**SIDDARTHA INSTITUTE OF SCIENCE AND TECHNOLOGY :: PUTTUR**
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**QUESTION BANK (DESCRIPTIVE)**

**Subject with Code :**MANUFACTURING PROCESSES (18ME0308) **Course & Branch**: B.Tech - ME
**Year & Semester:** II-B.Tech & II-Semester **Regulation:** R18

## UNIT –I

## METAL CASTING PROCESSES

| | | | |
|---|---|---|---|
| 1 | a) | Describe the following types of sands: i)Green sandii)Drysand iii)Loam sand iv)Facing sand v)Backing sand vi)Partingsand | 5M |
| | b) | What is gating ratio? What is the difference between pressurized and Unpressurisedsystems? | 5M |
| 2 | a) | Describe$CO_2$Process. | 5M |
| | b) | With neat sketch explain investment casting process andgiveits Applications. | 5M |
| 3 | a) | What do you understand by external hot tears? Howtheyarecaused? | 5M |
| | b) | What do you understand by cold cracks and warp age? Whatare the Remedies for them? | |
| 4 | a) | Describe the defectsincasting? | 5M |
| | b) | Explain the various properties ofmouldingsand. | 5M |
| 5 | a) | Sketch and explain different types of patterns usedinfoundry | 5M |
| | b) | What are the different pattern allowances? Explainwithneatsketch. | 5M |
| 6. | | What are the requirements of good gating system? Draw a sketchof Gating system and explain the functions ofvariouselements. | 10M |
| 7 | a) | Discuss the relative advantages and disadvantages of various typesof furnaces used infoundryshops. | 5M |
| | b) | With neat sketch explain the construction and working ofcupola furnace. | 5M |
| 8 | a) | Withneat sketch explain centrifugalcastingprocess. | 5M |
| | b) | With neat sketch explain stircasting process. | 5M |

| | | | |
|---|---|---|---|
| 9 | a) | Withneat sketch explain shellmouldingprocess. | 5M |
| | b) | With neat sketch explain diecastingprocess. | 5M |
| 10 | a) | Whatare the aims in makingacasting | 5M |
| | b) | What are the rules for satisfactory design to obtainthegoodcastings? | 5M |

## UNIT – IIJOINING PROCESSES

| | | | |
|---|---|---|---|
| 1 | a) | What are the common welding troubles; causes and remediesforthem? | 5M |
| | b) | what are the qualities of flame used for welding? How canyou Distinguish three types of welding flames and forwhatapplicationsthese areused? | 5M |
| 2 | a) | Compare TIG and MIG weldingprocesses | |
| | b) | What is thermite welding? What does a thermite mixture consist ofand What reactions take place inthermitewelding? | 5M |
| 3 | a) | Writeshortnotesonsubmergedarcweldingandwriteitsapplications. | 5M |
| | b) | Explain the working of oxy acetylenegaswelding. | 5M |
| 4 | a) | Write short note on Heat Affected Zone (HAZ)inwelding. | 5M |
| | b) | Explain the classification ofweldingprocessesbriefly. | 5M |
| 5 | a) | Explain the working of submerged Arcweldingbriefly. | 5M |
| | b) | Write short notes on Gas Tungsten Arc Welding (GTAW)andits advantages. | 5M |
| 6 | a) | Whatare the different fields of applications ofweldingprocess? | 5M |
| | b) | Write short notes on Gas Tungsten Arc Welding (GMAW) and itsadvantages | 5M |
| 7 | a) | Differentiate between the welding, brazing andsolderingprocesses. | 5M |
| | b) | What are the essential steps inbrazingoperation? | 5M |
| 8 | a) | Write short notes on electroslagwelding. | 5M |
| | | b) write a short notes onwelddefects | 5M |
| 9 | | Explain Electron beam welding and its advantages withneatsketch | 10 |
| 10 | | Explain Laser beam welding and its advantages withneatsketch | 10 |

## UNIT-III

## METAL DEFORMATION PROCESS

| | | | |
|---|---|---|---|
| 1 | a) | Explain hot working process with an example,itsprocessesused | 5M |
| | b) | Explain hot working processwith,applications&limitations | 5M |
| 2 | a) | Explain cold working process with en example, itsprocessesused | 5M |
| | b) | Explain cold working process withapplications&limitations | 5M |
| 3 | a) | Whatisopen, impression die forging? Giveitsprocesses. | 5M |
| | b) | What is open, impression die forging?Giveitsapplications. | 5M |
| 4 | a) | Whatisclosed, impression die forging?Giveitsprocesses | 5M |
| | b) | Whatisclosed,impressiondieforging?Giveitsapplications | 5M |
| 5 | a) | Whatarethe characteristics of forging processes?WriteProcesses Used? | 5M |
| | b) | What are the characteristics of wire drawingprocesses?Write Processesused? | 5M |
| 6 | | What are the types of forging processes? writeProcessesused | 10M |
| 7 | a) | What are the characteristics ofrollingprocesses? | 5M |
| | b) | What are the processes used inrollingprocesses | 5M |
| 8 | a) | Whatarethe advantages ofrollingprocesses | 5M |
| | b) | What are the examples of components produced inrollingprocesses | 5M |
| 9 | a) | Whatisshaperollingprocess? | 5M |
| | b) | What are the defects in rolled parts? How we can rectifythesame? | 5M |
| 10 | a) | Whatarethe defects in forged parts? How we can rectifythesame? | 5M |

