Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2162507 **Date: 05/05/2017**

Subject Name: Allied Manufacturing Technique

Time: 10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

MARKS

Q.1 **Short Questions: [each carries equal marks]** **14**

1 What is the reason for using unconventional or advanced machining processes?
(A) Complex surfaces (B) High accuracy and surface finish
(C) High strength alloys (D) All of the above

2 In Electrical Discharge Machining (EDM) process the metal removal is carried out by
(A) Electrolysis (B) melting and vaporization
(C) Due to impact of grains(D) none of the above

3 Which of the following process has highest rate of metal removal?
(A) Electric Discharge Machining (EDM)
(B) Electro-Chemical Machining (ECM)
(C) Ultrasonic Machining (USM)
(D) Laser Beam Machining (LBM)

4 In which of the following type of lathe, lead screw is provided for thread cutting?
(A) Centre (B) Turret(C) Capstan(D) All of the above

5 Multiple turning head is mainly used on
(A) Centre lathe(B) Turret lathe(C) Capstan lathe(D) All of the above

6 In cutting Right hand threads, the spindle and lead screw rotates in the
(A) Same direction
(B) Opposite direction
(C) Same or Opposite direction
(D) Spindle rotates but lead screw does not rotate

7 The following is also known as Tool rest
(A) Saddle(B) Cross slide (C) Compound rest(D) Tool post

8 The time required to create a new thread in an existing process is
(A) greater than the time required to create a new process
(B) less than the time required to create a new process
(C) equal to the time required to create a new process
(D) none of the mentioned

9 A thread rolling process can be
(A) single threaded (B) multithreaded
(C) both (a) and (b)(D) none of the mentioned

10 The following acts as driving shaft in Lathe.
(A) Countershaft(B) Spindle shaft(C) Lead screw(D) None of the above

11 A desired speed of _____ can be obtained by selecting the suitable change gears having proper number of teeth.
(A) Lead screw(B) Countershaft(C) Spindle(D) Feed gear box

12 Principle of laser is
(A) spontaneous absorption (B) simulated emission
(C) induced emission (D) both b and c

13 Which of the following processes is generally applied for dentistry work like to drill fine holes of particular shape in teeth?
(A) Electrical Discharge Machining (EDM)
(B) Electron Beam Machining (EBM)
(C) Laser Beam Machining (LBM)
(D) Ultrasonic Machining (USM)

14 Define:Gear Hobbing

Q.2	**(a)**	What do you mean by tool layout? Explain in brief.	**03**
	(b)	What is the difference between Turret Lathe and an Engine Lathe?	**04**
	(c)	Describe the steps for preparing a tool layout on turret lathe.	**07**
		OR	
	(c)	Describe the essential parts of turret lathe. How does it differs from Engine lathe?	**07**
Q.3	**(a)**	What are the methods used for rolling thread?	**03**
	(b)	How screw thread micrometer differs from ordinary micrometer?	**04**
	(c)	Give a brief classification of automatic lathe machine.	**07**
		OR	
Q.3	**(a)**	Explain Three wire methods for thread inspection.	**03**
	(b)	Describe advantage of producing threads by rolling and also discuss the limitations.	**04**
	(c)	When will you adopt a thread milling for manufacturing of thread? Explain thread milling with neat sketch.	**07**
Q.4	**(a)**	Explain "Parkinson Gear Tester" with neat sketch.	**03**
	(b)	What is the difference between L.H. thread and R.H. thread?	**04**
	(c)	Explain the "Hot Rolling" method of gear manufacturing.	**07**
		OR	
Q.4	**(a)**	Explain following with reference to EDM. (i) TWR (ii) spark gap (iii) DielectricFluid.	**03**
	(b)	Discuss the various gears finishing process.	**04**
	(c)	What are different form cutter methods for gear manufacturing? Explain any One in detail.	**07**
Q.5	**(a)**	Compare ECM with ECG.	**03**
	(b)	Which Unconventional machining process is best suited for machining of brittle material? Explain its principle, area of application.	**04**
	(c)	Explain Plasma Arc Machining (PAM) with neat sketch. List characteristics of PAM processes.	**07**

OR

Q.5	**(a)**	Compare AJM with WJM.	**03**
	(b)	Explain the necessity of unconventional manufacturing processes.	**04**
	(c)	Explain laser beam machining with neat sketch. Give critical parameters of laser beam machining.	**07**

****