



# NARSIMHA REDDY ENGINEERING COLLEGE

## UGC AUTONOMOUS INSTITUTION

Maisammaguda (V), Kompally - 500100, Secunderabad, Telangana State, India

UGC - Autonomous Institute  
Accredited by NBA & NAAC with 'A' Grade  
Approved by AICTE  
Permanently affiliated to JNTUH

### Question Bank

Year/Sem: II/I

Course Title: **Production Technology**

Course Code: **23ME304**

Regulation: **NR23**

#### **COURSE OVERVIEW:**

This course is to introduce the concept of production process with the help of various processes widely employed in the industries. This course consists of casting, welding, sheet metal forming, extrusion and forging processes with the related details of equipment and applications. It introduces the different manufacturing processes and breakeven analysis. Engineering materials, laying emphasis on ferrous and non-ferrous materials along with the heat treatment of metals discusses the special casting processes and metal-forming processes respectively.

#### **COURSE OBJECTIVES:**

- To teach the process-level dependence of manufacturing systems through tolerances
- To expose the students to a variety of manufacturing processes including their suitability and capabilities.
- To teach the important effects that manufacturing processes may have on the material properties of the processed part with a focus on the most common processes.
- To teach the thermal and mechanical aspects, such as force, stress, strain and temperature of the most common processes.
- To provide a technical understanding of common processes to aid in appropriate process selection for the material and required tolerances
- To provide a technical understanding of common processes to aid in appropriate material selection for a predetermined process.

#### **COURSE OUTCOMES:** Student will be able to:

1. Elaborate the fundamentals of various moulding, casting techniques and furnaces.
2. Identify the importance of permanent joining and principle behind different welding processes.
3. Explain the concepts of solid-state welding processes
4. Understand the concepts of rolling and sheet metal operations in metal working.
5. Elaborates the uniqueness of extrusion, forging and high energy rate forming processes in metal working.

## Unit-I

S.No.	Questions	BT	CO	PO	
<b>Part – A (Short Answer Questions)</b>					
1	what is a casting?	L1	1	1	
2	what are the advantages of a casting?	L1	1	1	
3	state the steps involved in casting process.	L2	1	1	
4	List out the casting processes.	L2	1	1	
5	what is a cope box in a casting?	L1	1	1	
6	what is a drag box in a casting?	L1	1	1	
7	what are the materials used for patterns?	L1	1	1	
8	what factors controls the selection of pattern material?	L2	1	1	
9	what are pattern allowances?	L1	2	1	
10	list the types of patterns used in casting.	L2	2	1	
<b>Part – B (Long Answer Questions)</b>					
11	a)	Explain the casting process in detail with a neat sketch.	L1	1	1
	b)	Explain the cold chamber die casting with a neat figure.	L2	3	1
12	a)	What are the advantages of a casting process? Explain.	L1	2	1
	b)	Explain the centrifugal casting process with a sketch.	L2	3	1
13	a)	Explain the different types of patterns used in a casting process?	L1	2	1
	b)	Explain the cooling curve of an alloy.	L2	2	1
14	a)	What are the different types of allowances used in a pattern?	L1	3	1
	b)	Explain the hot chamber die casting with a neat sketch.	L1	3	1
15	a)	Explain the working principle of a cupola furnace.	L2	3	1
	b)	Explain the casting defects with neat figures.	L2	2	1
16	a)	What is die casting? Explain with a neat figure.	L1	1	1
	b)	Explain the shell moulding process with a neat figure.	L2	1	1



NRCM

your roots to success...

**UNIT-II**

S.No	Questions	BT	CO	PO	
<b>Part – A (Short Answer Questions)</b>					
1	what is a welding?	L1	3	1	
2	what is a gas welding?	L1	4	1	
3	what is an arc welding?	L2	4	1	
4	what is the purpose of an electrode in an arc welding?	L1	4	1	
5	list the types of flames used in welding?	L2	4	1	
6	what is a back hand welding?	L1	4	1	
7	what is importance of a flux in a welding?	L1	4	1	
8	what is forge welding?	L2	4	1	
9	what is spot welding?	L1	4	1	
10	what is a thermit mixture used in a welding?	L1	4	1	
<b>Part – B (Long Answer Questions)</b>					
11	a)	Explain the gas welding process with a neat sketch.	L2	4	1
	b)	Explain the process of submerged arc welding process.	L2	4	1
12	a)	Explain the different types of flames used welding process.	L2	4	1
	b)	What is the importance of a flux coating for electrodes?	L1	4	1
13	a)	Explain the gas cutting operation in detail.	L2	4	1
	b)	What are the advantages and disadvantages of a submerged arc welding processes?	L1	4	1
14	a)	What is the difference between the gas and arc welding process	L1	4	1
	b)	Explain the different types of spot welding processes with neat figures.	L2	4	1
15	a)	Explain the edge preparation process in a welding operations.	L2	4	1
	b)	What is a thermit welding? Explain in detail with a neat figure.	L1	4	1
16	a)	Explain the forge welding process with a neat sketch.	L2	4	1
	b)	Distinguish between backhand and forehand welding process?	L2	4	1

