Code No: **R41034** **R10** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February - 2019
UNCONVENTIONAL MACHINING PROCESSES
(Mechanical Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
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1	a)	Discuss the various factors to be considered for selection and development of an Unconventional machining process.	[8]
	b)	Describe the technical and economical reasons why Unconventional machining processes are necessary.	[7]
2	a)	Explain the influence of grain size of abrasives in ultrasonic machining on the surface finish characteristics of the machined surface.	[8]
	b)	What are the constituents of slurry used in ultrasonic machining system? Also list the principal function of slurry, horn, and oscillator.	[7]
3	a)	With the help of neat sketch explain the mechanism of material removal in abrasive jet machining process.	[8]
	b)	Explain the advantages of water jet cutting over traditional cutting process with suitable examples.	[7]
4	a)	Explain the following in ECM (i) Ohmic over potential (ii) Activation over potential.	[8]
	b)	What are the advantages and industrial applications of Electro Chemical Honing?	[7]
5	a)	Why EDM is called un-conventional machining processes? How it differs from conventional machining process-Discuss.	[8]
	b)	Sketch and explain the rotary impulse generator type of power supply to ED Macining. Explain its functioning with special reference to MRR.	[7]
6	a)	Describe with the help of a sketch, the constructional features of an “electron gun” used for generating an electron beam in electron beam machining.	[8]
	b)	Compose the surface damage and other defects produced on the parts by EBM and LBM?	[7]
7	a)	What are the differences between the luminous mode and turbulent mode of torches used in PAM?	[8]
	b)	Describe the mechanism of material removal in plasma Arc mechanism.	[7]
8		What is the principle of magnetic abrasive finishing process and describe the method of finish flat surfaces by magnetic abrasive process with a neat sketch? List out its applications.	[15]