SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF MECHANICAL ENGINEERING

QUESTION BANK

III SEMESTER

1909303 - MANUFACTURING PROCESSES

Regulations - 2019

Academic Year 2022 - 2023

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UNIT-1 METAL CASTING PROCESSES

Sand Casting : Sand Mould – Type of patterns - Pattern Materials – Pattern allowances – Moulding sand Properties and testing – Cores –Types and applications – Moulding machines– Types and applications; Melting furnaces : Blast and Cupola Furnaces; Principle of special casting processes : Shell - investment – Ceramic mould – Pressure die casting - Centrifugal Casting - CO2 process – Stir casting; Defects in Sand

PART-A (2marks)

Q.No	Questions	BT Level	Competence
1	Define the characteristics of core.	BT1	Remembering
2	Classify the different types of patterns.	BT2	Understanding
3	Point out the types of furnace used for melting ferrous material and why?	BT4	Analyzing
4	Define core print.	BT1	Remembering
5	Point out the factors to be considered in calculating the shrinkage allowance.	BT4	Analyzing
6	What are the applications of casting?	BT1	Remembering
7	Differentiate sand blasting and shot blasting.	BT4	Analyzing
8	What are the advantages and applications of ceramic moulds?	BT2	Understanding
9	Examine the causes for the formation of blow holes in the sand casting.	BT1	Remembering
10	Differentiate shrinkage and porosity.	BT4	Analyzing
11	What are the pattern materials?	BT1	Remembering
12	Compare the advantages of metal moulds over expendable moulds.	BT4	Analyzing
13	Illustrate the function of flux in melting metals and alloys.	BT3	Applying
14	Describe the essential requirements of a cores and briefly.	BT2	Understanding
15	Write the requirements of a good pattern.	BT5	Evaluating
16	Define Casting.	BT1	Remembering
17	Generalize the properties of molding sand.	BT6	Creating
18	Give the names of the alloys which are generally die cast. Why are aluminum alloys preferably cast in cold chamber die casting machines?	BT3	Applying
19	What is core venting?	BT2	Understanding
20	Describe the ideal profile of a sprue.	BT5	Evaluating
21	Why is a taper allowance used ?	BT2	Understanding
22	What is meant by grain fineness number?	BT1	Remembering

23	Mention any two advantages and disadvantages of die casting.	BT2	Understanding
24	Explain the term fettling.	BT1	Remembering
25	Name the factors affecting permeability test	BT2	Understanding

PART –B (13marks)

Q.No	Questions	Marks	BT Level	Competence
1	(i) Describe the preparation of sand moulding process. (ii)Explain various types of patterns used in mould making.	7 6	BT2 BT4	Understanding Analyzing
2	(i) Classify the materials used for pattern making and explain. (ii)What are the allowances given while making pattern? Explain.	7 6	BT5 BT4	Evaluating Analyzing
3	(i) Classify the different types of moulding sand and explain. (ii)Explain the method of moulding sand testing.	6 7	BT5 BT5	Evaluating Evaluating
4	(i) Describe the various properties required for the moulding sand. (ii) Explain types of cores and its application.	7 6	BT1 BT4	Remembering Analyzing
5	Discuss the various steps involved in sand core manufacturing.	13	BT1	Remembering
6	(i) Describe squeeze jolting machine with neat sketch. (ii) Explain sand slinger machine with neat sketch.	7 6	BT4 BT4	Analyzing Analyzing
7	(i) Explain the jolting machine with a neat sketch. (ii)Explain construction and operation of blast furnace with a sketch.	6 7	BT4 BT4	Analyzing Analyzing
8	Describe the construction feature and working of a cupola furnace.	13	BT1	Remembering
9	Enumerate the steps in sequence for producing shell moulding.	13	BT4	Analyzing
10	(i) Explain ceramic moulding with a sketch. (ii)With the help of neat sketch, describe in detail, the process of producing components by pressure die casting.	7 6	BT4 BT1	Analyzing Remembering
11	(i) Describe with a neat sketch of cold chamber die casting machine. (ii)Describe the procedure of making castings by the true centrifugal casting and list out advantages and disadvantages.	7 6	BT2 BT2	Understanding Understanding
12	(i) Briefly describe hot chamber die casting process. (ii) Describe any one type of Centrifugal casting with neat diagram.	7 6	BT2 BT1	Understanding Remembering
13	Explain how the pipes and cylinder liners are made by centrifugal casting process.	13	BT4	Analyzing
14	Describe with a neat sketch the stir casting processes. Give its advantages and disadvantages.	13	BT5	Evaluating
15	Explain the various step involved in lost wax-process with suitable sketches.	13	BT4	Analyzing
16	Compare precision investment casting and shell moulding form the	13	BT2	Understanding

