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BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – Dip.ME-2024
Course Name – Manufacturing Engineering
Course Code - DME30102
(Semester III)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Identify the main purpose of a pattern in casting.
a) To melt the metal b) To form the mold cavity
c) To increase strength d) To provide cooling

(ii) Identify the function of the tailstock in lathe.
a) Tool holding b) Spindle rotation
c) Work support d) Feed motion

(iii) Identify the direction of feed during turning.
a) Radial b) Axial
c) Tangential d) Circular

(iv) Identify the function of coolant in machining.
a) Strengthens tool b) Improves finish
c) Reduces temperature d) To improves finish and reduce temperature

(v) Identify the causes of hot tear in casting.
a) High pouring temperature b) Low sand strength
c) Restrained contraction d) Excess metal

(vi) Select the option that is appropriate for the term arc blow in welding.
a) Heat distortion b) Weld spatter
c) Magnetic deflection of arc d) Gas turbulence

(vii) Identify the main advantage of friction welding.
a) Costly equipment b) No filler needed
c) Less speed d) High distortion

(viii) Identify the materials that is not suitable for CNC machining.
a) Mild steel b) Nylon
c) Granite d) Aluminium

(ix) Select the option that is a key cause of porosity in the weld.

a) High voltage | b) Contaminated surface
c) High current | d) Excess filler

(x) Select the option which can be achieved by CNC turning centers.

a) Complex contour turning | b) Surface hardening
c) Sand casting | d) Forging

(xi) Identify the process that involves compressive force using a die and hammer.

a) Drawing | b) Forging
c) Spinning | d) Rolling

(xii) Identify the operation that is performed after blanking.

a) Punching | b) Piercing
c) Bending | d) Drawing

(xiii) Identify the option that is not a benefit of additive manufacturing.

a) Reduced lead time | b) High material waste
c) Customization | d) Rapid prototyping

(xiv) Choose the option that determines the surface finish quality in 3D printing.

a) Build orientation | b) Color of filament
c) Machine size | d) Operator skill

(xv) Choose the additive manufacturing process that uses a laser to sinter powdered material.

a) SLA | b) FDM
c) SLS | d) LOM

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Write the difference between pressure die casting and gravity die casting. (3)
3. Write the principle of arc welding in brief. (3)
4. Write about various types of machining defects. (3)
5. Write the applications of additive manufacturing in medical field. (3)
6. Differentiate between turning and drilling operations. (3)

OR

Differentiate between hot working and cold working. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Examine the role of mold materials in influencing casting quality and surface finish. (5)
8. Illustrate the complete welding cycle and its industrial relevance. (5)

9. Apply principles of tool geometry to explain the role of rake and clearance angles. (5)
10. Explain the construction and working principle of extrusion process. (5)

11. Distinguish between FDM, SLA, SLS in additive manufacturing. (5)

12. Explain the FDM process step-by-step with suitable diagrams. (5)

OR

Illustrate the range of materials used in additive manufacturing. (5)