SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL NO: | | | | | | | | | | | | | Total number of pages: [2]

Total number of questions: 06

B.Tech. || ME || 6th Sem

Non Traditional Machining Processes

Subject Code: DE/ME-2.0

Paper ID: .....

Time allowed: 3 Hrs **Max Marks:60**

Important Instructions:

- **Section A is compulsory**
- **Attempt all questions from section B**

PART A (2×10)

Q. 1. Answer in brief:

(a) What are the characteristics of flexible manufacturing systems?

(b) What are the limitations of ECM?

(c) What are the essential characteristics of dielectric fluid in EDM?

(d) What is the function of horn in USM?

(e) List various lasing mediums used for LBM.

(f) List the various etchants being used in Chemical Machining(CHM)

(g) What is the function of shielding gas in PAM?

(h) What are the limitations of water jet machining?

(i) How the material is removed in EBM?

(j) What is plasma?

PART B (5×8marks)

Q2 How non-traditional manufacturing processes are different from traditional processes. Discuss

OR

Differentiate between traditional and non-traditional manufacturing processes in detail. CO-1

Q3 Draw schematic diagram of Ultrasonic machining (USM). Describe the function of each element.

OR CO-2

Explain with neat sketch the material removal in Abrasive flow machining. Give its applications

Q4 Explain different types of maskants used in Chemical machining. Give applications of chemical machining.

OR

What do you mean by current density (I_d) and specific material removal rate (Sp.MRR) in electro-chemical machining (ECM). Derive the following expression for ECM process form Faradays laws

*Feed rate = current density (I_d) * specific material removal rate (Sp.MRR)* CO-3

Q5 Explain with neat sketch the mechanism of material removal in EDM? What are the characteristics of the EDM? Give its limitations.

OR

Differentiate between Transferred arc and Non-transferred arc method in PAM CO-4

Q6. Explain with suitable diagram the generation and control of electron beam in EBM. Give the characteristics of the EBM process.

OR

Explain the construction and working of solid laser gun. Give applications and disadvantages of laser beam machining. CO-5