	point of process product and application.			
17	Briefly explain the principle operation advantages, disadvantages and application of CO2 moulding.	13	BT2	Understanding
18	Name any six casting defects and explain the remedies for those defects.	13	BT1	Remembering

PART-C (15marks)

Q.No	Questions	Marks	BT Level	Competence
1	Recommend the basic rules to be followed in good casting design.	15	BT5	Evaluating
2	Explain the requirements for the pattern material. Discuss the suitability of following materials: Wood, Aluminum, Rubber, Brass and White metal.	15	BT2	Understanding
3	Chocolate is available in hollow shapes. What process is used to make these candies?	15	BT6	Creating
4	Recommend a suitable casting process for making small toys with suitable example.	15	BT6	Creating
5	Explain why squeeze casting produces parts with mechanical properties, Dimensional accuracy and surface finish than expendable mold processes.	15	BT5	Evaluating

UNIT-2 JOINING PROCESSES			
Operating principle, basic equipment, merits and applications of: Fusion welding processes: Gas welding - Types – Flame characteristics; Manual metal arc welding – Gas Tungsten arc welding-Gas metal arc welding – Submerged arc welding – Electro slag welding; Operating principle and applications of: Resistance welding - Plasma arc welding – Thermit welding – Electron beam welding – Friction welding and Friction Stir Welding; laser beam welding and under water welding -Brazing and soldering; Weld defects: types, causes and cure.			
PART-A (2marks)			
Q.No	**Questions**	**BT Level**	**Competence**
1	Why shielding of weld area during welding is necessary?	BT4	Analyzing
2	Point out the different types of Oxyacetylene flame by sketches.	BT4	Analyzing
3	List out any four arc welding equipment.	BT1	Remembering
4	Describe flame characteristics.	BT1	Remembering
5	Define the role flux in welding operation.	BT1	Remembering
6	Discuss the principle of manual metal arc welding.	BT4	Analyzing
7	What is weld porosity? How is it caused?	BT1	Remembering
8	List the advantages of AC equipment over DC equipment in arc Welding.	BT1	Remembering
9	What is the application of carburizing flame?	BT5	Evaluating
10	Why flux is coated on filler rods?	BT1	Remembering
11	Differentiate soldering and brazing.	BT1	Remembering
12	Define Friction welding.	BT1	Remembering
13	Formulate the process parameters in FSW.	BT6	Creating
14	Describe thermit welding briefly.	BT5	Evaluating
15	Differentiate transferred and Non-Transferred Plasma arc welding.	BT2	Understanding
16	Evaluate why spot welding is commonly used in automotive bodies?	BT5	Evaluating
17	Illustrate that the seam welding is an application of spot welding.	BT3	Applying
18	Describe the meaning of Nugget in Electric Resistance Welding.	BT2	Understanding
19	List any four welding defects.	BT1	Remembering
20	Examine the causes of welding defects.	BT3	Applying
21	What do you mean by bronze welding?	BT1	Remembering
22	Explain in short plasma arc welding.	BT1	Remembering
23	Give the applications of gas welding.	BT2	Understanding
24	Define SMAW.	BT1	Remembering
25	What is brazing?	BT1	Remembering