**UNIT-III**

S.No	Questions	BT	CO	PO	
<b>Part – A (Short Answer Questions)</b>					
1	what is the inert gas used in a welding?	L1	4	2	
2	what is a TIG stands in a welding?	L1	4	2	
3	what type of electrode used in a MIG welding?	L1	4	2	
4	what is a submerged arc welding?	L1	4	2	
5	what is a friction welding?	L1	4	2	
6	how heat is obtained in an induction welding?	L2	4	2	
7	what are eddy currents in a welding?	L1	4	2	
8	what is an explosive welding?	L1	4	2	
9	what is the importance of a laser in welding?	L2	4	2	
10	what is the main difference between soldering and brazing?	L2	4	2	
<b>Part – B (Long Answer Questions)</b>					
11	a)	Explain the process of TIG welding with a neat sketch.	L2	4	2
	b)	What is the importance of a laser beam in welding process?	L2	4	2
12	a)	How TIG welding is different from MIG welding? Explain.	L2	4	2
	b)	Explain the following terms with figures a) soldering b) brazing	L1	4	2

13	a)	Explain the advantages of a friction welding compared to arc welding.	L2	4	2
	b)	How HAZ influences the properties of material in welding?	L2	4	2
14	a)	What are the different types of friction welding? Explain.	L1	4	2
	b)	Briefly explain the various NDT techniques used in welding process.	L2	4	2
15	a)	Describe the process of induction welding with a neat figure.	L1	4	2
	b)	Discuss the various welding defects with sketches.	L2	4	2
16	a)	Explain the importance of Explosive welding process with a neat sketch.	L1	4	2
	b)	Describe the process of MIG welding with a neat figure.	L2	4	2

### UNIT-IV

S.No	Questions	BT	CO	PO
<b>Part – A (Short Answer Questions)</b>				
1	what is hot working?	L1	5	2
2	state the methods of hot working.	L2	5	2
3	what is a re-crystallization in hot working?	L1	5	2
4	what is forming process?	L1	5	2
5	what is strain hardening?	L1	5	2
6	what is advantage of a hot spinning?	L2	5	2
7	what is bending process?	L1	5	2
8	what is a rolling operation?	L1	5	2
9	what is the difference between wire drawing and tube drawing?	L2	5	2
10	what is a deep drawing?	L1	5	2
<b>Part – B (Long Answer Questions)</b>				
11	a) Explain the advantages and disadvantages of hot working process.	L2	5	2
	b) What is a bending? Explain in detail with a neat sketch.	L1	5	2
12	a) Distinguish between the hot working and cold working processes.	L2	5	2
	b) What is recrystallization ? Explain in detail.	L2	5	2
13	a) Describe in detail the process of rolling with a neat sketch	L1	5	2
	b) Briefly explain the terms a) piercing b)blanking c)forming d)bending	L1	5	2
14	a) Explain the different types of rolling mills with neat figures.	L2	5	2
	b) Describe the spinning process with a neat sketch.	L1	5	2
15	a) Explain how tube drawing is different from wire drawing?	L2	5	2
	b) Distinguish between drawing and deep drawing process.	L2	5	2
16	a) Enumerate the applications of press tools in detail	L2	5	2
	b) Explain the changes in micro-structure during the rolling process with a neat figure.	L1	5	2

## UNIT-V

S.No.	Questions	BT	CO	PO
<b>Part – A (Short Answer Questions)</b>				
1	What is an Extrusion process?	L1	5	2
2	What type of stresses the work will undergo?	L1	5	2
3	What are the types of extrusions?	L1	5	2
4	What is the difference between cold and hot extrusions?	L2	5	2
5	What is an impact extrusion?	L2	5	2
6	What is a forging process?	L1	5	2
7	State forging operations.	L2	5	2
8	What is drop forging?	L1	5	2
9	What is a swaging?	L1	5	2
10	What is a roll forging?	L1	5	2
<b>Part – B (Long Answer Questions)</b>				
11	a) Distinguish between direct and indirect extrusion processes with neat figures.	L2	5	2
	b) Explain the different forging defects with neat figures.	L1	5	2
12	a) Describe an impact extrusion process with a neat sketch.	L2	5	2
	b) Explain the explosive forming process with a neat figure.	L1	5	2
13	a) Explain the process of hydrostatic extrusion process with a neat figure.	L2	5	2
	b) What is electro-hydraulic forming process? explain with a neat sketch.	L2	5	2
14	a) Explain the bending process used in an industry with a neat figure.	L1	5	2
	b) What is a cold and hot forging? Explain with a neat figure.	L2	5	2
15	a) Explain the process of electro-magnetic forming process.	L1	5	2
	b) How roll forging is different from rotary forging? Explain.	L1	5	2
16	a) Explain the rubber pad forming process with a neat sketch.	L2	5	2
	b) Explain the difference between the open and closed forging operations.	L2	5	2

\* **Blooms Taxonomy Level (BT)**(L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analyzing; L5 – Evaluating; L6 – Creating)

your roots to success...