Q.23 Draw a multi point cutting tool with the function of its angles.
Q.24 Explain the principle of location.
Q.25 What are the uses of High Steel and Stelite?
Q.26 Explain any 5 locating devices.
Q.27 Name any 5 commercially available tool material and their compositions.
Q.28 What are the purposes of clamping elements?
Q.29 Write short note on need of jigs and fixtures.
Q.30 Write the advantages of bushing.
Q.31 Explain the types of clamps.
Q.32 Explain any one milling fixture with diagram.
Q.33 Enlist the types of drilling jigs. Draw any one.
Q.34 Draw and explain any one assembly fixture.
Q.35 Write the considerations while designing a jig and fixture.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain the tool geometry of single point cutting tool with diagram and nomenclature.
Q.37 Write short note on
i) throw away inserts
ii) Chip breaker
Q.38 Write short note on
i) welding fixture
ii) Reamers

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Subject:- Tool Engg- I

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 Which of the following is second hardest substance known ?
a) Ceramic
b) Cubic boron nitride (CBN)
c) Cermets
d) Diamond

Q.2 Corrundum is _____
a) Diamond b) abrasive
c) Ceramic d) All of the above

Q.3 The cutting tool wears due to
a) Edge wear b) Crater wear
c) Flank wear d) All of the above

Q.4 The cutting speed of High Speed Steel is_____ times faster than Carbon steels.
a) 2 b) 4
c) 6 d) 8

Q.5 Which of the following is not a constituents of High Speed Steel?

a) Vanadium b) Chromium

c) Tungsten d) Nickel

Q.6 Bushes are generally provided in a jig to_____

a) Locate the job b) Guide the job

c) Hold the job d) All of the above

Q.7 The use of fixtures mainly reduces_____

a) Only operation time

b) Only setting time

c) Tooling cost

d) Both setting and operation time

Q.8 Select an operation that does not require a jig:

a) Drilling b) Reaming

c) Tapping d) Turning

Q.9 3-2-1 principle is related to_____

a) Work sampling

b) Plant layout design

c) Tool design

d) Design of locating devices

Q.10 In which of the following operation jigs are preferred over fixture

a) Drilling b) Turning

c) Milling d) Grinding

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Toughness of a cutting tool means ability to withstand _____without failure.

Q.12 Name any two operations where we use single point cutting tool.

Q.13 Which is the hardest cutting tool material?

Q.14 With the use of jigs and fixtures, rate of production will_____

Q.15 Jigs and fixture increase the accuracy of parts (True/False)

Q.16 Jigs and fixtures are used to provide interchangability (True/False)

Q.17 Number of degree of freedom of a workpiece in space is equal to_____.

Q.18 3-2-1 is a point location_____.

Q.19 Clamping is used to_____ (function)

Q.20 Which material is normally used in making locating and clamping devices?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Write the mechanical properties of High Speed Steel.

Q.22 Write short note on regrinding a tool.