PART –B (13marks)				
Q.No	**Questions**	**Marks**	**BT Level**	**Competence**
1	Describe various types of welding joints with neat sketch and list out the types of edge preparation before welding process.	13	BT1	Remembering
2	(i)Distinguish between gas welding and arc welding. (ii)Differentiate MIG and TIG Welding.	7 6	BT4 BT4	Analyzing Analyzing
3	(i)List out the types of arc welding process and list out the arc Welding equipment's and selection factors for power sources. (ii)Describe with neat sketch about the various components of Oxy-Acetylene gas welding equipment.	7 6	BT1 BT1	Remembering Remembering
4	(i) Analyze various types of oxy-acetylene flames with sketches. (ii)Explain Manual Metal Arc Welding process with neat sketch.	6 7	BT4 BT4	Analyzing Analyzing
5	(i) Evaluate the equipment and operation of GTAW process. (ii)Explain about the advantages and disadvantages of GTAW.	7 6	BT5 BT5	Evaluating Evaluating
6	(i) Explain Gas metal Arc Welding process with neat diagram. (ii)Evaluate the advantages, disadvantages and applications of Gas Metal Arc welding process.	7 6	BT4 BT4	Analyzing Analyzing
7	(i) Describe submerged arc welding process with neat diagram. (ii)State its advantages and application of submerged arc welding process.	6 7	BT1 BT1	Remembering Remembering
8	(i)Describe the process of Electro Slag welding and mention their major application. (ii)what is the principle of Resistance spot welding processes	7 6	BT1 BT1	Remembering Remembering
9	(i)Describe plasma arc welding and give their application (ii)Differentiate upset welding and flash welding.	7 6	BT4 BT4	Analyzing Analyzing
10	(i)Explain the advantages, disadvantages and limitations of Resistance welding process. (ii)Explain the percussion welding processes.	6 7	BT4 BT4	Analyzing Analyzing
11	Sketch and name the various component of the thermit welding process.	13	BT4	Analyzing
12	(i)Evaluate the principle and application of Friction welding process. (ii)Explain the principle and application of resistance seam welding process.	6 7	BT5 BT4	Evaluating Analyzing
13	(i) Explain the advantages of Friction stir welding. (ii) Compare and Contrast Brazing and Soldering Process.	6 7	BT4 BT5	Analyzing Evaluating

14	Classify and enumerate the various welding defects with causes of occurrences and describe a method of detecting cracks on a weld surface.	13	BT2	Understanding
15	Explain various welding position with a neat sketch.	13	BT1	Remembering
16	Briefly explain the principle of operation advantages and limitations of Electron beam welding	13	BT1	Remembering
17	Explain the method of laser beam welding and give their applications.	13	BT1	Remembering
18	(i)Describe the types of flames using in gas welding processes. (ii)Write short notes on soldering process.	7 6	BT1 BT6	Remembering Creating
PART-C (15marks)				
Q.No	**Questions**	**Marks**	**BT Level**	**Competence**
1	How do you compare ac and dc arc welding? What are the advantages of each of the several sources of current for arc welding? What do you understand by the term "polarity" and what is the advantage/disadvantage of having different polarities?	15	BT6	Creating
2	Explain the principle of atomic hydrogen welding and role of hydrogen in this welding?	15	BT5	Evaluating
3	Summarize suitable NDT methods to examine welding defects.	15	BT6	Creating
4	Evaluate underwater welding.	15	BT5	Evaluating
5	List out the different types of welding processes. Briefly explain the working principle of any two welding processes.	15	BT-1	Remembering

