SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR

(Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu)
(Accredited by NBA & Accredited by NAAC with 'A' Grade)
(An ISO 9001:2008 Certified Institution)
Siddharth Nagar, Narayavanam Road, PUTTUR-517 583

QUESTION BANK

Subject with Code: Manufacturing Processes (20ME0308) **Course & Branch: B. Tech – ME**
Year/ Sem: II-B. Tech & II-Sem **Regulation: R20**

UNIT I

1	**a)**	List the main advantages and applications of the casting process.	**[L1]**	**[CO1]**	**[5M]**
	b)	What are the major limitations of the sand casting process and how are they overcome?	**[L1, L2]**	**[CO1]**	**[5M]**
2	**a)**	Sketch the cross section of a sand mould which is ready for pouring, and label the various important parts.	**[L3, L1]**	**[CO1]**	**[5M]**
	b)	Briefly explain the procedure to be followed for making a sand mould.	**[L2]**	**[CO1]**	**[5M]**
3	**a)**	Distinguish clearly between the following: moulding sand, backing sand and facing sand.	**[L2]**	**[CO1]**	**[5M]**
	b)	Define pattern. Name the different types of patterns and pattern materials.	**[L1]**	**[CO1]**	**[5M]**
4	**a)**	Name the pattern allowances provided on the pattern for sand casting and state the reasons why they are provided.	**[L1]**	**[CO1]**	**[5M]**
	b)	What are the requirements of good moulding sand?	**[L1]**	**[CO1]**	**[5M]**
5	**a)**	Discuss the relative advantages and disadvantages of various types of furnaces used in foundry shops.	**[L2]**	**[CO1]**	**[5M]**
	b)	With neat sketch explain the construction and working of cupola furnace.	**[L2]**	**[CO1]**	**[5M]**
6		With neat sketch explain shell moulding process.	**[L2]**	**[CO1]**	**[10M]**
7		Explain the different types of moulding machines with neat sketch and its applications.	**[L2]**	**[CO1]**	**[10M]**
8	**a)**	With neat sketch explain die casting process	**[L2]**	**[CO1]**	**[5M]**
	b)	Distinguish hot die casting and cold die casting.	**[L2]**	**[CO1]**	**[5M]**
9	**a)**	With neat sketch explain centrifugal casting process.	**[L2]**	**[CO1]**	**[5M]**
	b)	With neat sketch explain stir casting process.	**[L2]**	**[CO1]**	**[5M]**
10	**a)**	Describe the defects in casting.	**[L2]**	**[CO1]**	**[5M]**
	b)	What do you understand by cold cracks and warpage? What are the remedies for them?	**[L1]**	**[CO1]**	**[5M]**

UNIT II

1	**a)**	Explain the working of oxy acetylene gas welding	**[L2]**	**[CO2]**	**[5M]**
	b)	Distinguish three types of welding flames and for what applications these are used?	**[L4]**	**[CO2]**	**[5M]**

2	**a)**	Compare TIG and MIG welding processes.	**[L2]**	**[CO2]**	**[5M]**
	b)	Explain the classification of welding processes briefly.	**[L2]**	**[CO2]**	**[5M]**
3		With a neat sketch explain the working of submerged arc welding along with its applications.	**[L2]**	**[CO2]**	**[10M]**
4	**a)**	Illustrate the working principle of spot welding.	**[L2]**	**[CO2]**	**[5M]**
	b)	Write short notes on :1) Seem welding 2) Projection welding	**[L2]**	**[CO2]**	**[5M]**
5	**a)**	Elucidate the working of Gas Tungsten Arc Welding (GTAW) with its merits & demerits.	**[L2]**	**[CO2]**	**[5M]**
	b)	Demonstrate the working principle of electro slag welding with a neat sketch	**[L2]**	**[CO2]**	**[5M]**
6		Explain the working of Electron Beam Welding with a neat sketch along its advantages and disadvantages.	**[L2]**	**[CO2]**	**[10M]**
7		Name the different types of solid state welding processes and explain in brief about friction welding.	**[L2]**	**[CO2]**	**[10M]**
8	**a)**	Identify the common welding troubles; causes and remedies in welding process	**[L3]**	**[CO2]**	**[5M]**
	b)	What is weld decay and how it can be prevented?	**[L1]**	**[CO2]**	**[5M]**
9	**a)**	Differentiate between the welding, brazing and soldering processes	**[L4]**	**[CO2]**	**[5M]**
	b)	List out the essential steps in brazing operation	**[L1]**	**[CO2]**	**[5M]**
10	**a)**	Explain briefly how can be metals joined using adhesives	**[L2]**	**[CO2]**	**[5M]**
	b)	List out various fields of applications of adhesives	**[L1]**	**[CO2]**	**[5M]**

