Code No: R21241 **R10** SET - 1

II B. Tech I Semester Supplementary Examinations, September - 2014
PRODUCTION TECHNOLOGY
(Auto Mobile Engineering)

Time: 3 hours Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
~~~~~~~~~~~~~~~~~~~~~~~~

1. a) Discuss the steps involved in making of a casting
   b) What is meant by core prints? Explain how they are to be provided.

2. a) Is there any difference in the tendency for shrinkage void formation for metals with short and long freezing ranges, respectively? Explain
   b) State some of the pitfalls to be avoided in the design of a die casting.

3. a) Describe the reactions that take place in an oxy-fuel gas torch. What is the level of temperatures generated?
   b) Explain the difference between resistance seam welding and resistance spot welding.

4. a) What are the defects that are generally found in welding? Describe their causes and remedies.
   b) What are the differences between TIG and MIG welding processes?

5. a) What are the specific merits of cold working over hot working? Explain with reasons.
   b) Briefly explain various methods available for breakdown passes in rolling. Explain their applications.

6. a) What is wire drawing? Explain its necessity.
   b) Explain the influence of the following parameters on the component produced:
   i) Drawing speed ii) Draw die radius

7. a) List the different stages in the Drop forging process for producing a spanner.
   b) What are the lubricating methods employed for the backward hot extrusion of steels? Explain.

8. a) What are the various components which make up a moulding compound for plastics? Explain the function of each.
   b) What are the different types of moulds used in Injection moulding? Give their relative applications.
~~~~~~~~~~~~~~~~~~~~~~~~

Code No: R21241 **R10** SET - 2

II B. Tech I Semester Supplementary Examinations, September - 2014
PRODUCTION TECHNOLOGY
(Auto Mobile Engineering)

Time: 3 hours Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
~~~~~~~~~~~~~~~~~~~~~~~~

1. a) What is a draft allowance? How is it provided for patterns? Briefly discuss why draft allowance is important for patterns.
   b) Compare the bottom gate with the top gate including their its merits and demerits.

2. a) What is fluidity of molten metal and what are the characteristics of molten metal that influence its fluidity? Explain
   b) Explain the permanent mould casting process, and how it differs from other processes of casting.

3. a) What is Thermit welding? Explain the operation and its applications.
   b) Explain the effects of the torch speed on the cut in gas cutting.

4. a) What is Brazing? Give its applications
   b) What is the Heat Affected Zone in welding? Explain its significance.

5. a) What is the significance of recrystallization temperature in metal working? Explain.
   b) Briefly explain the forces involved in rolling.

6. a) How does the side wall thickness of a drawn component vary? Explain the causes with a sketch.
   b) Explain the advantages and disadvantages of compound dies over progressive dies.

7. a) What is meant by balancing a die in drop forging? Explain with an example.
   b) What are the various forging Tools used? Discuss briefly.

8. a) Describe the two types of polymerization methods in plastics.
   b) Explain, with a sketch, the Blow moulding process. Give its applications.
~~~~~~~~~~~~~~~~~~~~~~~~

Code No: R21241 **R10** SET - 3

II B. Tech I Semester Supplementary Examinations, September - 2014
PRODUCTION TECHNOLOGY
(Auto Mobile Engineering)

Time: 3 hours Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
~~~~~~~~~~~~~~~~~~~~~~~~

1. a) Differentiate between pressurized and Non pressurized gating systems with reference to their applications.
   b) Distinguish clearly between the following casting terms: moulding sand, backing sand, facing sand.

2. a) What are the different types of Risers? Explain the functions of each type.
   b) With a neat sketch, describe the Crucible melting process. Mention its applications.

3. a) What is meant by 'penetration'? Explain its relevance to welding.
   b) Describe the oxy-acetylene gas welding technique, with a neat sketch.

4. a) Write a brief note on explosion welding, with a neat sketch.
   b) What is the requirement of fluxes in brazing? Give details of some of the fluxes used in brazing with their applications.

5. a) What are the advantages of hot working over cold working of metals? Explain.
   b) What is the significance of roll diameter with reference to the roll-separating force in rolling?

6. a) Distinguish between Coining and Embossing, with neat sketches.
   b) How do you provide shear angle in the case of punching and blanking operations? Explain with sketches.

7. a) Compare the merits and limitations of hot extrusion and cold extrusion. Give their applications.
   b) What do you understand by the term flash in forging? Explain with the help of a sketch.

8. Name and explain, with suitable sketches the processes used for making the following:
   a) Plastic bottles to store 1 litre of shampoo
   b) Plastic top cover of a plain paper copier
~~~~~~~~~~~~~~~~~~~~~~~~

Code No: R21241 **R10** SET - 4

II B. Tech I Semester Supplementary Examinations, September - 2014
PRODUCTION TECHNOLOGY
(Auto Mobile Engineering)

Time: 3 hours Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
~~~~~~~~~~~~~~~~~~~~~~~~

1. a) Differentiate between green sand and dry sand cores with reference to their applications.
   b) Describe the objectives of gating systems in any casting.

2. a) What is the difference between the solidification of pure metals and metal alloys?
   b) Describe the centrifugal casting process and state to what work piece configurations it is best suited

3. a) State the important functions of flux coatings of electrodes used in manual metal arc-welding process.
   b) Explain the importance of filler metal in welding, giving its composition.

4. a) Explain the various methods of lasers used in laser beam welding process.
   b) Is it possible to use a centre lathe for friction welding? Support your answer with reasons.

5. a) For hot working it is often necessary to heat the work piece in a furnace and there are scale losses and other problems. Why is hot working sometimes preferred to cold working in spite of such disadvantages?
   b) Give any three examples of rolling stand arrangements, with sketches.

6. a) Explain the difference between open-die and impression-die forging. Give suitable sketches.
   b) Explain, by a neat sketch, the edge bending operation with a die punch set in position, naming all the important elements of the set-up.

7. a) Describe, with a sketch, the Hydrostatic extrusion process. Mention its applications.
   b) Name and explain the important forging defects. How are they rectified?

8. a) Would you use thermosetting plastics for injection molding? Explain.
   b) How do you classify the polymeric materials? Explain with a flow diagram.
~~~~~~~~~~~~~~~~~~~~~~~~