UNIT-3 BULK DEFORMATION PROCESSES			
Hot working and cold working of metals – Forging processes – Open, impression and closed die forging – forging operations. Rolling of metals– Types of Rolling – Flat strip rolling – shape rolling operations – Defects in rolled parts. Principle of rod and wire drawing – Tube drawing – Principles of Extrusion – Types – Hot and Cold extrusion.			
PART-A (2marks)			
Q.No	**Questions**	**BT Level**	**Competence**
1	Define hot working of metals.	BT1	Remembering
2	How are seamless tubes produced?	BT2	Understanding
3	Analyze why surface finish of a rolled products better in cold rolling than in hot rolling.	BT4	Analyzing
4	Define angle of bite in rolling.	BT1	Remembering
5	Enumerate lateral Extrusion.	BT1	Remembering
6	Classify the various forming processes.	BT3	Applying
7	Identify various defects in rolled parts.	BT1	Remembering
8	Summarize the effects of cold working.	BT5	Evaluating
9	Define ironing.	BT1	Remembering
10	Differentiate compound dies and progressive dies.	BT4	Analyzing
11	List out some common applications where extrusion is used.	BT1	Remembering
12	Point out the advantages of cold extrusion.	BT4	Analyzing
13	Name the types of forging machines.	BT1	Remembering
14	Define upsetting and drawing down in forging operation.	BT1	Remembering
15	Sketch the different types of rolling mills.	BT3	Applying
16	Differentiate hot and cold forging.	BT4	Analyzing
17	What is the difference between extrusion and forging?	BT4	Analyzing
18	Define fullering.	BT1	Remembering
19	Enumerate recrystallization temperature.	BT4	Analyzing
20	List out any four parts that can be manufactured by shape rolling operations.	BT1	Remembering
21	Explain cluster rolling mill.	BT1	Remembering
22	What is tandem rolling mill ?	BT1	Remembering
23	Define swaging.	BT1	Remembering
24	Compare hot and cold working.	BT4	Analyzing
25	What are the four major drawbacks of hot working?	BT2	Understanding

PART –B (13marks)				
Q.No	**Questions**	**Marks**	**BT Level**	**Competence**
1	(i) Evaluate hot working and cold working processes. (ii) Explain various forging operation.	7 6	BT4 BT4	Analyzing Analyzing
2	(i) Explain the steps involved in drop forging with neat sketches (ii) Describe open die forging.	7 6	BT4 BT1	Analyzing Remembering
3	(i) Formulate the advantages and limitations of closed die forging. (ii) Explain precision forging process.	6 7	BT6 BT1	Creating Remembering
4	(i) Evaluate flashless forging operation. (ii) Explain about Impression die forging.	6 7	BT5 BT4	Evaluating Analyzing
5	(i) Explain in detail about the defects occurred in forging operations. (ii) Draw a simple sketch showing rolling process and make a short note on deformation of grains in rolling.	6 7	BT4 BT4	Analyzing Analyzing
6	With neat sketches, Explain the different types of roll stand arrangements used in the rolling mill and state clearly for what purpose each arrangement is used.	13	BT1	Remembering
7	(i) Describe the ring rolling and thread rolling process. (ii)Summarize the types of defects in rolled parts.	7 6	BT2 BT2	Understanding Understanding
8	With neat sketches, explain the following smith operation i) Upsetting ii) Bending iii) Swaging iv) Fullering	13	BT3	Applying
9	(i) Evaluate wire drawing. (ii) Explain with neat sketches the process of tube drawing of metals.	7 6	BT5 BT4	Evaluating Analyzing
10	(i) Explain with a neat sketch the process of Rod Drawing. (ii) Explain about Hot and Cold Extrusion.	6 7	BT5 BT5	Evaluating Evaluating
11	Explain forward and backward extrusion process.	7	BT4	Analyzing

