

DIPLOMA OF VOCATION
Mechanical Manufacturing
Subject: Manufacturing Process Technology I and II
Subject Code: MC-401
Semester: Third
January 2021
Theory (External): 70 Marks
Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 2 marks.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 10 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number									



SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)

(10x2=20 Marks)

- A. The thin metallic wire used in wire-cut EDM is kept submerged in a tank of _____
- a) dielectric fluid
 - b) pure water
 - c) molten metal
 - d) kerosene
- B. Which of the following material is not generally machined by using ultrasonic machining?
- a) Copper
 - b) Glass
 - c) Silicon
 - d) Germanium
- C. Which of the following metal forming processes performs squeezing out of material through a hole?
- a) Forging
 - b) Rolling
 - c) Drawing
 - d) Extrusion
- D. Forging is carried out at a temperature which is
- a) Below recrystallization temperature
 - b) Above recrystallization temperature
 - c) Below or above recrystallization temperature
 - d) Above melting point
- E. Metal removal process is costly because
- a) More energy is required
 - b) Some of the material is wasted
 - c) Both more energy is required and some of the material is wasted
 - d) None of the mentioned



- F. In table top drilling machine, belt-pulley system operates _____
- a) Lever
 - b) Spindle
 - c) Both lever and spindle
 - d) None of the mentioned
- G. Alloys of which of the following metal is not used for hot chamber die casting?
- a) Tin
 - b) Lead
 - c) Zinc
 - d) Iron
- H. Which of the following carries the mold cavity where the metal is to be poured?
- a) Casting
 - b) Pattern
 - c) Sand
 - d) Core
- I. Which of the following is the hardest constituent of steel?
- a) Ledeburite
 - b) Austenite
 - c) Bainite
 - d) Martensite
- J. The slope of the stress-strain curve in the elastic deformation region is _____
- a) Elastic modulus
 - b) Plastic modulus
 - c) Poisson's ratio
 - d) None of the mentioned

SECTION –B (ESSAY TYPE QUESTIONS)
(5x10=50 Marks)

1. What is the use and significance of stress-strain diagram? Explain in detail with the help of some suitable examples.
2. What is pattern? What are different types of allowances provided in pattern? Discuss their advantages and limitations with suitable diagrams.
3. What is the purpose of drilling? What are different types of drill bits used in drilling? Explain the design of different types of drill bits with neat and clean diagrams.
4. What is the basic principal of operation of electric discharge machining (EDM)? What are the different parameters used to measure the performance of EDM? Explain with suitable data and diagrams.
5. Explain the process of extrusion and drawing with suitable diagrams. What are different parameters affecting the performance of these processes.
6. Explain the history of manufacturing processes with suitable data and diagrams. Also explain how development in manufacturing processes helped in industrial revolution?
7. What is Taylor tool life equation? Explain its significance with suitable example.
8. What are the different types of sheet metal working? What are manufacturing processes of sheet metal processing? Discuss in detail with suitable diagrams.

'END OF PAPER'