

Reg.No. \_\_\_\_\_



**Karunya UNIVERSITY**

(Karunya Institute of Technology & Sciences)  
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

**Code : 14ME2004**  
**Sub. Name : Manufacturing Processes**

**Semester : 2016-17 ODD**  
**Duration : 3hrs**  
**Max. marks : 100**

Q. No.	Questions	Course outcome	Marks
<b>PART-A (40X1=40 MULTIPLE CHOICE QUESTIONS)</b>			
1.	The top half of the moulding box is called as _____	CO1	
	a. drag      b. Cope      c. Pattern      d. sprue		(1)
2.	The function of riser is to _____	CO1	
	a. Pour molten metal      b. allow air to escape      c. supply extra metal during cooling      d. All the above		(1)
3.	The process of making a cavity for pouring molten metal is called _____.	CO1	
	a. Casting      b. Moulding      c. Cavity formation      d. All the above		(1)
4.	The type of sand which is sprinkled around the pattern to avoid sticking of patten with the moulding sand is _____.	CO1	
	a. Green sand      b. Dry sand      c. parting sand      d. facing sand		(1)
5.	_____ is simply the duplicate of the component which has to be manufactured by the casting process.	CO1	
	a. casting      b. core      c. pattern      d. sprue		(1)
6.	Mechanical aerators are generally used for increasing the _____.	CO1	
	a. cohesiveness      b. flowability      c. dry strength      d. Refractoriness		(1)
7.	_____ pattern is typically used in high production industry.	CO1	
	a. solid      b. split      c. match plate      d. cope and drag		(1)
8.	_____ is used largely for pipe works and drainage fittings.	CO1	
	a. shell pattern      b. split pattern      c. cope and drag pattern      d. sweep pattern		(1)
9.	Incomplete filling of mould cavity is called _____.	CO1	
	a. Cold shut      b. Blow holes      c. Misrun      d. Shrinkage cavity		(1)
10.	When fluidity of liquid metal is high the defect occur in casting is _____.	CO1	
	a. penetration      b. misrun      c. cold shot      d. cold shut		(1)
11.	Lost-wax casting is also known as_____.	CO1	
	a. Die Casting      b. Centrifugal Casting      c. Continuous Casting      d. Investment Casting		(1)
12.	In _____ casting, pattern tree is coated with a thin layer of refractory material.	CO1	
	a. Shell      b. Centrifugal      c. Investment      d. continuous		(1)
13.	A water cooled mold is used in _____ casting.	CO1	
	a. Semi-centrifugal      b. True centrifugal      c. Cenrifuge      d. Continuous		(1)
14.	_____ is the process in which the desired size and shape of components are obtained through the plastic deformation.	CO1	
	a. Casting      b. Joining      c. Forming      d. fabrication		(1)
15.	_____ is an example for sheet metal forming process.	CO1	
	a. Cup drawing      b. Rolling      c. Forging      d. Extrusion		(1)

