



**SIDDHARTH GROUP OF ENGINEERING INSTITUTIONS :: PUTTUR**  
Siddharth Nagar, Narayanavanam Road – 517583

**QUESTION BANK**

**Subject with Code:** Manufacturing Technology(16ME306)

**Course & Branch:** B. Tech - ME

**Year & Sem** : II-B. Tech & II-Sem

**Regulation** : R16

**UNIT –I**

**METAL CASTING PROCESSES**

- 1 a) Describe the following types of sands: i)Green sand ii)Dry sand 6M  
iii)Loam sand iv)Facing sand v)Backing sand vi)Parting sand  
b) What is gating ratio? What is the difference between pressurized and 6M  
unpressurised systems?
- 2 a) Describe CO<sub>2</sub> Process. 6M  
b) With neat sketch explain investment casting process and give its 6M  
applications.
- 3 a) What do you understand by external hot tears? How they are caused? 6M  
b) What do you understand by cold cracks and warpage? What are the 6M  
remedies for them?
- 4 a) Describe the defects in casting? 6M  
b) Explain the various properties of moulding sand. 6M
- 5 a) Sketch and explain different types of patterns used in foundry 6M  
b) What are the different pattern allowances? Explain with neat sketch. 6M  
What are the requirements of good gating system? Draw a sketch of  
6 gating system and explain the functions of various elements. 12M
- 7 a) Discuss the relative advantages and disadvantages of various types of 6M  
furnaces used in foundry shops.  
b) With neat sketch explain the construction and working of cupola 6M  
furnace.

- 8 a) With neat sketch explain centrifugal casting process. 6M  
b) With neat sketch explain stir casting process. 6M
- 9 a) With neat sketch explain shell moulding process. 6M  
b) With neat sketch explain die casting process. 6M
- 10 a) What are the aims in making a casting 6M  
b) What are the rules for satisfactory design to obtain the good castings? 6M

## UNIT – II

### JOINING PROCESSES

- 1 a) What are the common welding troubles; causes and remedies for them? 6M  
What are the qualities of flame used for welding? How can you  
b) distinguish three types of welding flames and for what applications these 6M  
are used?
- 2 a) Compare TIG and MIG welding processes. 6M  
b) What is thermit welding? What does a thermit mixture consist of and 6M  
what reactions take place in thermit welding?
- 3 a) Write short notes on submerged arc welding and write its applications. 6M  
b) Explain the working of oxy acetylene gas welding. 6M
- 4 a) Write short note on Heat Affected Zone (HAZ) in welding. 6M  
b) Explain the classification of welding processes briefly. 6M
- 5 a) Explain the working of spot welding briefly. 6M  
b) Write short notes on Gas Tungsten Arc Welding (GTAW) and its 6M  
advantages.
- 6 a) What are the different fields of applications of welding process? 6M  
b) Write short notes on Gas Tungsten Arc Welding (GMAW) and its 6M  
advantages.
- 7 a) Differentiate between the welding, brazing and soldering processes. 6M  
b) What are the essential steps in brazing operation? 6M
- 8 a) Write short notes on electro slag welding. 6M

- b) Write advantages of welding over other joining methods. 6M
- 9 a) What is soldering process? 6M
- b) What is weld decay and how it can be prevented? 6M
- 10 a) Explain briefly How can be metals joined using adhesives. 6M
- b) Write various fields of applications of adhesives 6M

### UNIT-III

#### METAL DEFORMATION PROCESS

- 1 a) Explain hot working process with an example, its processes used 6M
- b) Explain hot working process with, applications& limitations 6M
- 2 a) Explain cold working process with en example, its processes used 6M
- b) Explain cold working process with , applications& limitations 6M
- 3 a) What is open, impression die forging? Give its processes . 6M
- b) What is open, impression die forging? Give its applications. 6M
- 4 a) What is closed, impression die forging? Give its processes 6M
- b) What is closed ,impression die forging? Give its applications 6M
- 5 a) What are the characteristics of forging processes? Write Processes used? 6M
- b) What are the characteristics of wire drawing processes? Write Processes used? 6M
- 6 What are the types of forging processes? write Processes used 12M
- 7 a) What are the characteristics of rolling processes? 6M
- b) What are the processes used in rolling processes 6M

- 8 a) What are the advantages of rolling processes 6M
- b) What are the examples of components produced in rolling processes 6M
- 9 a) What is shape rolling process? 6M
- b) What are the defects in rolled parts? How we can rectify the same? 6M
- 10 a) What are the defects in forged parts? How we can rectify the same? 6M
- b) What are the characteristics of extrusion processes? Write Processes used? 6M

**UNIT-IV**  
**SHEET METAL WORKS**

- 1 a) What are the characteristics of sheet metal? 6M
- b) What are the types of shearing? 6M
- 2 a) Explain Bending operations with a suitable sketches. 6M
- b) Sketch & explain the Drawing operation. 6M
- 3 a) Explain the Stretch forming operations & its applications. 6M
- b) Write the Formability of sheet metal characteristics. 6M
- 4 a) What is Metal pinning? & explain. 6M
- b) Write short notes on Introduction of explosive forming with its 6M applications.
- 5a) Explain the Magnetic pulse forming operations. 6M
- b) Write about Peen forming Operations & applications. 6M

- 6 a) What is Super plastic forming & explain. 6M
- b) Write detailed notes on Micro forming Operations. 6M
- 7 a) Compare bending Vs Shearing operations & the tools used in each case. 6M
- b) Differentiate drawing & Deep Drawing Operations. 6M
- 8 a) Explain with sketches the deep drawing Operations. 6M
- b) What are the types of presses used for drawing operations? 6M
- 9 a) Classify the types of presses used in drawing operations. 6M
- b) Classify the materials used in punch, ram, die, die block in drawing operations. 6M
- 10 a) What are the tools used in Shearing, bending, forming, drawing operations? 6M
- b) What explosives are used in explosive forming & how safety is ensured? 6M

### UNIT-5

### MANUFACTURE OF PLASTIC COMPONENTS

- 1 Explain the working principles and application of compression Moulding. 12M
- 2 Explain the working principles and application of Rotational Moulding. 12M
- 3 Explain the working principles and application of Injection Moulding 12M
- 4 a) Explain the structure of thermo plastic and thermosetting plastics. 6M
- b) Explain the polymerization briefly? 6M
- 5 Explain the working principles and application of Transfer Moulding. 12M

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| 6  | Explain the working principles and application of Blow Moulding.     | 12M |
| 7  | a) Explain the various methods of Bonding of Thermoplastics          | 6M  |
|    | b) Differentiate thermo plastics and thermo settings                 | 6M  |
| 8  | a) What are the major considerations in the design of plastic parts? | 6M  |
|    | b) Explain briefly about calendaring with neat sketch                | 6M  |
| 9  | State how joining and machining of plastics are carried out?         | 6M  |
| 10 | what are the foamed plastics and state how foaming is done           | 6M  |