22491

12425

03 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following : **10**

a) Define cavity and core.

b) Define ferrous metal. Enlist any two ferrous metals.

c) State the significance of measuring hardness of metal.

d) State the basic principle of lathe machine.

e) Enlists the names any two modern machine used for manufacturing mould components.

f) Define case hardening.

g) State the need of inspection of all mould components.

Marks

2. Attempt any FOUR of the following : **12**

a) Draw and describe the role of register ring.

b) State any three properties and applications of P-20 steel.

c) State the basic principle of band saw with neat labelled diagram.

d) State the concept of close loop CNC machining.

e) Explain emery polishing method.

3. Attempt any FOUR of the following : **12**

a) Draw and explain role of sprue bush.

b) State the properties of stainless steels.

c) Explain up milling process with neat diagram.

d) Describe annealing process and state its important any three advantages.

e) Draw and explain direct bolting method.

4. Attempt any THREE of the following : **12**

a) Draw the diagram of bolster which is having enclosed chase. Explain its applications.

b) Select the steel having carbon percentage in the range of 0.10 to 0.30%. State its any four important properties.

c) Justify "Modern machining techniques are superior than coventional machining techniques for manufacturing of mould components."

d) Describe the surface hardening technique where metal surface hardened by flame.

e) Explain step wise bench fitting process of mould.

Marks

5. Attempt any THREE of the following : **12**

a) Select the mould components which ensures proper alignment and locking of two mould halves. Draw and explain those components.

b) State any four important properties and any four applications of aluminium.

c) Select the metal for manufacturing following componants of mould.

i) Cavity plate

ii) Sprue bush

iii) Register ring

iv) Guide pillar

d) Describe construction and working of surface grinding machine with neat diagram.

e) Explain case hardening process where surface is hardened by carbon gas.

6. Attempt any TWO of the following : **12**

a) Suggest the modern machining technique where tool is used as cathode and workpiece is used as anode. Draw and explain the technique.

b) Draw and explain construction and working of engine lathe. List any four operations done on lathe machine.

c) Illustrate the step wise diamond polishing technique.
