



BRAINWARE UNIVERSITY

Term End Examination 2022
 Programme – B.Tech.(ME)-2021
 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) The vector sum of cutting velocity and chip velocity is _____ shear velocity.
 - a) Equal to
 - b) Less than
 - c) More than
 - d) None of these
 - (ii) Which one among the following welding processes uses non-consumable electrode?
 - a) Gas metal arc welding
 - b) Submerged arc welding
 - c) Gas tungsten arc welding
 - d) Flux coated arc welding
 - (iii) In DC arc welding, if leads are arranged in work as Negative pole of the welding arc and electrode as Positive pole of the welding arc, the arrangement is known as
 - a) Fusion
 - b) Reverse polarity
 - c) Forward welding
 - d) Direct polarity
 - (iv) The maximum possible draft in cold rolling of sheet increases with the
 - a) Increase in coefficient of friction
 - b) Decrease in coefficient of friction
 - c) Decrease in roll radius
 - d) Decrease in roll velocity
 - (v) The operation in which oil is permeated into the pores of a powder metallurgy product is known as
 - a) Mixing
 - b) Sintering
 - c) Impregnation
 - d) Infiltration
 - (vi) The lip angle of a single point tool is usually
 - a) 20° to 40°
 - b) 40° to 60°
 - c) 60° to 80°
 - d) None of these
 - (vii) The point angle of a drill, for drilling stainless steel, is
 - a) 90°
 - b) 118°
 - c) 135°
 - d) 150°
 - (viii) Two streams of liquid metal which are not hot enough to fuse properly result into a casting defect known as

- a) Cold shut
c) Sand wash
- (ix) AJM nozzles are made of
a) low carbon steel
c) stainless steel
- (x) Misrun is a casting defect which occurs due to
a) Very high pouring temperature of the metal
c) Absorption of gases by the liquid metal
- (xi) Hardness of green sand mould increases with
a) Increase in moisture content beyond 6 percent
c) Decrease in permeability
- (xii) The primary purpose of a sprue in a casting mould is to
a) Feed the casting at a rate consistent with the rate of solidification
c) Feed molten metal from the pouring basin to the gate
- (xiii) IN ECM the material removal is due to
a) Corrosion
c) Fusion
- (xiv) If a gas metal arc process uses a low arc voltage and the arc is continuously interrupted as the molten electrode metal fills up the arc gap is known as
a) ARC
c) ARC length
- (xv) Hard and tough materials like cast iron should be turned at
a) Slow speed
c) Any speed
- b) Swell
d) Scab
- b) tungsten carbide
d) HSS
- b) Insufficient fluidity of the molten metal
d) Improper alignment of the mould flasks
- b) Increase in permeability
d) Increase in both moisture content and permeability
- b) Act as a reservoir for molten metal
d) Help feed the casting until all solidification takes place
- b) Erosion
d) Ion Displacement
- b) Short ARC
d) ARC blow
- b) High speed
d) Certain specific speed

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain the effect of polarity on penetration in DC arc welding. (3)
3. Explain the advantages of cold working. (3)
4. Explain the role of lubricant in extrusion. (3)
5. Write any two differences between soldering and Brazing. (3)
6. Write short note on forging die design. (3)

OR

Explain the basic principle of resistance welding? (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Discuss impact extrusion. (5)
8. Enumerate the principles of forging. (5)
9. Describe with neat sketches the TIG welding method and give its specific applications. (5)
10. Explain the principle of LBM with neat sketch and list out the advantages and disadvantages? (5)
11. List out the defects in casting process. Explain any five with neat sketch. (5)
12. What is meant by edge preparation? Show neat sketches of various edge preparations. (5)

OR

Derive the expression for roll separating force and power in rolling. (5)