## UNIT-IV
## SHEET METAL FORMING PROCEESSSES

| | | | |
|---|---|---|---|
| 1 | a) | Whatare the characteristics ofsheetmetal? | 5M |
| | b) | What are the typesofshearing? | 5M |
| 2 | a) | Explain Bending operations with asuitablesketches. | 5M |
| | b) | Sketch& explain theDrawing operation. | 5M |
| 3 | a) | Explain the Stretch forming operations&itsapplications. | 5M |
| | b) | Write the Formability of sheetmetalcharacteristics. | 5M |
| 4 | a) | WhatisMetalpinning?&explain. | 5M |
| | b) | Write short notes on Introduction of explosive formingwithits applications. | 5M |
| 5 | a) | Explain the Magnetic pulseformingoperations. | 5M |
| | b) | Write about Peen formingOperations&applications. | 5M |
| 6 | a) | WhatisSuper plasticforming&explain. | 5M |
| | b) | Write detailed notes on MicroformingOperations. | 5M |
| 7 | a) | Compare bending Vs Shearing operations & the tools usedineach case. | 5M |
| | b) | Differentiate drawing & DeepDrawingOperations. | 5M |
| 8 | a) | Explain with sketches the deepdrawingOperations. | 5M |
| | b) | What are the types of presses used fordrawingoperations? | 5M |
| 9 | a) | Classify the types of presses used indrawingoperations. | 5M |
| | b) | Classify materials used in punch, ram, die, die block indrawingwork | 5M |

10 a) What are the tools used in Shearing, bending, forming, drawing operations? 5M

b) What explosives are used in explosive forming& how safetyisensured? 5M

## UNIT-V

## MANUFACTURE OF PLASTIC COMPONENTS

| | | | |
|---|---|---|---|
| 1 | | Explain the working principles and applicationofcompression Moulding. | 10M |
| 2 | | Explain the working principles and application of Rotational Moulding. | 10M |
| 3 | | Explain the working principles and application ofInjectionMoulding | 10M |
| 4 | a) | Explain the structure of thermo plastic andthermosettingplastics. | 5M |
| | b) | Explain thepolymerizationbriefly? | 5M |
| 5 | | Explain the working principles and application ofTransferMoulding. | 10M |
| 6 | | Explain the working principles and application ofBlowMoulding. | 10M |
| 7 | a) | Explain the various methods of BondingofThermoplastics | 5M |
| | b) | Differentiate thermo plastics andthermosettings | 5M |
| 8 | a) | Whatare the major considerations in the design ofplasticparts? | 5M |
| | b) | Explain briefly about calendaring withneatsketch | 5M |
| 9 | | State how joining and machining of plastics arecarriedout? | 5M |
| 10 | | what are the foamed plastics and state how foamingisdone | 5M |

### TWO MARKS QUESTIONS WITH ANSWERS

UNIT –I

METAL CASTING PROCESS

1 State any four types ofpatterns.
2 Mention any two advantages and disadvantages of diecasting.
3. Write the requirements of goodpattern.
4. What is coreventing?
5. What function of core?
6. Which process is called lost waxing method? Why?
7. What is the function of coreprints?
8. What are the advantages and applications of ceramicmoulds?
9. What are the patternmaterials?
10. Explain the termfettling.
11. What are the applications ofcasting?
12. Mention the specific advantages of Co2 mouldingProcess.
13. Define AFS grain- fineness number.

14. Classify mouldingMachines.
15. what are the different types of furnaces used forcasting.
16. State the main functions of tuyeres in cupola furnace.

UNIT – II
METAL JOINING PROCESS

1. List out any four arc weldingequipment.
2. What are the special features of frictionwelding?
3. Define resistance weldingprocess.
4. What is the purpose offlux?
5. How can slag inclusions in welding be avoided?6.How does brazing differ from brazewelding?
7. Why flux is coated on fillerrods?
8. What is the application of carburizingflame?
9. What are the diameter and length of the electrodes available in themarket?
10. Name the various methods of ResistanceWelding
11. What is'Brazing'
12. Mention the applications of frictionwelding.
13. Name the chemicals used in fluxManufacture.

UNIT III
METAL FORMINGPROCESS

1 What are the four major drawbacks of hotworking?
2 Classify the types ofextrusion.
3 What is the difference between a bloom and abillet?
4 What is impact extrusion?
5 Why are a number of passes required to roll a steelbar?
6 How are seamless tubesproduced?
7 What is Sejournetprocess?
8 What is skew rolling?
9 Explain the term Extrusionprocess.
10 What are the disadvantages of forgingprocesses?
**11.** Define Impactextrusion.
**12.** What is meant by coldspinning.
**13.** Define HotSpinning.
**14.** What is wiredrawing.
15 What is meant by deepDrawing.

UNIT - IV
SHEET METAL PROCESS

**1** What is punching operation?
**2** What is super plastic forming operation?
**3** What is pressbrake?
**4** Define hydro formingprocess.
**5** Give the difference between punching andblanking.
**6** How is hydro forming is similar to rubber forming?
**7** What do you mean by minimum bendradius?
**8** Define limiting drawingratio.
**9** DefineEmbossing.
**10.** Define Stretchforming.
**11.** DefineWrinkling

UNIT V

MANUFACTURING OF PLASTIC COMPONENTS

1 What are the characteristic of thermoplastics?
2 List out the material for processing ofplastics?
3. Name the parts made by rotational moulding.
**4** What is parison?
**5** Define degree ofpolyenerization.
**6** What is rotational mouldig ofplastics?
**7** What are the two types ofpolymerization.
8. List the advantage of cold forming ofplastics?
9. What is filmblowing?
10. What are the types of plastics?