PAPER ID-411310

Subject Code: KME403

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM IV) THEORY EXAMINATION 2023-24
MANUFACTURING PROCESSES

TIME: 3 HRS **M.MARKS: 100**

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

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

a.	What is shake allowance?	02
b.	What is pin holes defect in casting?	02
c.	What is nibbling operation in sheet metal forming?	02
d.	What is Tool life?	02
e.	What is Machinability?	02
f.	What is G-ratio?	02
g.	What is flux?	02
h.	What is Reversed Polarity arc welding?	02
i.	What is dielectric fluid used in EDM process?	02
j.	What is electrolyte used in ECM process?	02

SECTION B

2. Attempt any *three* of the following: **3 x 10 = 30**

a.	What is pattern? Explain different properties and selection criteria of pattern material.	10
b.	Explain the following: (i) Carriage in lathe machine (ii) Multi spindle drilling machine (iii) Universal milling machine	10
c.	What is superfinishing process? Explain the working principle of honing and lapping process with their applications.	10
d.	Explain the concept of flame formation and its types in oxy-acetylene welding process.	10
e.	Classify the non-conventional manufacturing processes. What are the needs of unconventional manufacturing processes over conventional manufacturing processes? Also explain the limitations of unconventional manufacturing processes.	10

SECTION C

3. Attempt any *one* part of the following: **1 x 10 = 10**

a.	Differentiate between the followings: (i) Punching and blanking operation (ii) Hot working and cold working	10
b.	Explain the followings: (i) Types of rolling process (ii) Types of extrusion process	10

4. Attempt any *one* part of the following: **1 x 10 = 10**

a.	During orthogonal cutting process, following observations were made; Chip length= 96 mm, Uncut Chip length= 240 mm, Tool rake angle= 200, Depth of cut= 0.6 mm, Cutting force= 2400 N, Thrust force= 240 N. Determine: (a) Shear plane angle (b) Chip thickness (c) Friction angle (d) Resultant cutting force	10

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b.	Explain the single point tool geometry with orthogonal and isometric view of tool.	10

5. Attempt any *one* part of the following: 1 x 10 = 10

a.	Explain the notations used to specify the grinding wheel in given examples: (i) 55A20W12V75 (ii) 55C80H6M75	10
b.	Classify the grinding operation. Explain the working principle of cylindrical grinding process.	10

6. Attempt any *one* part of the following: 1 x 10 = 10

a.	Explain the following: (i) Submerged arc welding (ii) TIG welding	10
b.	What is resistance welding? Explain the following resistance welding processes: (i) Spot welding (ii) Seam welding	10

7. Attempt any *one* part of the following: 1 x 10 = 10

a.	Describe the working principle of electro chemical machining (ECM). Also explain the advantage and disadvantage of ECM process over other processes.	10
b.	What is the working principle of abrasive jet machining (AJM) process? Also explain the advantage and disadvantage of ECM process over other processes.	10