

**Manufacturing Processes – I**

P. Pages : 2

Time : Three Hours



**NJR/KS/18/4370/4394**

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Solve Question 11 OR Questions No. 12.
  8. Due credit will be given to neatness and adequate dimensions.
  9. Assume suitable data whenever necessary.
  10. Diagrams and chemical equations should be given whenever necessary.
  11. Illustrate your answers whenever necessary with the help of neat sketches.
  12. Use of non programmable calculator is permitted.

1. a) Why allowances are provided on pattern? Discuss the importance of Shrinkage allowance. 7
- b) Explain core making in brief? Discuss collapsibility of cores. 6

**OR**

2. a) Discuss shell moulding in detail with neat sketches. 6
- b) Explain the various types of cores used in foundry practice with neat sketches. 7
3. a) Explain with neat sketch the elements of gating system with their role in getting the sound castings. 7
- b) What is die casting? What metals are most often used for die casting and why? State advantages and application of the process of die casting. 7

**OR**

4. a) Explain construction and operation of cupola furnace with neat sketch. 7
- b) State the methods of cleaning the casting. Discuss the method used for cleaning small size casting. 7
5. a) Discuss in detail the TIG system of arc welding with neat sketch and give its applications. 7
- b) Compare Submerged Arc Welding (SAW) and Shielded Metal Arc Welding (SMAW). 7

**OR**

6. a) What are the different flames obtained in oxy-acetylene welding? Explain. 7
- b) Discuss Spot, Seam and projection resistance welding processes with their applications. 7

7. a) Explain the 'Rolling process' with neat sketch indicating various zone angles. 7  
b) Explain the working principle of forging process. Differentiate between forging hammers and forging press. 6

**OR**

8. a) Discuss "Drawing" and "Extrusion" process in detail. 6  
b) How does direct extrusion differs from indirect extrusion? Discuss their relative merits and demerits. 7
9. a) Explain the "Press Terminology" and its various elements with neat sketch. 7  
b) Explain the following die Cutting operation. 6  
i) Blanking. ii) Punching.  
iii) Perforating. iv) Lancing.

**OR**

10. a) Discuss with neat sketch of drawing and Bending operation in detail. 7  
b) How the dies are classified? Explain the progressive die with neat sketch. 6
11. a) How plastics are classified? Differentiate between thermoplastics and thermosetting plastics. 7  
b) Explain screw injection molding process with help of neat sketch. 6

**OR**

12. a) Discuss with neat sketch the transfer moulding process in detail. 7  
b) Describe the method which is Suitable for the manufacturing of plastic bottles with neat sketch. 6

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