



- 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. Diagrams and chemicals equations should be given wherever necessary.
 4. Illustrate your answer necessary with the help of neat sketches.
 5. Discuss the reaction, mechanism wherever necessary.

SECTION – A

1. a) State and discuss important properties of non-ferrous metals & alloys. 7
b) What are different manufacturing processes? Explain any two. 7

OR

2. a) Classify non-ferrous metals. Name the various nickel based alloys with their uses. 7
b) What are the different properties of metals used in foundry? 7
3. a) List the various pattern allowances. Explain any three. 6
b) Explain the requirement of good gating system. Sketch the common gating system. 7

OR

4. a) Explain the following:- 6
1) Core sand preparation. 2) Green sand.
b) Discuss various properties of moulding sand. 7
5. a) State and explain various casting defects with its causes and remedies. 7
b) Describe Investment casting process with neat sketch. 6

OR

6. a) Explain with neat sketches a slush casting method and die casting method. 7
b) Explain permanent mould casting with its sketch. 6

SECTION – B

7. a) What is tool life? Explain the various factors influencing on tool life. 6
b) What are cutting tool materials? Explain any two. 7

OR

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| 8. | a) | Explain compound gear trains with neat sketch. | 7 |
| | b) | Discuss the desirable properties of a cutting fluid. | 6 |
| 9. | a) | State and explain various parts of lathe machine. Any three. | 7 |
| | b) | Specify and explain drilling machine. | 6 |

OR

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| 10. | a) | Discuss various operations to be performed on Lathe machine. | 7 |
| | b) | State and explain various parts of shaper machine. | 6 |
| 11. | a) | Differentiate between brazing and soldering give its applications. | 7 |
| | b) | Explain Gas welding process with its sketch. | 7 |

OR

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| 12. | a) | Explain electric arc welding process with its limitations. | 7 |
| | b) | Explain Thermite welding with its neat sketch. | 7 |
