

Code No: R21241

**R10****SET - 1**

**II B. Tech I Semester Regular Examinations, March – 2014**  
**PRODUCTION TECHNOLOGY**  
(Auto Mobile Engineering)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions  
All Questions carry **Equal** Marks  
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1. a) What metals are generally used for making patterns? Explain the reasons for their selection.  
b) Give a brief write up on following casting terms: Sprue, Gate, Runner, Riser. (8M+7M)
2. a) What purpose is served by the risers in sand casting? Explain the principles of design of risers.  
b) With the help of a diagram, explain the working of a cupola. (8M+7M)
3. a) Explain the method of oxy-acetylene gas cutting operation used in industrial practice.  
b) Describe Thermit welding process. What are its advantages and applications? (8M+7M)
4. a) Write a brief note on explosion welding and friction welding.  
b) How is brazing different from welding. (8M+7M)
5. a) What are the different types of rolling mills? Explain their applications.  
b) What are the specific merits of cold working over hot working? (8M+7M)
6. a) Explain the following.  
i) Blanking and Piercing ii) Wire drawing and Tube drawing  
b) Differentiate between coining and embossing operations. Suggest the presses used for these operations. (8M+7M)
7. a) Explain forward extrusion and backward extrusion.  
b) Sketch and explain forging hammers and presses. What are the advantages of press forging over drop forging? (7M+8M)
8. a) What are the factors that influence the accuracy to which plastic parts can be moulded?  
b) What are the characteristics of thermoplastics? (8M+7M)

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**R10****SET - 2**

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1. a) Write a short note on the following with sketches  
i) Cope and drag pattern      ii) Skeleton pattern.  
b) What is gating ratio? How ingate positions and size are determined. (8M+7M)
2. a) What do you understand by centrifugal casting? How are the centrifugal casting methods classified?  
b) Differentiate between crucible melting and cupola operations. (8M+7M)
3. a) Explain the resistance welding process giving the equipment, parameters controlled and their applications.  
b) What is filler metal? Explain its importance in welding process. (8M+7M)
4. a) Write a short note on laser beam welding, detailing the applications.  
b) Explain about TIG and MIG welding techniques. Give the applications of each. (7M+8M)
5. a) Compare the properties of metals while they undergo recovery, recrystallisation and grain growth.  
b) Briefly explain various methods available for breakdown passes in rolling. Explain their applications. (8M+7M)
6. a) Explain types of presses and press tools.  
b) Why is it necessary to provide proper clearance between the punch and die in shearing operation? Give reasons. (7M+8M)
7. a) What is extrusion ratio? Discuss the advantages of extrusion process.  
b) Give a brief description of the forging defects and their remedial methods. (8M+7M)
8. a) How do you classify plastic materials? Explain.  
b) What is the principle advantage of casting method of moulding plastic parts? (8M+7M)

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**R10****SET - 3****II B. Tech I Semester Regular Examinations, March – 2014****PRODUCTION TECHNOLOGY**

(Auto Mobile Engineering)

Time: 3 hours

Max. Marks: 75

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All Questions carry **Equal** Marks

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1. a) What are the advantages of casting process and mention its applications.  
b) Explain briefly about various type of pattern allowances. (8M+7M)
2. a) Name few special casting processes and mention their applications.  
b) Explain the formation of shrinkage cavities in steel casting. How do you eliminate/reduce them? (7M+8M)
3. a) Describe the oxy-acetylene gas welding technique and give the applications.  
b) Explain Forge welding process and give its applications. (8M+7M)
4. a) What are the common welding troubles, causes and remedies for them?  
b) Distinguish between brazing and soldering and give the applications. (8M+7M)
5. a) Explain the following:  
i) Theory of rolling ii) Cold working process  
b) Explain the various rolling processes and variety of products obtained in rolling. (8M+7M)
6. a) Differentiate between shallow and deep drawing. What is the effect of blank holding force in deep drawing?  
b) Why are the punch radius and die radius essential in a drawing operation? (8M+7M)
7. a) What are the differences between impact extrusion and cold extrusion forging?  
b) Explain about different types of forging operations with neat sketches. (8M+7M)
8. a) What are the advantages of plastics over non-plastics materials?  
b) Explain the various methods available for injection moulding of plastics. Give the comparative advantages and applications for the same. (6M+9M)

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**R10****SET - 4****II B. Tech I Semester Regular Examinations, March – 2014****PRODUCTION TECHNOLOGY**

(Auto Mobile Engineering)

Time: 3 hours

Max. Marks: 75

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All Questions carry **Equal** Marks

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1. a) Describe the various types of commonly used patterns and their applications.  
b) Differentiate between pressurized and Non pressurized gating systems with reference to the applications. (8M+7M)
2. a) Describe the need of investment casting. Explain in detail the investment casting process.  
b) What purpose is served by the risers in sand casting? Explain the principles of design of risers. (8M+7M)
3. a) Explain the kinds of joints that are normally employed for welding processes? Give their sketches.  
b) Write a short note on the plasma-arc welding process. (8M+7M)
4. a) Explain about welding defects. Discuss the destructive and non destructive tests that are conducted on welds.  
b) Differentiate between brazing and braze welding techniques. (8M+7M)
5. a) What are the main characteristics of hot working as compared with cold working process?  
b) What are the advantages and disadvantages of hot rolling? (8M+7M)
6. a) Explain hot spinning and cold spinning operations and give their applications.  
b) Distinguish between bending and drawing in sheet-metal operations. (8M+7M)
7. a) Sketch and explain impact and hydrostatic extrusion processes and their advantages.  
b) Discuss drop forging and roll forging. Explain how forging improves the mechanical properties of components. (7M+8M)
8. a) How do thermoplastics differ from thermosetting plastics?  
b) What is blow moulding? Explain with a neat sketch. (8M+7M)