A **Reg. No. :** | | | | | | | | | | | | |

Question Paper Code: R3702

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

Third Semester

Mechanical Engineering

R21UME302 – FUNDAMENTALS OF MANUFACTURING PROCESSES

(Regulations R2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Chills are used in moulds to CO1- U

   (a) Achieve directional solidification (b)) Increase freezing zone

   (c) Reduce freezing zone (d)Smothen metal flow

2. The purpose of a runner is to CO1- U

   (a) deliver molten metal into the mould cavity

   (b) act as a reservoir for the molten metal

   (c) Feed the molten metal to the casting in order to compensate for the shrinkage

   (d) Deliver the molten metal from pouring basin to gate.

3. In which of the following process non-consumable electrode is used? CO1- U

   (a) TIG welding (b) MIG welding (c) Laser welding (d)Plasma arc welding

4. Which flame is suitable for welding steel? CO1-U

   (a) Oxidising flame (b) Carburising flame

   (c) Neutral flame (d) None of the above

5. Which of the following metal forming processes is best suitable for making the wires? CO1- U

   (a) forced drawing (b)hollow drawing (c)deep drawing (d)Nil

6. Which of the following processes is not the type of bulk forming process in the metal forming? CO1- U

   (a) Forging (b)Extrusion (c)Drawing (d)Rolling

7. Cutting a whole piece of the sheet metal is called ____ CO1- U

(a) Piercing (b) Shearing (c)Blanking (d)Trimming

8. _____ Metal sheet is used in tanks and stove pipes CO1-U

(a) Copper (b) Aluminium (c) Black iron (d) Galvanized

9. Plastic bottles are manufactured using the process of CO1- U

(a) blowmoulding (b) injection moulding

(c) atomizing (d) None of the above

10. The plastics which soften when heat is applied with or without pressure, but requires cooling to set them to shape are called as CO1- U

(a) Thermosetting materials (b) thermosetting materials

(c) thermoplastic materials (d) Thermostatting materials

PART – B (5 x 2= 10Marks)

11. State any four types of patterns. CO1- U

12. In TIG welding what is the function of Tungsten CO1- U

13. Explain tube drawing process. CO1- U

14. Point out the various stypes of sheet metaldies. CO1- U

15. Classify the common thermosetting plastics. CO1- U

PART – C (5 x 16= 80Marks)

16. (a) What are pattern allowances? Explain each in detail with a neat sketch. CO1 - U (16)

Or

(b) Explain about various sand casting defects and explain the remedies for those Defects. CO2 - App (16)

17. (a) Explain the Non-consumable electrode welding process with neat sketches. What are its merits , Limitation and applications ? CO1-U (16)

Or

(b) Explain the LBM process with neat sketches. What are its merits, Limitation and applications? CO1 - U (16)

18. (a) Explain with neat sketches the process of tube drawing of metals. CO2 - App (16)

Or

(b) With simple sketches , explain the various rolling process defects in details. CO2 - App (16)

19.	(a)	Describe metal spinning operation with diagram	CO4 - App	(16)
		Or		
	(b)	Illustrate a method for manufacturing, honeycomb panels for air craft wings.	CO4 - App	(16)
20.	(a)	Explain various types of thermoforming method shaping Thermo plastics.	CO1 - U	(16)
		Or		
	(b)	Explain various methods of bonding of thermoplastics	CO1 - U	(16)