Register No.:

9002

October 2025

Time – Two hours
(Maximum Marks: 60)

N.B.
1. Answer all questions under Part-A. Each question carries 1 mark.
2. Answer any 5 questions under Part-B. Each question carries 2 marks.
3. Answer any 3 questions under Part-C. Each question carries 10 marks.

PART – A

1. Which process is suitable for making plastic sheets and pipes continuously?
   a) Extrusion
   b) Compression molding
   c) Blow molding
   d) Injection molding

2. Why is venting provided in injection moulds?
   a) To remove trapped gases and prevent defects
   b) To reduce mould temperature
   c) To increase product strength
   d) To reduce raw material usage

3. The advantage of gas-assisted injection moulding is :
   a) Increases optical clarity
   b) Reduces cost of dyes
   c) Increases optical clarity
   d) Reduces cycle time and warpage

4. 4.Which process is suitable for making plastic sheets and pipes continuously?
   a) Extrusion
   b) Compression molding
   c) Blow molding
   d) Injection molding

5. Burnishing improves surface finish by :
   a) Material removal
   b) Chemical reaction
   c) Melting and solidification
   d) Plastic deformation

6. Micro and nano machining processes are widely used in :
   a) Shipbuilding
   b) Aerospace component repair
   c) MEMS and semiconductor industries
   d) Agricultural tools

7. Lapping is carried out using :
   a) A cutting tool
   b) Abrasive slurry and lap plate
   c) Electrode discharge
   d) Buffing wheel

8. In hot machining, the cutting tool is :
   a) Heated before machining
   b) Cooled using liquid nitrogen
   c) Applied to a preheated workpiece
   d) Rotated at high frequency

9. Unconventional machining processes are mainly used for :
   a) Soft materials
   b) Hard and brittle materials
   c) Only plastics
   d) Wood

10. Plasma Arc Machining (PAM) temperature range is approximately :
   a) 200°C
   b) 2000°C
   c) 200,000°C
   d) 20,000°C

11. Material removal in EDM takes place due to :
   a) Abrasion
   b) Spark erosion
   c) Electrolysis
   d) High pressure jet

12. Which of the following is NOT an unconventional machining process?
    a) EDM
    b) ECM
    c) Milling
    d) USM

13. The CNC coordinate system that specifies points using radius and angle is
    a) Cartesian
    b) Incremental
    c) Polar
    d) Absolute

14. G-code in CNC programming is used for :
    a) Motion control commands
    b) Tool change
    c) Start/stop
    d) Feed rate only

15. The main advantage of CNC machines is :
    a) High human involvement
    b) High precision and automation
    c) Low speed
    d) Low accuracy

16. Which offset is used to set the workpiece origin relative to machine zero?
    a) Tool offset
    b) Program zero
    c) Cutter compensation
    d) Work offset

17. STL files contains
    a) Mass properties of the model
    b) 2D drawing annotations
    c) Material property data
    d) Geometrical data

18. Which RP process uses adhesive to bond layers of paper or plastic?
    a) FDM
    b) SLA
    c) LOM
    d) SLS

19. Process of converting STL file model into layers is called in RP
    a) Slicing
    b) Chopping
    c) Cutting
    d) Trimming

20. SLA in rapid prototyping stands for :
    a) Solid Layer Assembly
    b) Stereolithography
    c) Surface Layer Application
    d) Standard Laser Assembly

PART – B

21. Give two examples of elastomers.
22. Differentiate between thermoplastics and thermosetting plastics.
23. State the purpose of shot peening.
24. Define burnishing.
25. Write any two applications of EDM.
26. Why are unconventional processes preferred over conventional processes for aerospace components?
27. What is cutter radius compensation in CNC?
28. Write any two advantages of Rapid Prototyping.

PART – C

29. Describe the Injection Moulding process of plastics with necessary diagram.
30. Explain the principle of honing process with neat sketch, Also list its applications, advantages.
31. Explain the construction and working principle of Abrasive Jet Machining (AJM).
32. Explain the Construction and Working of Turning Centre with a neat sketch.
33. Explain the Laser Sintering (SLS) with a neat sketch.