12	Explain the working of Mannesmann processes with a neat sketch.	13	BT4	Analyzing
13	(i) Compare direct and indirect Extrusion process (ii) Write short notes on impact extrusion and hydro static extrusion	7 6	BT5 BT4	Evaluating Analyzing
14	With neat diagram explain the process of forward extrusion and also explain how hollow sections can be produced in this process.	13	BT1	Remembering
15	Describe the following processes a. Roll die forging b. Skew rolling c. Ring rolling	13	BT1	Remembering
16	Sketch and explain the working of universal rolling mill and planetary rolling mill.	13	BT1	Remembering
17	Derive the mathematical expression for the flat strip rolling process to calculate the rolling load.	13	BT5	Evaluating
18	How is tube drawing carried out? Explain with a suitable sketch.	13	BT1	Remembering

PART-C (15marks)

Q.No	Questions	Marks	BT Level	Competence
1	Formulate the mathematical expression for the flat strip metal rolling process to calculate the rolling load.	15	BT6	Creating
2	Develop the technological steps for manufacturing a crane hook with best mechanical properties. Sketch the various stages and name the operations.	15	BT6	Creating
3	Explain a suitable process to form heads in fasteners such as nails and bolts.	15	BT5	Evaluating
4	Recommend the safety rules and regulation in smithy shop.	15	BT6	Creating
5	Explain Why there are so many different kinds of forging machines available.	15	BT6	Creating

UNIT-4 SHEET METAL PROCESSES

Sheet metal characteristics – shearing, bending and drawing operations – Stretch forming operations – Formability of sheet metal – Test methods –special forming processes-Working principle and applications – Hydro forming – Rubber pad forming – Metal spinning– Introduction of Explosive forming, magnetic pulse forming, peen forming, Super plastic forming – Micro forming.

PART-A (2marks)

Q.No	Questions	BT Level	Competence
1	Define shear angle. Why it is given in punches and dies?	BT1	Remembering
2	Define formability	BT1	Remembering
3	List out test methods for testing formability of material.	BT1	Remembering
4	Distinguish piercing and blanking.	BT2	Understanding
5	Examine how sheet metal operations classified and what are they.	BT3	Applying
6	Formulate the categories of sheet metal working processes.	BT6	Creating
7	Describe springback effect and how it is overcome in sheet metal work.	BT4	Analyzing
8	Point out the various types of sheet metal dies.	BT4	Analyzing
9	Discuss springback in bending operation.	BT2	Understanding
10	Differentiate stretch forming and bending.	BT4	Analyzing
11	Analyze the purpose of detonatorin explosive forming.	BT4	Analyzing
12	Point out the basic requirement of super plastic forming.	BT4	Analyzing
13	Differentiate a cut-off operation and a parting operation	BT4	Analyzing
14	List the advantages of super plastic forming processes.	BT1	Remembering
15	Analyze the reason for providing proper clearance between the punch and die in a shearing operation.	BT4	Analyzing
16	Define lancing operation that is done on sheet metals.	BT1	Remembering
17	Explain the limitations of Explosive forming.	BT5	Evaluating
18	List out the advantages of hydro forming process.	BT1	Remembering
19	Enumerate peen forming.	BT1	Remembering
20	Define micro forming.	BT1	Remembering
21	Explain bend radius.	BT1	Remembering
22	Define Embossing.	BT1	Remembering
23	Define shaving	BT1	Remembering
24	Define lancing	BT1	Remembering
25	What is super plastic forming operation?	BT1	Remembering

