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**B TECH**  
**(SEM-V) THEORY EXAMINATION 2021-22**  
**MANUFACTURING SCIENCE & TECHNOLOGY-II**

Time: 3 Hours

Total Marks: 70

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

1. Attempt all questions in brief.

2 x 7 = 14

a.	What do you mean by the term orthogonal cutting?
b.	What are the functions of dynamometers?
c.	Explain the term dressing and truing.
d.	What is the difference between drilling and boring?
e.	Define the welding process.
f.	Write the applications of WJM.
g.	What is the difference between Limits, Fits and Tolerances?

**SECTION B**

2. Attempt any three of the following:

7 x 3 = 21

a.	How do you define tool life? Explain the parameters that control the tool life of a single point cutting tool.
b.	Write a brief notes on the following: i. Material removal mechanism of Abrasive jet machining ii. Advantages of EDM over USM
c.	Explain the centerless grinding processes? What are advantage and disadvantages?
d.	Define milling machine. What is working principle of milling machine? What are the common operations performed on milling machine.
e.	Define Gas welding. Explain different types of gas flames in gas welding process.

**SECTION C**

3. Attempt any one part of the following:

7 x 1 = 7

(a)	Classify different types of chips produced during metal machining with the help of neat sketches.
(b)	What are the advantages and disadvantages of ceramics as cutting tool materials?

4. Attempt any one part of the following:

7 x 1 = 7

(a)	Compare the advantages and disadvantages of 3-jaw and 4-jaw chucks.
(b)	Explain different types of drilling machines that are used in machine shop and their features.

5. Attempt any one part of the following:

7 x 1 = 7

(a)	Sketch and explain the three methods of external cylindrical centerless grinding.
(b)	Differentiate Honing, lapping and polishing operation and explain its applications.

6. Attempt any one part of the following:

7 x 1 = 7

(a)	Explain the brazing and soldering operations. How they differ from welding? Discuss their applications.
(b)	What is the electric arc welding? Explain different types of electric arc welding.

7. Attempt any one part of the following:

7 x 1 = 7

(a)	Explain the factors that should be considered during the selection of an appropriate unconventional machining process for a given job
(b)	What is the principle of ECM? What is the function of electrolyte in ECM? List the advantages of ECM.