

B.Voc
Production-Tool and Die Manufacturing
Subject: Material Science and Heat treatment
Subject Code: MSE-701
Semester: Third
Session: - Sept. 2022
Theory (External): 35 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 01 marks.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 05 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

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SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)
(10x01=10 Marks)

- A. Define ductility.
- B. What is electrical resistivity?
- C. What is coordination number?
- D. What is the difference between fracture and failure of a material?
- E. What is the composition of austenitic stainless steel?
- F. Write any two use of white metal.
- G. What are nano materials?
- H. Write various types of composite materials?
- I. Define annealing.
- J. What is normalising?

SECTION –B (ESSAY TYPE QUESTIONS)
(5x05=25 Marks)

1. Classify various types of semi conducting materials.
2. Differentiate between HCP and FCC structure with the help of diagram.
3. Discuss the effect of various alloying elements on the properties of the materials.

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4. What are the practical applications of Glass wool and Thermocole?
5. Define heat treatment. Discuss the tempering process of heat treatment.
6. What is the composition of high-speed steel and spring steel? Discuss their uses also.
7. Classify various types of thermo plastics and thermosets along with their uses.
8. Discuss various types of surface hardening processes.

===END OF PAPER===