

III B.Tech. I Semester Regular Examinations, November -2006
PRODUCTION TECHNOLOGY
(Automobile Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Enumerate different pattern allowances with an example. [6]
(b) Discuss various advantages and disadvantages of materials used for patterns. [5]
(c) Write the specific properties of a sand mould. [5]
2. (a) Describe centrifugal casting process. [6]
(b) Describe the operation of a cupola furnace for melting cast Iron. [6]
(c) Enumerate different types of Risers. [4]
3. (a) Explain the process of Oxyfuel Gas welding. [6]
(b) Describe the process of cutting of metals with water plasma. [5]
(c) Write about the process of Forge welding along with its application. [5]
4. (a) Explain
 i. Recovery
 ii. Grain Growth [6]
(b) List different types of Rolling mills with neat sketches [10]
5. (a) Derive an expression for maximum work load per unit width in the case of Bending. [8]
(b) Write the classification of presses. [10]
6. (a) Enumerate different types of Forging. [8]
(b) Enumerate Forward Extrusion and Backward extrusion with neat sketches [8]
7. (a) Give an account of process of explosive welding. [6]
(b) Enumerate different brazing techniques used in practice. [5]
(c) Enumerate destructive tests used to test welded joints. [5]
8. (a) Enumerate different types of plastics. [6]
(b) Explain the principle and working of Blow moulding. [6]
(c) List out general properties of Thermoplastics. [4]

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1. (a) Explain how a pattern is different from the final product (casting). [6]
(b) Differentiate between pressurized and unpressurized Gating systems with reference to the applications. [5]
(c) What is a Gating system? Explain briefly. [5]
2. (a) Explain the mechanism of solidification in alloys. [6]
(b) Describe the constructional features of a cupola furnace. [6]
(c) Write about the function of a Riser. [4]
3. (a) Describe the process of Arc welding. [5]
(b) List different welded joints and factors for their choice. [5]
(c) Enumerate any two types of resistance welding. [6]
4. (a) Explain in detail TIG and MIG welding processes and distinguish between them. [10]
(b) Enumerate the Non-destructive tests used for testing of welded joints. [6]
5. (a) Derive an expression for Driving power per roll. [8]
(b) Explain:
 - i. Strain hardening
 - ii. Recovery
 - iii. Recrystallization
 - iv. Grain Growth [8]
6. (a) Explain the process of wire drawing. [6]
(b) Enumerate different Forming processes with neat sketches. [6]
(c) Explain coining process. [4]
7. (a) Explain the following
 - i. Smith forging
 - ii. Drop forging
 - iii. Roll forging
 - iv. Rotary forging [12]
(b) Explain the principle of Impact Extrusion with a neat sketch. [4]

8. (a) List out general properties and applications of Thermosetting plastics. [8]
(b) Explain the principle and working of Injection moulding with a neat sketch. [8]

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1. (a) Explain why a casting may have a slightly different shape than the pattern used to make the mould. [10]
(b) What is the ideal profile of sprue? Explain how it is actually practised. [6]
2. (a) Explain the mechanism of solidification in pure metals. [6]
(b) Describe the operation of a cupola furnace for melting cast Iron. [6]
(c) Enumerate different types of Risers. [4]
3. (a) Describe the process of resistance welding. [6]
(b) Explain with neat sketches different types of weld positions in arc welding. [5]
(c) Distinguish between AC and DC arc welding processes. [5]
4. (a) Explain soldering and Brazing processes. [6]
(b) List out various welding defects along with their cause and remedy. [10]
5. (a) Derive an expression for Roll separating force. [8]
(b) Compare the properties of cold and hot worked parts. [8]
6. (a) Enumerate the following Bending processes with neat sketches.
 i. U-shape
 ii. Bead [6]
(b) Write about spinning process and tube drawing process. [10]
7. (a) What are the different types of Extrusion? Explain neat sketches. [8]
(b) Enumerate various tools used in Forging. [8]
8. (a) List out General properties and applications of Thermoplastics. [8]
(b) Explain the principle and working of Blow moulding. [8]

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1. (a) Enumerate different types of patterns with their applicaton. [10]
(b) Explain the parameters which cause the pouring time of a given casting to vary. [6]
2. (a) Explain Die casting process. [5]
(b) Write about the process of designing a Riser. [6]
(c) Describe Investment casting process. [5]
3. (a) Describe the process of Thermit welding. [5]
(b) Enumerate different welding processes and their characteristics. [8]
(c) Explain Oxyacetylene Gas cutting process. [3]
4. (a) Enumerate the process of Induction welding. [5]
(b) What are various welding defects. [5]
(c) What is LASER? Explain the principle of using LASER for welding. [6]
5. (a) Explain:
 i. Strain hardening
 ii. Recrystallization
(b) Distinguish between Hotworking and cold working. [6]
(c) Explain the principle of rolling. [4]
6. (a) Explain how clearance effects the process of punching and Blanking. [6]
(b) What are the different parts of a press? Explain with a neat sketch. [10]
7. (a) Write about Impact Extrusion and Hydrostatic Extrusion. [8]
(b) Enumerate various forging defects and remedies for them. [8]
8. (a) What are the diffeent characteristics of plastics. [8]
(b) Explain the principle and working of Injection moulding. [8]
