Code No: R5420302 1

B. Tech.IV Year II Semester(R05) Regular & Supplementary Examinations, April/May 2010
UN-CONVENTIONAL MACHINING PROCESSES
(Mechanical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE questions
All questions carry equal marks
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1. (a) Discuss the working principle of E.D.M with neat sketch.
   (b) How metal removal takes place in chemical machining? Explain.
2. (a) Describe the processes of Laser Beam machining with neat sketch.
   (b) Explain water jet machining processes.
3. (a) Write about process selection, materials and applications in modern machining processes.
   (b) What are the drawbacks are in conventional machining processes. How to rectify it?
4. (a) Discuss elaborately the wire E.D.M processes.
   (b) What is un-conventional machining processes? Explain the classification of U.C.M by giving one machining process under each category.
5. (a) Discribe the process of abrasive jet machining.
   (b) Explain the merits and demerits of electron beam machinery processes.
6. (a) Classify the different types of laser systems used for machining based on its state, energy and cost.
   (b) Explain the processes of ultrasonic machining processes.
7. Explain the processes variables of (AJM) abresive jet machining processes and their influence on out put parameters such as surface finish dimensional accuracy, metal removal rate and surface defects.
8. Write a short note on the following :
   (a) Advantages of Laser Beam Machining processes
   (b) Advantages and Disadvantages of wire EDM.
   (c) Applications of chemical machining processes.

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Code No: R5420302 **2**

B. Tech.IV Year II Semester(R05) Regular & Supplementary Examinations, April/May 2010
UN-CONVENTIONAL MACHINING PROCESSES
(Mechanical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE questions
All questions carry equal marks
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1. (a) Describe the processes of Electro-Discharge Machining. (EDM)
   (b) Explain processes of water Jet machining.
2. (a) With suitable sketches explain the processes of ultrasonic machining and its applications.
   (b) Explain the limitations of E.D.M processes.
3. (a) Explain the processes of Electron Beam machining (EBM) based on its operation principle, applications and limitations.
   (b) Explain the limitations and applications of Water-Jet-Machining processes (WJM).
4. (a) With suitable sketches explain the processes of Electro chemical machining (ECM)
   (b) Distinguish between conventional and un-conventional machining methods.
5. (a) Discuss the processes of Laser Beam machining (LBM) with a neat diagram.
   (b) Discuss elaborately, the wire E.D.M processes.
6. (a) Discuss the principle of Abrasive Jet machining (AJM) and also state its applications.
   (b) Explain merits and demerits of electron beam machining (EBM).
7. Explain the process variables of Abrasive Jet Machining (AJM) processes and their influence on out put parameters such as surface finish, dimensional accuracy, metal removal rate and surface defects.
8. Write a short note on the following:
   (a) Discuss the applications of Laser Beam Machining processes.
   (b) Classify the different types of laser systems used for machining based on its state, energy and cost.
   (c) Discuss the plasma are machining processes (PAM) and explain different processes parameters of metal removel, accuracy and surface finish.

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Code No: R5420302 **3**

B. Tech.IV Year II Semester(R05) Regular & Supplementary Examinations, April/May 2010
UN-CONVENTIONAL MACHINING PROCESSES
(Mechanical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE questions
All questions carry equal marks
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1. (a) Discuss the working principle of ultrasonic machining (U.S.M)
   (b) Describe the process variables, metal removal rate applications and limitations of abrasive jet machining (AJM).
2. (a) Explain the working principle and process of Electro-Chemical Machining (ECM).
   (b) Discuss the applications and limitations of (E.D.M) Electric Discharge Machining.
3. (a) Describe the process of Electron Beam Machining (EBM) with a neat diagram.
   (b) Discuss the applications of laser beam machining.
4. (a) Explain the processes of Electric discharge grinding and electric discharge wire cutting processes.
   (b) Discuss the process variables, selection of tool, electrode and dielectric fluids.
5. Explain the different types of laser systems used for machining based on its state energy and cost.
6. (a) Explain the working principles of electro chemical honing and deburring processes.
   (b) What are the metal removal rate, surface finish and accuracy and economic aspects of E.C.M.
7. (a) Distinguish between conventional & un conventional machining processes.
   (b) Write various classifications of modern machining processes.
8. Write a short notes on the following.
   (a) Magnetic abrasive finishing
   (b) Electro stream drilling
   (c) Shaped tube electrolytic machining.

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Code No: R5420302 4

B. Tech.IV Year II Semester(R05) Regular & Supplementary Examinations, April/May 2010
UN-CONVENTIONAL MACHINING PROCESSES
(Mechanical Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE questions
All questions carry equal marks

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1. (a) Distinguish between conventional and un conventional machining methods.
   (b) Explain the process of E.C.M give its applications.
2. (a) Discuss the working principle of EDM with neat sketch.
   (b) How metal removal takes place in chemical machining.
3. Write the principle and operation of Electron Beam Machining (EBM) with process capabilities, advantages and applications.
4. (a) Write various classifications of Modern Machining Processes.
   (b) What are the considerations in process selection, materials and its applications?
5. Describe the process of Laser Beam Machining with neat sketch and give the process capabilities advantages and applications.
6. Classify the different types of Laser Systems used for Machining based on its state, energy and cost.
7. (a) Discuss the principle of abrasive jet machining and also its applications.
   (b) Explain merits and demerits of abrasive jet machining process.
8. Write a short note on the following:
   (a) Water Jet Machining
   (b) Advantages of Laser Beam Machining Process
   (c) Different applications of EDM.

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