

**Maharashtra Institute of Technology, Aurangabad**  
(An Autonomous Institute)

END SEMESTER EXAMINATION

**Second Year B. Tech (ME) -Feb/Mar-2023**

Course Code: MED204

Course Name: Manufacturing Processes

Duration: 2 Hrs

Max. Marks: 50

Date: 10 FEB 2023

Instructions:

- i) All questions are compulsory
- ii) Assume suitable data wherever necessary and clearly state it
- iii) Figures to right indicate full marks

Q.1 Answer any five (Marks:10)					
		Marks	CO	BL	PI
a)	Write two properties of moulding sand.	2	1	2	1.3.1
b)	Write four types of drills.	2	2	2	1.4.1
c)	Define the role of transducer in ultrasonic machining.	2	1	1	1.4.1
d)	Write four rolling defects observed in metal forming.	2	1	1	1.4.1
e)	Write the expression to calculate the total heat supplied in resistance welding.	2	2	2	1.4.1
f)	Write four bond materials used in grinding wheel.	2	3	2	1.4.1
g)	Why capstan and turret lathe preferred over centre lathe?	2	3	1	1.4.1
h)	Write two differences between up milling and down milling.	2	3	2	1.4.1
Q.2	Explain in details with neat sketch about electro discharge machining.	8	5	3	1.4.1
Q.3	Write the different welding processes. Explain in details about tungsten inert welding process with neat sketch diagram.	8	4	4	1.4.1
Q.4	A hole of 45 mm diameter and 60 mm deep is to be drilled in mild steel component. The cutting speed can be taken as 50 m/min and the feed rate as 0.3 mm/rev. Calculate the machining time and the material removal rate. Consider lip angle is 59°.	8	6	5	1.4.1
Q.5	Derive the expression $\tan\phi = \frac{r\cos\alpha}{1-r\sin\alpha}$ for the shear angle in metal cutting.	8	5	4	3.3.1
OR					
Q.5	Derive the expression $\cos\alpha = 1 - \frac{\Delta h}{D}$ in which $\alpha$ is the bite angle in the rolling.	8	5	4	3.3.1
Q.6	Explain in details about the cylindrical grinding with neat sketch diagram.	8	4	3	1.4.1
OR					
Q.6	Write ISO standards coding for NC machine. Write four advantages of CNC machine.	8	4	3	3.1.4