16.	Which among the following is not belong to hand forging tool.				CO1	
	a. Drifts	b. Tongs	c. Rammer	d. Chisels		(1)
17.	_____ casting is used for making blooms and billets.				CO1	
	a. Semi-centrifugal	b. Continuous	c. True centrifugal	d. all the above		(1)
18.	_____ casting, is used to produce tubular parts.				CO1	
	a. Semi-centrifugal	b. Cenrifuge	c. True centrifugal	d. None		(1)
19.	In _____ process, pressure chamber connected to the die cavity that is immersed permanently in the molten metal.				CO1	
	a. cold chamber	b. hot chamber	c. permanent mould	d. all the above		(1)
20.	In _____ casting, density of metal in final casting is greater in outer sections than at center of rotation				CO1	
	a. Semi-centrifugal	b. Cenrifuge	c. True centrifugal	d. all the above		(1)
21.	In _____ extrusion, the problem of friction is prevalent .				CO1	
	a. Forward	b. Impact	c. Reverse	d. lateral		(1)
22.	Fish skin is one of the defects in _____				CO1	
	a. casting	b. rolling	c. Forming	d. extrusion		(1)
23.	In _____ method of tube drawing, the internal surface becomes uneven.				CO1	
	a. Sinking	b. Fixed plug	c. floating plug	d. moving mandrel		(1)
24.	Collapsible medicare tubes are produced using _____ extrusion.				CO1	
	a. Forward	b. Impact	c. Reverse	d. hydrostatic		(1)
25.	When the internal stresses exceeds the tensile strength of the steel, _____ occur in the forging.				CO1	
	a. porosity	b. cracks	c. pitting	d. dents		(1)
26.	In Blanking operation, the _____ is made to the correct hole size.				CO2	
	a. Blank	b. Die	c. punch	d. clearance		(1)
27.	_____ is the cutting operation which metal pieces are cut from the edge of a sheet, strip or blank.				CO2	
	a. Lancing	b. Notching	c. Perforating	d. Sliting		(1)
28.	_____ is the operation used to punch overlapping small holes along a contour to cut out.				CO2	
	a. Nibbling	b. Notching	c. Lancing	d. perforating		(1)
29.	_____ die performs two or more cutting operations simultaneously in a single stage.				CO2	
	a. Simple	b. Compound	c. Combination	d. Progressive		(1)
30.	_____ is defined as the straining of the sheet metal around a straight edge.				CO2	
	a. Blanking	b. Shearing	c. Bending	d. Drawing		(1)
31.	The amount of heat generated in resistance welding depends upon _____.				CO2	
	a. Force applied	b. Magnitude of current	c. Electrode material	d. Pressure applied time		(1)
32.	_____ is a welding technique used to connect parts which are nearly parallel and don't overlap in resistance welding.				CO2	
	a. Seam welding	b. Spot welding	c. Butt welding	d. projection welding		(1)
33.	The particle shape greatly effects the _____ of the final PM product.				CO2	
	a. Brittleness	b. Toughness	c. Hardness	d. porosity		(1)
34.	The process of compressing loose metal powder particles into required shape and size is called _____.				CO2	
	a. Briquetting	b. shaping	c. embossing	d. coining		(1)

35.	In PM _____ is carried out to impart required strength, density and hardness.	CO2	
	a. Sintering      b. Tempering      c. Normalizing      d. Cooling		(1)
36.	In PM, the temperature of sintering are kept _____ the melting point of main metal powder constituents.	CO2	
	a. Equal      b. Below      c. above      d. None		(1)
37.	_____ flame has three zones.	CO2	
	a. Neutral      b. Oxidizing      c. Carburizing      d. None		(1)
38.	Friction welding is an example for _____	CO2	
	a. Resistance welding      b. Gas welding      c. solid state welding      d. Arc welding		(1)
39.	In direct current arc welding the greater heat is generated at the _____ pole of the arc.	CO2	
	a. Positive      b. Negative      c. Both Positive and negative poles      d. None		(1)
40.	In punching operation, the die opening is made _____ an amount equal to die clearance.	CO2	
	a. oversize      b. smaller      c. equal      d. None		(1)

**PART B(8 X 5 = 40 MARKS) (ANSWER ANY EIGHT)**

41.	Discuss the important properties the moulding sand.	CO1	(5)
42.	Write short note on true centrifugal casting process.	CO1	(5)
43.	Distinguish between hot working and cold working	CO1	(5)
44.	Discuss the defects in extrusion.	CO1	(5)
45.	Describe the different types of sheet metal bending processes. Also explain the spring back phenomenon.	CO1	(5)
46.	Distinguish between compound die and combination die with simple sketches.	CO2	(5)
47.	List out the various defects in Welding operations with neat sketch	CO2	(5)
48.	List out the advantages and disadvantages of gas welding.	CO2	(5)
49.	Discuss the important properties of metal powders in powder metallurgy.	CO2	(5)
50.	Discuss the important applications of powder metallurgy.	CO3	(5)

**PART C( 2 X 10 = 20 MARKS) (ANSWER ANY TWO)**

51.	Explain the investment casting process with neat sketches: List out the advantages and limitations.	CO1	(10)
52.	Explain the MIG welding process with neat sketch. Also discuss its applications.	CO3	(10)
53.	Describe the steps involved in the manufacturing of products through powder metallurgy with relevant sketches.	CO2	(10)

ALL THE BEST

**Course outcome:**

Ability to

- Demonstrate the principles associated with basic operations involving casting, bulk forming of materials
- Demonstrate the principles associated with basic operations welding, sheet metal and powder metallurgy of engineering materials
- Recommend the most appropriate manufacturing process and material.