Register No.: | |

1929

October 2024

Time – Three hours
(Maximum Marks: 100)

[N.B. Answer all the questions, choosing any two subdivision from each question. Each subdivision carries 10 marks.]

1. (a) List the various types of pattern. Explain any two types of pattern used in mould making.

   (b) Explain the CO_2 moulding process.

   (c) Write the step by step procedure for making green sand mould.

   (d) (i) Sketch a hot chamber die casting machine and label the parts. (5)
   (ii) List any three casting defects and their causes. (5)

2. (a) Explain about TIG welding process with a sketch.

   (b) (i) Write the procedure followed for oxy-acetylene welding.(5)
   (ii) Draw the three types of welding flames obtained in oxy acetylene welding process.(5)

   (c) Describe the following processes.
   (i) Spot welding (5) (ii) Hard facing (5)

   (d) Discuss any two non-destructive tests of welded joints.

3. (a) (i) Define hot working. State the advantages of hot working. (5)
   (ii) Explain the Upset forging operation. (5)

   (b) Explain the following operations with sketches.
   (i) Blanking (5) (ii) Trimming (5)

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(c) Explain the working of mechanical press with any one driving mechanism.

(d) Describe the following processes.
(i) Smith forging (5) (ii) Curling (5)

4. (a) (i) Describe the atomization process in the manufacture of metal powders. (5)
(ii) Write short notes on how powders are compacted. (5)

(b) Write the design rules for powder metallurgy.

(c) Describe the iron – carbon equilibrium diagram.

(d) Explain the tempering processes. Also write any two advantages and limitations.

5. (a) Sketch and explain the working of three jaw chuck.

(b) Sketch and explain the working of the following tool holding devices: (i) Socket (5) (ii) Arbors (5)

(c) Sketch and explain the working of jig saw.

(d) Sketch and explain the working of
(i) Impact wrench (5) (ii) Reciprocating cutter (5)
