B.TECH. SEM -VI PRODUCTION 2014 COURSE (CBCS) :
WINTER - 2017
SUBJECT : ELECTIVE – I : NON TRADITIONAL MANUFACTURING

Day : **Friday** Time : **10.00 AM TO 01.00 PM**
Date : **24/11/2017** **W-2017-2239** Max. Marks : 60

N. B. :

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat and labelled diagram **WHEREVER** necessary.
4) Use of non-programmable calculator is **ALLOWED**.

Q. 1 What do you understand by non-conventional machining methods? Also write the advantages and disadvantages. **(10)**

OR

Define non-conventional machining process and explain the classification of NTM process.

Q. 2 Explain in details Ultrasonic Machining (USM) process and state its characteristics. **(10)**

OR

Compare:

a) USM v/s AJM

b) USM v/s WJM

Q. 3 Explain the principle, construction, working, parameter application advantages and disadvantages of Electro Chemical Machining Process (ECM). **(10)**

OR

Calculate the MRR and the electrode feed rate in the ECM of an iron surface that is 25× 25 mm in cross-section using NaCl in water as electrolyte. The gap between the tool and the workpiece is 0.25 mm. The supply voltage is 12 V DC. The specific Resistance of the electrolyte is 3 Ω m.

Q. 4 Write short notes on the following: **(10)**

a) Chemical Blanking

b) Chemical Milling

OR

Explain in details chemical machining process.

P. T. O.

Q. 5 Explain in details with neat sketch electro discharge machining (EDM) process. **(10)**

OR

a) In a RC type generator the maximum charging voltage is 80 V and the charging capacitor is 100 μ F. Determine spark energy.

b) Determine on time or discharge time if
Vo = 100V and Vd = 15 V. Spark energy = 0.5J Generator is expected for maximum power during charging machine resistance = 0.5 Ω.

Q. 6 Draw a neat sketch of Laser Beam Machining (LBM) and state their applications and its characteristics. **(10)**

OR

Write a short note on Plasma Arc Machining (PAM) and compare with Laser Beam Machining.

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