Q.17 Write short note on channel jig with its diagram.

Q.18 Draw a simple Go and Not Go gauge for ring gauge.

Q.19 Differentiate between plug and ring gauge.

Q.20 Draw a box type drilling jig with neat labeled parts.

Q.21 Draw and explain any indexing fixture.

Q.22 Enlist at least 8 differences between the jigs and fixtures.

SECTION-D

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

Q.23 Design and draw a drilling jig for drilling 4 equi-distance holes of 10 mm diameter on a rectangular MS plate 400mm x 200 mm x 60 mm. The pitch of holes being 100 mm.

Q.24 Design a suitable milling fixture for cutting a keyway of 8mm x 4mm on a shaft of 200 mm length x 40 mm dia.

Q.25 Write the procedure steps for designing a snap gauge with go and not go side. Assuming suitable dimensions draw the same.

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4th Sem./ Mechanical (Tool & Die Design)

Subject : Jigs, Fixtures and Gauges - Design and Drawing

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Drill jig bushings are normally hardened to

a) Protect the jig from damage

b) Ensure prolonged life to avoid wear and tear

c) Guide the tool so that it does not become inclined

d) Allow the chips to come out easily

Q.2 Jigs are generally _____ than fixtures.

a) Lighter

b) Heavier

c) Depends on the application

d) Depends on the size of job

Q.3 With the use of Jigs and fixture

a) Labour cost decreases

b) Labour cost increases

c) Material cost increases

d) Both a and c

Q.4 Which type of jig is used drilling on many directions?

a) Plate jig b) Post jig

c) Table jig d) Box jig

Q.5 If the diameter of a hole may be subjected to vary, then _____ type of locator will be best for locating the job in fixture.

a) Conical b) Cylindrical

c) Vee d) Diamond pin

Q.6 3-2-1 method of location in jigs and fixture, restricts_____ degree of freedom

a) 12 b) 6

c) 9 d) 18

SECTION-B

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

Q.7 Use of fixture mainly reduces_____ time. (production/ setting/both)

Q.8 Drill jig bush in drill jig is used to_____ the drill. (guide/locating/both)

Q.9 Define interchangeability.

Q.10 Jigs and Fixtures are used for_____ production (job/batch/mass)

Q.11 For roung shaped jobs_____ locator is best used.

Q.12 The best quick acting clamping element in a fixture is_____

SECTION-C

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

Q.13 Draw any one lathe fixture.

Q.14 Explain the working of any 4 locating devices with their diagrams.

Q.15 Draw and explain angle plate jig and template jig.

Q.16 What are the factors which you will consider while selection of gauges for inspection.