

17402

15116

3 Hours / 100 Marks

Seat No.

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- 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:

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- (i) State rolling principle with neat sketch.
- (ii) Define forging operation. Classify it.
- (iii) Give function of flywheel in mechanical press.
- (iv) State different types of dies.
- (v) Why colour coding of pattern is required?
- (vi) Write name of any four patterns.
- (vii) Write any four properties of moulding sand.
- (viii) Classify melting furnace in casting process.

P.T.O.

b) Attempt any TWO of the following:**08**

- (i) Differentiate between brazing and soldering (Any four points).
- (ii) Name taper turning methods on Lathe. Explain any one.
- (iii) Explain calendaring with neat sketch.

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

- a) Compare Notching with Lancing operation (At least four points)
- b) Describe drawing operation in press working.
- c) Explain “investment casting” with neat sketch.
- d) Explain any four casting defects with causes of formation.
- e) Explain bending operation with neat sketch.
- f) Differentiate between hot chamber die casting and cold chamber die casting. (Any four points each)

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

- a) Compare hot rolling with cold rolling process (At least four points)
- b) Draw neat sketch of cupola furnace and label its various zones.
- c) Draw neat sketch of direct extrusion and explain its working.
- d) Define and write expression for following terms with reference to lathe machine:
 - (i) Cutting speed
 - (ii) Feed
 - (iii) Depth of cut
- e) Differentiate between TIG and MIG welding process (Any four points)
- f) Draw neat sketch of Radial Drilling Machine and write function of each part.

- 4. Attempt any FOUR of the following:** **16**
- a) Compare Press forging with Drop forging. (Any four points)
 - b) Explain three high rolling mill with neat sketch.
 - c) Explain “Electric Arc furnace” with neat sketch.
 - d) Explain nomenclature of twist drill.
 - e) Explain with neat sketch “counter boring operation”.
 - f) Explain compression moulding with neat sketch.
- 5. Attempt any FOUR of the following:** **16**
- a) Describe open die forging with neat sketch.
 - b) Describe forward extrusion process with neat sketch.
 - c) Draw neat sketch of shearing operation and describe in brief.
 - d) Explain “Combination die” with neat sketch.
 - e) Explain “Elements of gating system” in casting process.
 - f) Explain any two types of core with neat sketch.
- 6. Attempt any TWO of the following:** **16**
- a) Explain with neat sketch
 - (i) Projection welding
 - (ii) Seam welding
 - b) What is Injection Moulding? Draw neat sketch. Write four applications in industry.
 - c) What is taper? Give taper angle calculation in turning operation with sketch.
Find half taper angle for turning operation on Lathe machine.
Major diameter = 30 mm
Minor diameter = 20 mm
Length of taper = 40 mm
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