PART –B (13marks)				
Q.No:	**Questions**	**Marks**	**BT Level**	**Competence**
1	Summarize the sheet metal characteristics.	13	BT5	Evaluating
2	(i) Write a short note on sheet bending and perforating operation. (ii)Explain the important factors of bending operation.	7 6	BT5 BT4	Evaluating Analyzing
3	Write short notes on the following a. Shearing b. Blanking c. Clearance in shearing d. Spring back in bending	 3 3 3 4	BT1	Remembering
4	(i) Explain the different types of bending process.	13	BT4	Analyzing
5	(i) Explain various sheet metal drawing operations with sketches. (ii) Describe with a neat sketch any two types of stretch forming operations.	6 7	BT5 BT1	Evaluating Remembering
6	(i) Explain the formability of sheet metals and formability test methods. (ii) Compare Conventional forming with high strain rate forming technique.	7 6	BT5 BT5	Evaluating Evaluating
7	(i) With a neat sketch, explain hydro forming. (ii) Describe rubber pad forming with suitable sketch.	6 7	BT5 BT1	Evaluating Remembering
8	(i) Explain metal spinning operation with a diagram. (i) Summarize the advantages and applications of metal spinning.	7 6	BT4 BT5	Analyzing Evaluating
9	(i) What is high energy rate forming? List the different types and explain any two in detail. (ii)Describe Magnetic Pulse Forming with a neat sketch.	7 6	BT6 BT1	Creating Remembering
10	(i) Explain peen forming with sketch. (ii) Describe super plastic forming and explain with neat sketch.	7 6	BT4 BT1	Analyzing Remembering
11	(i) Explain Micro forming. (ii) Describe die cutting and slitting operations.	6 7	BT4 BT2	Analyzing Understanding
12	(i) Describe nibbling and notching operations. (ii) Explain in detail about the Coining and Embossing Process.	7 6	BT2 BT4	Understanding Analyzing
13	(i) Point out the advantages and limitation of compound dies over progressive dies. (ii) Analyze the reasons to provide proper clearance between the punch.	7 6	BT4 BT4	Analyzing Analyzing

14	(i) Differentiate single die and multiple operation die with neat sketch (ii) Discuss the advantages and limitations of single and multiple die.	7 6	BT2 BT2	Understanding Understanding
15	Describe the various test methods used in sheet metal forming	13	BT2	Understanding
16	How curvatures are made on thin sheet metals, explain the suitable process with a neat sketch.	13	BT1	Remembering
17	(i)What is super plastic forming? Explain with a neat sketch. (ii)Describe forming limit diagram	7 6	BT1	Remembering
18	What is high energy rate forming? List the different types and explain any two in detail.	13	BT1	Remembering

PART-C (15marks)

Q.No	Questions	Marks	BT Level	Competence
1	Recommend the steps involved in manufacturing metal kitchen sinks with neat sketches.	15	BT6	Creating
2	Examine some of the products in your home that are made of sheet metal, & Discuss the process by which you think they were made.	15	BT5	Evaluating
3	Explain with necessary sketch, application of following sheet metal forming operation: Shaving, Slitting, Notching.	15	BT6	Creating
4	Explain a method for manufacturing, honey comb panels for aircraft wings.	15	BT5	Evaluating
5	Explain the steps involved in manufacturing an automobile vehicle body panel with neat sketches.	15	BT6	Creating

UNIT-5 MANUFACTURE OF PLASTIC COMPONENTS

Types and characteristics of plastics – Moulding of thermoplastics – working principles and typical applications – injection moulding – Plunger and screw machines – Compression moulding, Transfer Moulding – Typical industrial applications – introduction to blow moulding –Rotational moulding – Film blowing – Extrusion – Thermoforming – Bonding of Thermoplastics.

PART-A (2marks)

