17306

11819

3 Hours / 100 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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any SIX of the following : **12**

(a) What is ferrous metal ? Give any two example of it.

(b) Classify plain carbon steel.

(c) What is 18-4-1, H.S.S. ?

(d) What is thermo plastic ? Give two examples.

(e) List any four types of cast iron.

(f) Write any two purposes of heat treatment.

(g) State two functions of gating systems.

(h) Enlist types of cutting tools.

(B) Attempt any TWO of the following : **8**

(a) Differentiate between gray cast iron and white cast iron. (any four points)

(b) State different alloys of copper. State its important properties.

(c) Write composition and applications of gun metal.

2. Attempt any FOUR of the following : **16**

(a) Define an alloy steel ? Write the effect of any two alloying element on steel.

(b) Differentiate between thermo plastic and thermo setting plastic.

(c) Define Annealing. Write four purposes of annealing.

(d) Draw the iron-iron, carbide phase equilibrium diagram and show all critical temp on it.

(e) What is normalizing ? State its four objectives.

(f) Compare between flame hardening and induction hardening.

3. Attempt any FOUR of the following : **16**

(a) State the different types of pattern explain any one with neat sketch.

(b) List various allowance provided on pattern. Explain any two in brief.

(c) What are different types of foundries ? Enlist two advantages and disadvantages of foundry process.

(d) Enlist with meaning the standard accepted colour codes used for pattern.

(e) State the different properties of moulding sand.

(f) What is core print ? Explain any two types of core print with neat sketch.

4. Attempt any FOUR of the following : **16**

(a) Enlist different moulding process. Explain shell moulding process with neat sketch.

(b) Draw a neat sketch of gating system. State the following terms : (i) runner (ii) pouring basin.

(c) Explain with neat sketch true centrifugal casting.

(d) Explain any two defects in casting with its causes and remedies.

(e) Explain different types of chips observed while machining.

(f) Draw a neat sketch of three jaw chuck & explain why is it more convenient than four jaw chuck.

5. Attempt any FOUR of the following : **16**

(a) Draw a neat sketch of single point cutting tool and show the different parts and angle on it.

(b) What are different types of cutting tool materials ? State their specific use.

(c) State four properties and purposes of cutting fluid.

(d) Draw block diagram of lathe machine. Write function of tail stock and carriage.

(e) State any four accessories used on lathe. Explain any two accessories.

(f) What is working principle of lathe ? How lathe machines are classified ?

P.T.O.

6. Attempt any FOUR of the following : **16**

(a) Draw a neat sketch of column and knee type milling machine and explain function of any two parts.

(b) Explain end milling operation with neat sketch.

(c) What are different standard milling cutters ? Describe suitability of any two.

(d) List the parts of drilling machine write function of any two parts.

(e) How drilling machine are classified ? State various operation performed on drilling machine.

(f) Explain with neat diagram any two lathe operation.
