



**BTECH**  
**(SEM I) THEORY EXAMINATION 2021-22**  
**BASIC MANUFACTURING PROCESS**

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**Time: 3 Hours****Total Marks: 100****Note:** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 10 = 20**

a.	Differentiate between normalizing and quenching.
b.	List different types of production systems.
c.	Briefly discuss the soldering process.
d.	Discuss the important characteristics of aluminum alloys.
e.	Define resilience and toughness.
f.	Discuss the classification of engineering materials.
g.	Differentiate between ductile and brittle materials.
h.	Explain the principle of resistance welding.
i.	Define productivity.
j.	Describe the drilling and boring operations.

**SECTION B****2. Attempt any three of the following: 10x3=30**

a.	Classify the flames produced in gas welding and discuss their applications.
b.	Discuss heat treatment of steels and its significance.
c.	Explain the stress-strain diagram for ductile materials with a neat diagram, detailing each point on the curve.
d.	Discuss different types of plant layouts used in manufacturing. Also list the advantages and disadvantages of each type.
e.	Write notes on the following: i. Hot working and cold working ii. Rolling and Forging processes

**SECTION C****3. Attempt any one part of the following: 10x1=10**

a.	Explain the construction and working of a shaper machine with a neat sketch.
b.	Explain the construction and working of a center lathe machine with a neat sketch.

**4. Attempt any one part of the following: 10x1=10**

a.	Illustrate the process of extrusion with a schematic. Also, discuss the types of extrusion processes.
b.	Explain the various casting defects in detail.

**5. Attempt any one part of the following: 10x1=10**

a.	Discuss the classification of steels on the basis of the carbon percentage they possess and also discuss the properties and applications of each of them.
b.	Briefly discuss the following terms: i. Stiffness ii. Weldability iii. Malleability iv. Plasticity v. Hardness

Roll No: 

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**6. Attempt any *one* part of the following: **10x1=10****

a.	Draw the schematic of a milling machine and explain the operations performed on it.
b.	Discuss the classification of welding processes. Explain the working of electric arc welding with a schematic diagram.

**7. Attempt any *one* part of the following: **10x1=10****

a.	Explain the sand-casting process in detail while explaining the mould making and gating system using suitable diagrams.
b.	Explain the die and punch assembly with a suitable diagram. Also explain the progressive die in detail.