TED (15/19)-4023
(Revision-2015/19)

**N21-04248**

Reg.No…….....
Signature. .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE –NOVEMBER -2021.

# METALLURGY AND MACHINE TOOLS

(Maximum Marks : 75) [Time : 2.15 hours]

## PART–A

Marks

**I.** Answer **any three** questions in one or two sentences. Each question carries 2 marks.

1. What is Hypo eutectoid steel
2. Define Machinability
3. State the use of a sleeve in drilling
4. What is Straddle Milling
5. List the different types of Shaper operations

(3x2=6)

## PART - B

**II** Answer **any four** of the following questions . Each question carries 6 marks.

1. List the advantages of Powder metallurgy
2. List the properties of cutting fluids
3. Explain Orthogonal and Oblique cutting
4. Draw a neat sketch of a Twist drill and label the parts
5. Name the parts of an indexing head with sketch
6. Sketch and explain the working principle of Shaper
7. Compare Shaper and Planner

(4x6 =24)

## PART - C

(Answer **any of the three units** from the following. Each full question carries 15 marks)

### UNIT I

**III** (a) Describe the continuous Cooling Transformation diagram (CCT) with sketch (8)

(b) List the various stages of manufacturing of metal power and explain Atomization (7)

**OR**

**IV** (a) Draw the Iron carbon diagram showing various phases (8)

(b) Explain

i) Normalising ii) Tempering (7)

### UNIT- II

**V** (a) Explain the different types of chip formation (8)

(b) Describe the different methods of application of lubrication (7)

**OR**

**VI** (a) List the different taper turning methods, Explain Compound rest method (8)

(b) Explain the operations, Centring, Drilling and Boring in a Lathe (7)

### UNIT- III

**VII** (a) Draw a Radial drilling machine and label the parts (8)

(b) Describe Gang milling with sketch (7)

**OR**

**VIII** (a) Describe the sequence of operations carried out by milling machine during spur gear cutting (8)

(b) List the different work holding devices in a drilling machine (7)

### UNIT-IV

**IX** (a) Describe Crank and slotted link mechanism of a shaper with sketch (8)

(b) Describe feed mechanism of a Shaper with sketch (7)

OR

X (a) Draw a line sketch of a Shaper and label parts (8)

(b) Describe open and Cross belt drive of a Planer with sketch (7)

**********