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GIET UNIVERSITY, GUNUPUR – 765022

Ph.D. (Second Semester) Examinations, November – 2023

WPPEME2033 - Modern Machining Processes (Mechanical)

Time: 3 hrs

Maximum: 70 Marks

The figures in the right hand margin indicate marks.

Answer ANY FIVE Questions

(14 x 5 = 70 Marks)

	Marks
1.a. Explain the construction and parts of abrasive water jet machining with help of schematic diagram in detail.	7
b. Write process parameters, process variables and MR R of abrasive jet machining	7
2.a. Explain the working principle of abrasive water jet machining with help of schematic diagram	7
b. Differences between abrasive jet machining and abrasive water jet machining	7
3.a. Mention the salient features of Ultrasonic Machining.	7
b. Write the different types of abrasives used Ultrasonic Machining	7
4.a. Explain working of Ultrasonic Machining with help of schematic diagram	7
b. Write the economic considerations of Ultrasonic Machining	7
5.a. In a certain electro chemical dissolution process of iron, a MRR of $4 \text{ cm}^3 / \text{min}$ was desired. Determine the amount of account of current required for the process. Assume Atomic weight of iron =56 gm; Valancy at which dissolution occur =3; Density of iron =8.6 gm/ cm^3	7
b. Describe the working Electrochemical Honing process with a neat sketch.	7
6.a. Draw the schematic diagram and explain the principle of operation of Electrolytic grinding process.	7
b. In a certain electro chemical dissolution process of iron, a MRR of $2 \text{ cm}^3 / \text{min}$ was desired. Determine the amount of account of current required for the process. Assume Atomic weight of iron =56gm; Valancy at which dissolution occur =2; Density of iron =7.8 gm/ cm^3	7
7 a. With the aid of simple sketch, explain the working principle of Electric Discharge Grinding process.	7
b. List the advantages, limitations and applications of Electric Discharge Grinding.	7
8 a. List the safety precautions, advantages, limitations and applications of PAM Process.	7
b. Explain the working principle involved in Plasma Arc Machining.	7

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