are preferred over fixture?
- a) Drilling b) Tapping
- c) Milling d) Only A & B
- Q.3 With the use of Jigs and Fixture
- a) Labour cost decreases b) Labour cost increases
- c) Material cost increases d) Both A & C

- Q.4 Jigs are generally _____ than fixtures.
- Lighter
 - Heavier
 - Depends on the application
 - Depends on the size of job
- Q.5 Conical locator is best for locating the job, if the diameter of a hole may _____.
- Vary
 - Not vary
 - Be rectangular
 - Be circular
- Q.6 Number of degree of freedom of a work piece in space is equal to
- 3
 - 6
 - 9
 - 12

SECTION-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

- Q.7 The best quick acting clamping element in a fixture is ____.
- Q.8 Give one characteristic of progressive plug gauge.
- Q.9 For uneven shaped jobs ____ locator is best used.
- Q.10 Jigs and Fixtures are used for ____ production. (Job/Batch/Mass)

- Q.11 Which jig can drill in many directions?
- Q.12 Define inter changeability.

SECTION-C

Note: Short answer type Questions. Attempt any eight questions out of ten Questions. (8x4=32)

- Q.13 Explain 3-2-1 principle of location.
- Q.14 Describe the function and materials of bushes in jigs. Why those materials?
- Q.15 Classify drilling jigs. Explain any one with diagram.
- Q.16 Explain Taylor's principle of maximum material condition.
- Q.17 Explain gang milling fixture.
- Q.18 Draw any one Indexing fixture.
- Q.19 Explain the factors to be considered for selection of gauges for inspection.
- Q.20 Draw and explain channel jig.
- Q.21 Explain boring fixture.
- Q.22 Explain how fixtures help in interchangeability in mass production?