

- (d) What are the desirable properties of moulding sand ?
- (e) What do you understand by machine tool ?
- (f) Define Welding. What is weld ability ?
- (g) Explain the term threading.
- (h) What is CNC ?
- (i) Explain mould making.
- (j) What is the role of casting ? **1×10=10**

Roll No. ....

Total Pages : 04

**MAR-21-210011**

**B. Tech. EXAMINATION, March 2021**

Semester I & II (CBCS)

WORKSHOP TECHNOLOGY

ME-103

*Time : 2 Hours*

*Maximum Marks : 40*

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*The candidates shall limit their answers precisely within 20 pages only (A4 size sheets/assignment sheets), no extra sheet allowed. The candidates should write only on one side of the page and the back side of the page should remain blank. Only blue ball pen is admissible.*

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**Note :** Attempt *Four* questions in all, selecting *one* question from each Sections A, B, C and D. All questions carry equal marks.

**Section A**

1. What do you understand by the term Mechanical Properties of Material ? Why is it necessary to know these properties ? Draw a stress-strain diagram for the ductile as well as for brittle material. Also explain

the related terms like limit of proportionality, elastic limit, yield point, ultimate strength and breaking strength. **10**

2. What are the main characteristics of nonferrous alloy ? Due to which they are performed over ferrous alloy in spite of their high costs ? Discuss in brief about stainless and tool steel. **10**

### Section B

3. What are the main characteristics which a good moulding sand should possess ? How do these characteristics influence the performance of moulding sand during moulding and casting ? Explain the effect of shape and grain size on the performance of foundry sand. **10**
4. How are the wood working tools classified according to their use ? Give a list of marking and measuring tools and describe with neat sketches the use of any *four* of them. **10**

### Section C

5. Enumerate different types of machine tools used in the machine shop. Explain the principle of quick return mechanism of a shaper. Justify the need of this mechanism. **10**
6. Give the overview of term welding and its classification. Describe with the help of a neat sketch the principle of spot welding. **10**

### Section D

7. Explain the following with neat and clean sketch : **10**
- (a) Fitting tools
  - (b) Fitting operation
  - (c) Sawing
  - (d) Filing.
8. What are the characteristics of NC machine tool ? How does the structure of NC machine tool differ from conventional machine tools ? **10**
9. (a) What is Casting ? Enumerate the casting defects.  
(b) What is the difference between cast iron and mild steel ?  
(c) What is Core ? What are the applications of core ?