Scheme – I

Sample Question Paper

Program Name : Diploma in Mechanical Engineering
Program Code : ME
Semester : Fifth
Course Title : Tool Engineering (Elective)
Marks : 70 **Time: 3 Hrs.**

22565

Instructions:
(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following. **10 Marks**

a) Define term 'Chip Thickness Ratio.'
b) List the applications of 'Press Tool."
c) State ISO designation of Tool holders.
d) Define Term 'Fool Proofing.'
e) List the applications of fixtures.
f) State the importance of ' Centre of Pressure.'
g) State the applications of forging dies.

Q.2) Attempt any THREE of the following. **12 Marks**

a) Differentiate between orthogonal and Oblique metal cutting Process
b) Enlist the properties of Cutting Tool Material
c) Explain the construction of ' Hinged clamp' with neat sketch
d) Classify Jigs according to location, clamping, fool proofing and actuation

Q.3) Attempt any THREE of the following. **12 Marks**

a) Classify cutting dies? State their applications
b) Explain "spring back' in bending operation? State its causes
c) List different types of Strippers? Draw any one stripper with neat sketch
d) Explain '3-2-1'Principle of Location with neat sketch

e) Explain the following Drawing operations

i. Embossing

ii. Bulging

Q.4) Attempt any TWO of the following. 12 Marks

a) Draw Cutting Tool geometry of Single Point Cutting Tool? write the standard Values of 'Single point cutting Tool signature'

b) Explain in detail "Tool sharpening Method for single point Cutting Tool'

c) Suggest and draw the locators for following applications

1. Milling Machine Table
2. Drilling Machine tool holder

Give Justification for suggestions.

Q.5) Attempt any TWO of the following. 12 Marks

a) Draw neat sketch of 'Boring jig" State the principles considered in Designing Boring jig`

b) The washers of 20 mm outer diameter & 8 mm inner diameter are to be made by press operation from M.S. Sheet of 1 mm thickness.

Calculate

(i) Clearance,

(ii) Size of punch & die.

c) With neat sketch describe following with respect to forging die.

1) Draft

2) Fillet

3) Corner radii

Q.6) Attempt any TWO of the following. 12 Marks

a) Differentiate between jigs and fixtures? State the importance of Jigs and Fixture in Machine tool applications.

b) A sheet of 75 mm diameter is to be drawn and its height has to be 200 mm calculate the:

(i) Diameter of blank

(ii) Calculate no. of draws.

(iii) Radius on punch and die

c) Draw general assembly sketch of Progressive die showing all the components

Scheme – I

Sample Test Paper - I

Program Name : **Diploma in Mechanical Engineering**

Program Code : **ME**

22565

Semester : **Fifth**

Course Title : **Tool Engineering (Elective)**

Marks : **20** **Time: 1 Hour**

Instructions:

(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR. **08 Marks**

a. State the principle of tool engineering
b. List different types of Chips
c. List the applications of 'CBN' inserts
d. Write ISO designation of Tool holders
e. State the use of Clamping Device
f. Name different Locators

Q.2 Attempt any TWO **12 Marks**

a. Explain' Merchant Circle' with neat sketch
b. Explain with neat sketch the construction of 'Adjustable Step Clamp' of Milling machine
c. State the concept of Degree of freedom with suitable Example

Scheme – I

Sample Test Paper - II

Program Name : **Diploma in Mechanical Engineering**
Program Code : **ME**
Semester : **Fifth**
Course Title : **Tool Engineering (Elective)**
Marks : **20**

22565

Time: 1 Hour

Instructions:
(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR. **08 Marks**

a. Define term- Jig
b. State the importance of Fixtures
c. Define term ‘ Die clearance
d. List the applications of ‘Press Tool”
e. List the operations performed using Drawing operations
f. Name different Forging Dies

Q.2 Attempt any TWO. **12 Marks**

a. Explain the important principles of Jig Design
b. List different types of Strippers? Draw any one stripper with neat sketch
c. State the factors on which bending pressure depends. Explain the procedure for calculating blank size for drawing a cup?