Q.No.	Questions	BT Level	Competence
1	Define polymerization.	BT1	Remembering
2	List out any four types of adhesives used in adhesive bonding of plastics.	BT1	Remembering
3	Analyze the need for rotational moulding in manufacturing plastic components.	BT4	Analyzing
4	Point out some applications of transfer moulding.	BT4	Analyzing
5	Define Elastomers.	BT1	Remembering
6	Discuss a few applications of plastics.	BT2	Understanding
7	Define reinforced plastics and where it is applied.	BT1	Remembering
8	Point out the industrial uses of fibres and filaments.	BT4	Analyzing
9	Enumerate film blowing.	BT4	Analyzing
10	Point out some examples of reinforced plastics.	BT4	Analyzing
11	Name the types of plastics.	BT1	Remembering
12	Define thermo forming.	BT1	Remembering
13	Describe polythene.	BT1	Remembering
14	Name the common thermosetting plastics.	BT1	Remembering
15	List out the different types of compression moulds.	BT1	Remembering
16	Define Pulse forming.	BT1	Remembering
17	Enumerate calendaring in processing of plastics.	BT5	Evaluating
18	Describe briefly the principle of film blowing.	BT2	Understanding
19	Name two differences between thermoplastics and thermosetting plastics.	BT1	Remembering
20	Name two adhesives that are used for adhesive bonding of plastics.	BT1	Remembering
21	Define pressure forming?	BT1	Remembering
22	What is parison ?	BT1	Remembering
23	What are the characteristic of thermoplastics?	BT1	Remembering
24	Give the application of compression moulding.	BT2	Understanding
25	What are the characteristic of thermoplastics?	BT1	Remembering

PART –B (13marks)				
Q.No	**Questions**	**Marks**	**BT Level**	**Competence**
1	(i) Explain the types of Plastics. (ii) State the purpose of the following plastics 1.Plasticizers 2.Filler 3.Stablizers	5 8	BT5 BT5	Evaluating Evaluating
2	Discuss about a few commercial plastics.	13	BT2	Understanding
3	(i)List out and write the various processes of joining plastics. (ii)Summarize the various differences between thermoplastics and thermosetting plastics.	7 6	BT1 BT5	Remembering Evaluating
4	Illustrate with suitable sketch the blow molding process for producing plastics serving bottles.	13	BT3	Applying
5	Describe briefly the plunger type injection, moulding process for producing plastics components. State its advantages and limitations.	13	BT2	Understanding
6	(i) Explain positive, semi positive and flash type Compression. (ii) State the typical industrial applications of transfer moulding.	7 6	BT4 BT1	Analyzing Remembering
7	(i) Explain transfer moulding. Discuss its advantages and limitations. (ii) Explain the process of compression moulding with neat diagram.	6 7	BT4 BT5	Analyzing Evaluating
8	Compare blow moulding and rotational moulding.	13	BT5	Evaluating
9	(i)Explain the blow moulding process with a neat diagram (ii)Write the different processing methods of plastics?	7 6	BT4 BT1	Analyzing Remembering
10	(i) Explain the calendaring process. (ii)Enumerate the various methods of bonding thermoplastics.	7 6	BT5 BT4	Evaluating Analyzing
11	Discuss in detail the various thermosetting and thermoplastic compound and their application.	13	BT2	Understanding
12	Describe any two types of thermoforming process	13	BT1	Remembering

13	Explain how plastic sheets are produced by thermoforming method.	13	BT1	Remembering
14	Explain various methods of bonding of thermoplastics.	13	BT2	Understanding
15	Give the sequence of operation in transfer molding for thermosetting plastic process.	13	BT 4	Analyzing
16	Discuss the advantage and application of compression and transfer molding process.	13	BT2	Understanding
17	(i)Explain the process rotational moulding. (ii)Explain vacuum thermoforming process.	7 6	BT4 BT2	Analyzing Understanding
18	With a neat sketch, Enumerate the working principle of reciprocating screw injection moulding machine.	13	BT1	Remembering
PART-C (15marks)				
Q.No	**Questions**	**Marks**	**BT Level**	**Competence**
1	Explain a method for manufacturing, Plastic ballpoint pen outer body.	15	BT2	Understanding
2	Recommend a suitable Manufacturing process for producing plastic bottles and plastic foot balls.	15	BT6	Creating
3	An increasing environmental concern is the long time required for degradation of polymers in landfills. Recommend the trends and developments in the production of biodegradable plastics.	15	BT6	Creating
4	Inspect several electrical components, such as light switches, outlets and circuit breakers and describe the process used in making them.	15	BT6	Creating
5	Explain the Various Common Plastics Manufacturing Processes	15	BT2	Understanding