

II B. Tech II Semester Regular Examinations, April - 2018
PRODUCTION TECHNOLOGY
(Com to ME, AME)

Time: 3 hours

Max. Marks: 70

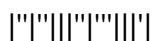
- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**
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PART -A

1. a) What is the difference between pattern and casting? (2M)
- b) What are the advantages and applications of investment casting? (3M)
- c) Explain about the following welding joints. (2M)
i) Butt ii) Lap
- d) Explain the heat affected zones in welding. (2M)
- e) Write a short note on strain hardening and annealing. (3M)
- f) What are the remedies for spring back? (2M)

PART -B

2. a) Differentiate between pressurized and unpressurised gating systems with reference to the applications. (7M)
- b) Explain briefly about various pattern allowances. (7M)
3. a) What purpose is served by the risers in sand casting? Explain the principles of design of risers. (7M)
- b) What do you understand by centrifugal casting? How are the centrifugal casting methods classified? (7M)
4. a) Describe the oxy-acetylene gas welding technique and give the applications. (7M)
- b) Explain about Manual metal arc welding and Submerged arc welding with neat sketches. (7M)
5. a) Explain forge welding and resistance welding processes and give their applications. (7M)
- b) What are the defects that are generally found in welding? Describe their cause and remedies. (7M)
6. a) Explain about different types of forging operations with neat sketches. (7M)
- b) Explain the various rolling process and variety of products obtained during rolling. (7M)
7. a) Differentiate between Blanking and Piercing operations. (7M)
- b) Compare the applications and advantages of blow moulding and injection moulding processes. (7M)



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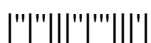
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**PART -A**

1. a) What are different types of gates in sand moulding process? (3M)
- b) Explain the formation of shrinkage cavities in steel casting. (2M)
- c) What are the applications of gas welding? (2M)
- d) What is friction welding? What are its applications? (3M)
- e) What is extrusion ratio? (2M)
- f) List out the press tools used in production. (2M)

**PART -B**

2. a) Enumerate the various types of commonly used patterns and their applications. (7M)
- b) Discuss the steps involved in making a casting. (7M)
3. a) Differentiate between crucible melting and cupola operations. (7M)
- b) Sketch and explain the process of investment casting. What are its limitations? (7M)
4. a) What are the kinds of joints that are normally employed for welding processes? Give their sketches. (7M)
- b) Explain about TIG and MIG welding techniques. Give the applications of each. (7M)
5. a) Write a short note on the plasma-arc welding and Laser welding processes. (7M)
- b) Differentiate between brazing and soldering techniques and give their applications. (7M)
6. a) What are the main characteristics of hot working as compared with cold working process? (7M)
- b) Sketch and explain impact and hydrostatic extrusion process and their advantages. (7M)
7. a) Discuss the advantages and limitations of Electro hydraulic forming and rubber pad forming. (7M)
- b) Compare different types of plastics and their properties. (7M)



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PART -A

1. a) What are the advantages of casting? (2M)
- b) What are the applications of die casting? (3M)
- c) What is the need of flux in welding (2M)
- d) What is the principle of Laser welding? (2M)
- e) What is drop forging? (2M)
- f) Write a short note on (i) Coining (ii) Spinning (3M)

PART -B

2. a) What is the difference between a split piece pattern and a match plate pattern? (7M)
- b) Draw the neat sketches of bottom and top gating systems and explain. (7M)
3. a) Discuss briefly on solidification of castings of pure metals and alloys. (7M)
- b) Describe the principle and working of centrifugal casting. (7M)
4. a) Explain the equipment used in gas welding. (7M)
- b) Explain the current characteristics necessary for manual Arc welding. (7M)
5. a) What are the principles and application of Resistance welding? (7M)
- b) Explain the source of heat in Thermite welding. (7M)
6. a) Distinguish clearly between drop forging and roll forging processes with reference to the process and products obtained? (7M)
- b) What are the advantages and applications of sintering process? (7M)
7. a) Derive the force and power requirements in blanking operation. (7M)
- b) Explain all the basic tools of sheet metal work with neat sketches. (7M)



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**PART -A**

1. a) What are the applications of casting? (3M)
- b) What are the types of risers used in casting? (2M)
- c) What are the advantages of inert gas welding? (2M)
- d) List out non destructive tests done on welded joints. (3M)
- e) Explain the principle of Drawing? (2M)
- f) What is Stretch forming? (2M)

**PART -B**

2. a) Explain the principle of metal casting. (7M)
- b) Explain with sketches the gating system. What are the requirements of the gating system? (7M)
3. a) What is Cupola? Explain its operations. (7M)
- b) What are the main advantages of investments casting over other casting processes? (7M)
4. a) Compare gas welding and arc welding techniques. (7M)
- b) What are the applications and limitations of MIG welding? (7M)
5. a) List the various welding techniques classified under solid state welding and explain two of them. (7M)
- b) Explain soldering? What fluxes are generally used in soldering? (7M)
6. a) What are the different types of forging hammers? Discuss their applications? (7M)
- b) With the help of neat sketches briefly discuss about forward extrusion and backward extrusion. (7M)
7. a) Draw a progressive die for producing a washer and explain its working. (7M)
- b) Explain the principle of explosive forming. What are its applications (7M)

