BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Tech.(ME)-2023
Course Name – Manufacturing Processes
Course Code - PCC-ME304
(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) Select the casting defect.
a) hot tear b) cold tear
c) both a and b d) none of the option

(ii) Choose the casting material.
a) Al b) Na
c) As d) Hg

(iii) The bottom part of the mold is identified as
a) cope b) drag
c) ball d) none of the option

(iv) Choose the parameter on which Friction at the tool-chip interface can be reduced.
a) Decreasing the rake angle b) Increasing the depth of cut
c) Decreasing the cutting speed d) Increasing the cutting speed

(v) Select the reason of material removal in ECM.
a) Corrosion b) Erosion
c) Fusion d) Ion displacement

(vi) Select the correct option for Green sand mold.
a) Polymeric mould has been cured b) Mould has been totally dried
c) Mould is green in colour d) Mould contains moisture

(vii) Choose the application of an expendable pattern.
a) Slush casting b) Squeeze casting
c) Centrifugal casting d) Investment casting

(viii) Choose the correct option for Shrinkage allowance on pattern.
a) The temperature of liquid metal drops from pouring to freezing temperature b) The metal changes from liquid to solid state at freezing temperature
c) The temperature of solid phase drops from freezing to room temperature d) The temperature of metal drops from pouring to room temperature

(ix) Select the tool life for Larger end cutting edge angle.

a) Increases
b) Decreases
c) Does not effect
d) None of these

(x) Select the application of Cutting fluids.

a) Cool the tool
b) Improve surface finish
c) Cool the workpiece
d) All of these

(xi) Identify the operation performed on a shaper.

a) Machining horizontal surface
b) Machining vertical surface
c) Machining angular surface
d) All of these

(xii) Select the requirement of the Slow speed of the spindle.

a) Thread cutting
b) Turning a work of larger diameter
c) Turning a hard or tough material
d) All of these

(xiii) Select the process of threading.

a) Smoothing and squaring the surface around a hole
b) Sizing and finishing a small diameter hole
c) Producing a hole by removing metal along the circumference of a hollow cutting tool
d) Cutting helical grooves on the external cylindrical surface

(xiv) Choose option that helps directional solidification in casting.

a) chaplets and riser
b) chills and padding
c) chaplets and padding
d) chills and riser

(xv) Select the electrode material of spot welding.

a) copper
b) brass
c) Al
d) iron

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Define the orthogonal and oblique cutting. (3)
3. List the Advantages and Disadvantages of AJM process. (3)
4. Explain the properties of molding sand. (3)
5. Write the advantages of hot working and cold working. (3)
6. Distinguish between TIG and MIG. (3)

OR

Compare between Welding and soldering. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. With sketch, explain the laser beam welding process .Mention advantages and limitation of laser welding also give application . (5)
8. Differentiate between discontinuous chip and continuous chip and elaborate the chip formation technique. (5)
9. In (ORS) the tool angel are Inclination angel (i)=0 Orthogonal rake angel=10 Principle cutting age angel=75. Evaluate (1) Back rake angel (2) side rake angel. (5)
10. Describe the process of centrifugal casting with neat sketch along with its advantages. (5)
11. Define the reasons and effects of Heat affected zone in welding. (5)
12. Discriminate between NC, CNC and DNC machines. (5)

OR

Illustrate various casting defects in brief. (5)

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