Printed Page:-04 **Subject Code:- AME0401**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: IV - THEORY EXAMINATION (2023- 2024)

Subject: Manufacturing Technology-II

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* **three Sections -A, B, & C.** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION A **20**

1. Attempt all parts:-

1-a. In which machining process, removed metal is negligible? (CO1) 1

(a) surface finishing

(b) metal removal

(c) both surface finishing and metal removal

(d) none of the mentioned

1-b. Which of the following is not a type of surface finishing process? (CO1) 1

(a) sawing

(b) honing

(c) buffing

(d) polishing

1-c. What is the necessary condition for turning? (CO2) 1

(a) material of work piece should be harder than the cutting tool

(b) cutting tool should be harder than the material of work piece

(c) hardness of the cutting tool and material of of piece should be same

(d) none of the mentioned

1-d. Traversing of tool parallel to the axis of job is termed as_____ (CO2) 1

(a) cross feed

(b) longitudinal feed

(c) both cross feed and traversing feed

(d) none of the mentioned

1-e. Dwell is defined by: (CO3) 1

(a) G04

(b) G03

(c) G02

(d) G01

1-f. M30 stands for: (CO3) 1

(a) End of program

(b) End of block

(c) End of tape and tape rewind

(d) Coolant on/ off

1-g. Material removal rate for USM decreases with (CO4) 1

(a) Increase in amplitude

(b) Decrease in grain size of abrasives

(c) Increase in frequency

(d) Increase in amplitude

1-h. Non-Traditional machining can also be called as _____ (CO4) 1

(a) Contact Machining

(b) Non-contact machining

(c) Partial contact machining

(d) Half contact machining

1-i. Apparent current efficiency is due to which of the following factors? (CO5) 1

(a) Choice of wrong valence

(b) Passivation of anodic surface

(c) Gas evolution at anode

(d) All of the mentioned

1-j. At constant feed rates what happens to gap thickness? (CO5) 1

(a) Increases

(b) Decreases

(c) Becomes constant

(d) None of the mentioned

2. Attempt all parts:-

2.a.	What the factors considering selection of cutting fluids? (CO1)	2
2.b.	What is an apron? (CO2)	2
2.c.	Define hardness of grinding wheel? (CO3)	2
2.d.	What is the purpose of transducer used in USM? (CO4)	2
2.e.	List the advantages and disadvantages of wire – cut EDM (CO5)	2

SECTION B **30**

3. Answer any <u>five</u> of the following:-

3-a.	What are the various type of cutting tool material used in metal cutting and briefly explain their properties? (CO1)	6
3-b.	Describe the forms of wear on the cutting tool with neat sketches? (CO1)	6
3-c.	Explain the method of thread cutting using compound slide in a lathe? (CO2)	6
3-d.	List some work holding devices in lathe & briefly explain any five work holding devices with neat sketch? (CO2)	6
3.e.	Write briefly about broaching machines and its operations with neat sketch? (CO3)	6
3.f.	Make a comparison between traditional and unconventional machining processes in terms of cost, application, scope, Machining time, advantages and limitations. (CO4)	6
3.g.	Explain the process of Electrical discharge wire cutting processes and list any two of its advantages, limitations and applications (CO5)	6

SECTION C **50**

4. Answer any <u>one</u> of the following:-

4-a.	Explain parameters control the tool life in a single point cutting tool? (CO1)	10
4-b.	List the important characteristics of cutting tool materials? (CO1)	10

5. Answer any <u>one</u> of the following:-

5-a.	List out the different operation carried out on drilling machine& explain any two process? (CO2)	10
5-b.	Explain the principle of operation of gear hobbing process? (CO2)	10

6. Answer any <u>one</u> of the following:-

6-a.	Explain the advantages and limitations of NC Machines? (CO3)	10
6-b.	Describe the main constructional features of CNC machines, which distinguish them from conventional machine tools? (CO3)	10

7. Answer any <u>one</u> of the following:-

7-a.	State the working principle and construction detail of Abrasive Jet Machining. (CO4)	10
7-b.	Create a table containing Working Principles, Process parameters, Expression for MRR and aaplications of the Abrasive Jet Machining (AJM) Water Jet Machining (WJM), Abrasive Water Jet Machining (AWJM), Ultrasonic Machining (USM) processes. (C04)	10

8. Answer any <u>one</u> of the following:-

8-a.	Explain the process of LBM and PAM with neat sketches. (CO5)	10
8-b.	Explain the classification and characteristics of various spark erosion generators? (CO5)	10