

Mechanical Technology : 2 SCT 2

P. Pages : 2

Time : Three Hours

**AW - 3546**

Max. Marks : 80

- Notes : 1. Answer **three** question from Section A and **three** question from Section B.
2. Due credit will be given to neatness and adequate dimensions.
3. Illustrate your answer necessary with the help of neat sketches.

1. a) Describe various ferrous and non ferrous metals used in foundry along with characteristics and use of each. 7
b) What are factors governs the selection of furnace? Describe with sketch direct electric arc furnace. What are its merits and demerits over other type of furnaces. 7

OR

2. a) Discuss the technological properties of metals. How these properties affects the behaviour of metal. 7
b) Describe with sketch blast furnace. Explain its operations and zones. 7
3. a) Describe with sketch. 8
i) balanced core & chaplet. ii) match plate pattern.
iii) core seat & core print.
b) Describe properties of core sand. What are its contents. Sketch any two core boxes. 5

OR

4. a) Compare 7
i) pattern and casting. ii) green sand and dry sand molding.
b) Describe different type of pattern making allowances why it is required? What is negative allowance? 6
5. a) Compare sand casting and die casting. What are advantages of die casting over sand casting. 6
b) Enlist various forging operations. Describe with sketch machine forging. 7

OR

6. a) What do you mean by destructive testing and non destructive testing? Describe with sketch ultrasonic inspection method for testing of casting with its applications. 6
b) Describe causes and remedies of following casting defects. 7
i) Hot tear. ii) Run outs
iii) Cold shut and mis run.
7. a) Describe various methods of transmission of speeds used in machine tools. 6

- b) Describe quick return mechanism used in hydraulic shaper.

7

OR

8. a) What are simple and compound gear trains. Describe each and explain how these are used in machine tools by quoting suitable example.

- b) Describe any two mechanisms used in machine tools to obtain variety type of motion.

9. a) With sketch describe cylindrical grinding.

7

- b) Describe

7

- i) cutting fluids.

- ii) difference in shaper and planer.

OR

10. a) Describe simple and differential indexing as used in milling.

7

- b) Describe

7

- i) facing and turning.

- ii) gear cutting.

11. a) Compare soldering, brazing & welding along with definition, application of each.

6

- b) What is "Thermit mix"? Describe with sketch Thermit welding along with its application and merits, demerits over other welding method.

7

OR

12. a) Describe oxidizing flame with sketch compare with other flames Explain how gas cutting is done alongwith sketch of gas cutting torch.

7

- b) How Resistance weldings are classified? Describe with sketch seam welding.

6