UNIT III

1	**a)**	Discuss the different types of rolling mills with a neat sketch.	**[L2]**	**[CO3]**	**[5M]**
	b)	Write the advantages and disadvantages of rolling processes?	**[L2]**	**[CO3]**	**[5M]**
2		Discuss about shape rolling operations and defects in rolled parts.	**[L2]**	**[CO3]**	**[10M]**
3	**a)**	What is bulk deformation process?	**[L1]**	**[CO3]**	**[5M]**
	b)	List out the applications of hot rolling and cold rolling process.	**[L1]**	**[CO3]**	**[5M]**
4		Explain the principle and mechanism of rolling process.	**[L2]**	**[CO3]**	**[10M]**
5	**a)**	What is open, impression die forging? Give its processes	**[L1]**	**[CO4]**	**[5M]**
	b)	Discuss in detail about the merits, demerits and applications of open, impression die forging.	**[L2]**	**[CO4]**	**[5M]**
6	**a)**	Name various types of forgings.	**[L1]**	**[CO4]**	**[5M]**
	b)	What are the characteristics of forging processes? Write Processes used?	**[L2]**	**[CO4]**	**[5M]**
7	**a)**	Distinguish roll forging and rotary forging.	**[L4]**	**[CO4]**	**[5M]**
	b)	List out various advantages and disadvantages of forging process.	**[L2]**	**[CO4]**	**[5M]**
8	**a)**	Discuss the principle of extrusion process.	**[L2]**	**[CO4]**	**[5M]**
	b)	Differentiate the hot and cold extrusion processes.	**[L4]**	**[CO4]**	**[5M]**

9	**a)**	With neat sketch explain forward and backward extrusion process.	**[L2]**	**[CO4]**	**[5M]**
	b)	Discuss about shape rolling operations and defects in rolled parts.	**[L3]**	**[CO4]**	**[5M]**
10		Compare with neat sketch the impact extrusion and hydrostatic extrusion process.	**[L4]**	**[CO4]**	**[10M]**

UNIT IV

1	**a)**	What are the characteristics of sheet metal?	**[L1]**	**[CO4]**	**[5M]**
	b)	What are the various types of shearing operations?	**[L1]**	**[CO4]**	**[5M]**
2	**a)**	Explain bending operations with suitable sketches.	**[L2]**	**[CO4]**	**[5M]**
	b)	Sketch & explain the Drawing operation	**[L2]**	**[CO4]**	**[5M]**
3	**a)**	Explain the Stretch forming operations & its applications.	**[L2]**	**[CO4]**	**[5M]**
	b)	Write the Formability of sheet metal characteristics	**[L3]**	**[CO4]**	**[5M]**
4		What is Metal spinning? Explain with neat sketch.	**[L1] [L2]**	**[CO4]**	**[10M]**
5	**a)**	Discuss about the advantages, disadvantages and applications of sheet metal processes.	**[L2]**	**[CO4]**	**[5M]**
	b)	Differentiate the formability and spinning process.	**[L4]**	**[CO4]**	**[5M]**
6		List out the production processes of metallic powders?	**[L2]**	**[CO4]**	**[10M]**
7		Discuss the mixing and blending methods of powders.	**[L2]**	**[CO4]**	**[10M]**
8		Write short note on 1) sintering 2) compacting.	**[L2]**	**[CO4]**	**[10M]**
9		What are the secondary finishing operations in powder metallurgy?	**[L1]**	**[CO4]**	**[10M]**
10	**a)**	List out the advantages and disadvantages of powder metallurgy?	**[L1]**	**[CO4]**	**[5M]**
	b)	Discuss about the application of powder metallurgy.	**[L2]**	**[CO4]**	**[5M]**

.UNIT V

1		Explain the working principles and application of compression Moulding.	**[L2]**	**[CO5]**	**[10M]**
2		Explain the working principles and application of Rotational Moulding	**[L2]**	**[CO6]**	**[10M]**
3		Explain the working principles and application of Injection Moulding	**[L2]**	**[CO6]**	**[10M]**
4	**a)**	Explain the structure of thermo plastic and thermosetting plastics.	**[L2]**	**[CO5]**	**[5M]**
	b)	Explain the polymerization briefly?	**[L2]**	**[CO5]**	**[5M]**
5		Explain the working principles and application of Transfer Moulding.	**[L2]**	**[CO6]**	**[10M]**
6		Explain the working principles and application of Blow Moulding.	**[L2]**	**[CO6]**	**[10M]**
7	**a)**	Explain the various methods of Bonding of Thermoplastics.	**[L2]**	**[CO5]**	**[5M]**
	b)	Differentiate thermo plastics and thermo settings.	**[L3]**	**[CO5]**	**[5M]**
8	**a)**	What are the major considerations in the design of plastic parts?	**[L1]**	**[CO5]**	**[5M]**
	b)	Explain briefly about calendaring with neat sketch	**[L2]**	**[CO6]**	**[5M]**
9		Write short note: 1) Film blowing 2) Extrusion process.	**[L2]**	**[CO6]**	**[10M]**
10	**a)**	State how joining and machining of plastics are carried out?	**[L3]**	**[CO6]**	**[5M]**
	b)	what are the foamed plastics and state how foaming is done	**[L1]**	**[CO6]**	**[5M]**