Code No: R1622033 **R16** SET - 1

II B. Tech II Semester Regular/Supplementary Examinations, April/May - 2019
PRODUCTION TECHNOLOGY
(Com to ME, AME)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) List the steps involved in making a casting? (2M)
   b) State the types of risers. (2M)
   c) What is the function of shielding gas in welding? (2M)
   d) List four applications of Laser Beam Welding process. (2M)
   e) What is the principle involved in impact extrusion? (3M)
   f) Define coining operation. (3M)

PART -B

2. a) What are the factors to be considered in selecting pattern materials? With a neat sketch explain the Skeleton pattern and loose piece patterns used in casting? (7M)
   b) Explain top and bottom gate with a neat sketch. (7M)

3. a) Describe the solidification of a pure metal with neat sketch. (7M)
   b) Explain the various steps involved in the investment casting of metals. (7M)

4. a) Sketch the various types of gas welding flames and give the difference between them. (7M)
   b) Explain TIG welding and MIG welding with its merits, demerits and application. (7M)

5. a) Briefly explain the explosive welding process. (7M)
   b) Explain destructive and non-destructive testing of welds. (7M)

6. a) Write the differences of Hot Working and Cold Working. (7M)
   b) Explain a Rolling process with a schematic diagram. (7M)

7. a) Describe the process of bending. (7M)
   b) Explain with a suitable diagram, the working principle of Electro Hydraulic Forming. (7M)

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Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) List out materials used for patterns. (2M)
   b) Mention any two merits and demerits of die casting. (2M)
   c) Write the classification of welding processes. (2M)
   d) Differentiate between soldering and brazing. (2M)
   e) Write a short note on smith forging. (3M)
   f) Compare thermosetting plastic materials with thermoplastic materials? (3M)

PART -B

2. a) What are different types of allowances to be considered in Casting? Explain in Detail. (7M)
   b) List the objectives of gating system in any casting and explain the components of the gating system with a neat sketch? (7M)

3. a) Describe the types of risers and their uses with suitable sketches. (7M)
   b) Explain with the help of a neat sketch, the process of centrifugal casting. (7M)

4. a) What is the principle of arc welding and explain the submerged arc welding with a neat sketch. (7M)
   b) List the various inert gases used in welding processes and explain their advantages. (7M)

5. a) Discuss the method of resistance welding. What are its advantages and disadvantages? (7M)
   b) Differentiate between the destructive and non – destructive tests in welding. (7M)

6. a) Describe and classify the types of rolling mills with the necessary sketches. (7M)
   b) Describe the wire drawing process with a neat sketch. (7M)

7. a) Describe the process of Spinning. (7M)
   b) Explain with a suitable diagram, the working principle of Electro Magnetic Forming. (7M)

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Code No: R1622033 **R16** SET - 3

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Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) Define the term gating ratio? (2M)
   b) What are the advantages of true centrifugal casting? (2M)
   c) Write the applications of TIG welding. (2M)
   d) With suitable sketch list the different regions of HAZ. (2M)
   e) Give the theory of rolling. (3M)
   f) Define piercing operation. (3M)

PART -B

2. a) What are the materials that are generally used for making patterns? Explain the reasons for their choice. (7M)
   b) Explain the components of a gating system with a neat diagram. (7M)

3. a) What are the functions of a riser? Write the requirements of a good riser. (7M)
   b) Make neat sketch and explain the construction and operation of a hot chamber die casting machine. (7M)

4. a) Draw diagram showing classification of welding processes. (7M)
   b) With a neat sketch, explain construction of Oxy – acetylene torch and applications. (7M)

5. a) Differentiate between soldering, brazing and welding. (7M)
   b) What are the types of defects that are generally found in welding? Describe their causes and remedies. (7M)

6. a) Define forging and explain any two types of forging process with the necessary sketches. (7M)
   b) Explain forward and backward extrusion process with proper sketches. (7M)

7. a) Write short notes on stamping. (7M)
   b) What is blow moulding? Explain briefly? (7M)

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Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) What are the materials generally used for preparing patterns? (2M)
   b) Give the applications of investment castings. (2M)
   c) Explain the factors to be considered in selection of weld joint. (2M)
   d) Write a short note on explosive welding. (2M)
   e) Give a short note on Tube drawing process. (3M)
   f) What is the principle involved in Injection Moulding process. (3M)

PART -B

2. a) Give the steps in sand casting process and explain each briefly. (7M)
   b) What are the common allowances provided on patterns? Why and how they are provided? Give suitable examples. (7M)

3. a) What are open and blind risers? Give their advantages and drawbacks. (7M)
   b) Make neat sketch and explain the construction and operation of a cold chamber die casting machine. (7M)

4. a) What are the kinds of joints that are normally employed for welding processes? Give their sketches. (7M)
   b) With a neat sketch, explain the principle, process and applications of TIG welding. (7M)

5. a) How does thermit welding process differ from ordinary arc welding? (7M)
   b) Explain the procedure of tensile testing of a weld with sketch. (7M)

6. a) Why is hot working sometimes preferred to cold working inspite of some disadvantages? (7M)
   b) Describe the working principle of Hydrostatic extrusion with a neat sketch. (7M)

7. a) Explain blanking and piercing operations with a neat sketch. (7M)
   b) Explain any high energy rate forming method with a proper sketch. (7M)

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