



**NATIONAL INSTITUTE OF TECHNICAL TEACHERS
TRAINING AND RESEARCH**
(DEEMED TO BE UNIVERSITY UNDER DISTINCT CATEGORY)
CHANDIGARH

Ph.D. Entrance Examination - December 2025 Session

Subject / Branch / Department :	Mechanical Engineering
Roll No. :	
Candidate Name :	
Date of Examination :	29-August-2025

Maximum Marks: 25 (There is no negative marking)

- Notes:** (a) Only one option to be tick-marked out of the four options given as answer
(b) The Candidate must put his/her signature with date at the bottom of each page
(c) For any rough work, please use ONLY back-sides of pages which are left blank

Q1.	The dendrite structure is observed while solidification for:
(a)	Low cooling rate
(b)	Very high cooling rate
(c)	High cooling rate
(d)	Both a and b
Q2.	What is the range of carbon content in steel?
(a)	0-0.8%
(b)	0-2%
(c)	0-4.4%
(d)	0-6.67%
Q3.	T.T.T diagram indicates time and temperatures transformation of:
(a)	austenite
(b)	ferrite
(c)	pearlite
(d)	cementite
Q4.	Resilience of material is important when it is subjected to:
(a)	Combined loading
(b)	Fatigue
(c)	Thermal Stresses
(d)	Shock loading

Q11. Part-programming mistakes can be avoided in:

- (a) NC
- (b) CNC
- (c) Both CNC and NC
- (d) None of the above

Q12. Which of the following is the full form of CIPMS?

- (a) Computer-integrated production management system
- (b) Computer-induced planning for the management system
- (c) Computer-integrated process for machining science
- (d) None of the above

Q13. Numerical control _____

- (a) applies only to milling machines
- (b) is a method for controlling through a set of instructions
- (c) is a method for producing the exact number of parts per hour
- (d) none of the mentioned

Q14. Which of the following is not the advantage of CNC machines?

- (a) Improved quality
- (b) Reduced scrap rate
- (c) Higher flexibility
- (d) Improved strength of the components

Q15. The function of interpolator in a CNC machine controller is to:

- (a) Control spindle speed
- (b) Control tool rapid approach speed
- (c) Generate a reference signal prescribing the shape of the part to be machined
- (d) Perform miscellaneous (M) functions (tool change, coolant control etc)

Q16. CAD/CAM is the relationship between:

- (a) Science and engineering
- (b) Design and manufacturing
- (c) Design and marketing
- (d) Manufacturing and marketing

Q23. In ECM, material removal is due to:

- | | |
|-----|------------------|
| (a) | Corrosion |
| (b) | Erosion |
| (c) | Ion displacement |
| (d) | Fusion |

Q24. Which of the following materials cannot be machined by EDM?

- | | |
|-----|-------|
| (a) | Ti |
| (b) | CI |
| (c) | Steel |
| (d) | Glass |

Q25. In electrochemical machining, the gap between the tool and work is kept usually as

- | | |
|-----|--------|
| (a) | 0.1mm |
| (b) | 0.75mm |
| (c) | 0.4mm |
| (d) | 0.25mm |





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ANSWER KEY - Ph.D. Entrance Examination - December 2025 Session

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Answers:

1.	c	11	c	21	b
2.	b	12	a	22	a
3.	a	13	b	23	c
4.	d	14	d	24	d
5.	c	15	c	25	b
6.	b	16	b		
7.	a	17	d		
8.	b	18	a		
9.	c	19	c		
10.	d	20	b		

P. S. Mehta
29/8/25

R. S. Sanyal