

Application Card No./ Application I.D

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Question Booklet: SrTechn\_2025\_Level\_1

Signature of Candidate

## NATIONAL INSTITUTE OF TECHNOLOGY, GOA

### Recruitment for the Post of Senior Technician

Total Time Allowed: 1 hour 30 minutes

Total Marks: 75

#### IMPORTANT INSTRUCTIONS

1. The candidate will be supplied with the Question Booklet and OMR Answer Sheet 05 minutes prior to the commencement of the Examination.
2. The Level I Written Examination has the following two parts:
  - Level I, Part A (General) consists of 25 questions for a total of 25 marks, with 1 mark awarded for each correct answer and a negative marking of 0.25 for every wrong answer.
  - Level I, Part B (Domain Specific) consist of 50 questions for a total of 50 marks, with 1 mark awarded for each correct answer and a negative marking of 0.25 for every wrong answer.
3. The candidates have to mark their answer by completely darkening the appropriate circle on the OMR Answer sheet. Incomplete or improper marking may lead to non-evaluation.
4. The candidate may use strictly Black/Blue Ball Pen to darken the circle completely.
5. Question Paper, OMR sheet and Rough sheet will have to be returned to the Invigilator after the end of the exam.
6. No candidates will be allowed to leave the Exam Hall before the scheduled completion time.
7. Before attempting to answer, candidates are requested to check whether all the questions are there and ensure there are no blank pages in the Question Booklet.
8. The candidate must write their Application ID in the space provided and sign on question booklet and OMR sheet. Do not write anything else on the Question Booklet.
9. Each question comprises four responses A), B), C) and D). Candidates have to select ONLY ONE correct response.
10. If more than one option is marked for one question, the answer will be treated as wrong. e.g. If for any item, **B** is the correct answer, the candidate has to darken the only **B circle on OMR sheet** against the question.
11. Candidates should not remove or tear off any sheet from this Question Booklet. Candidates are not allowed to take the Question Booklet out of the Examination Hall.
12. Failure to comply with any of the above instructions will render the candidate liable to such action or penalty as may be decided by the Competent Authority, NIT Goa.

*Invigilator's Signature*

*Candidate's Signature*

**PART-A**

Question number	Question	Answer
1.	<p>Choose the correct passive form of the following sentence: They are conducting the technical audit.</p> <p>A) The technical audit is being conducted. B) The technical audit was being conducted. C) The technical audit has been conducted. D) The technical audit is conducted.</p>	
2.	<p>Fill in the blank:</p> <p>No sooner had the technician fixed the fault _____</p> <p>A) then the system restarted automatically B) when the system restarted automatically C) than the system restarted automatically D) that the system restarted automatically</p>	
3.	<p>Choose the correct meaning of the idiom: "give a wide berth to"</p> <p>A) To welcome warmly B) To keep away from C) To challenge directly D) To embrace tightly</p>	
4	<p>Choose the correct passive form of the sentence: "They are playing football"</p> <p>A) Foot ball is played by them. B) Football has been played by them. C) Football was being played by them. D) Football is being played by them.</p>	
5.	<p>Choose the most appropriate sentence for official communication.</p> <p>A) Kindly revert back at the earliest. B) Kindly revert the earliest. C) Please reply at your earliest convenience. D) Reply back immediately.</p>	
6.	<p>Choose the correct indirect speech: He said, "Had I known about the delay, I would have informed you."</p> <p>A) He said that if he had known about the delay, he would have informed me. B) He said that had he known about the delay, he would inform me. C) He says that if he knew about the delay, he would have informed me. D) He said that if he knew about the delay, he would inform me.</p>	

7.	<p>Rewrite the sentence without changing its meaning:</p> <p>Hardly had the inspection begun when the power supply failed.</p> <p>A) The inspection began and the power supply failed immediately.  B) The inspection had hardly begun than the power supply failed.  C) The inspection began after the power supply had failed.  D) No sooner had the inspection begun than the power supply failed.</p>	
8.	<p>Which amendment to the constitution of India provides for reservation of one-third of seats for women in the Lok Sabha and State Legislative assemblies?</p> <p>A) 73<sup>rd</sup> Amendment act, 1992  B) 74<sup>th</sup> Amendment act, 1992  C) 86<sup>th</sup> Amendment act, 2002  D) 106<sup>th</sup> Amendment act. 2023</p>	
9.	<p>In the context of cybersecurity, CERT-In primarily functions to:</p> <p>A) Manage national cyber incidents  B) Conduct military intelligence operations  C) Frame parliamentary legislation  D) Regulate telecom tariffs</p>	
10.	<p>If GDP growth slows but inflation rises, the economy may face:</p> <p>A) Fiscal consolidation                      B) Trade liberalization  C) Stagflation condition                      D) Capital appreciation</p>	
11.	<p>With reference to banking terminology in India, which of the following statements is incorrect?</p> <p>A) The Repo rate is the rate at which the Reserve Bank of India lends money to commercial banks against securities.  B) The Reverse Repo rate is the rate at which commercial banks borrow money from the Reserve Bank of India.  C) The Bank rate is the rate at which the Reserve Bank of India lends money to commercial banks without any collateral.  D) The Repo rate is used by Reserve Bank of India to control inflation in the economy.</p>	
12.	<p>If a state fails to comply with constitutional machinery provisions, which Article may be invoked?</p> <p>A) Article 360    B) Article 352    C) Article 368    D) Article 356</p>	
13.	<p>If India increases investment in green hydrogen technology, the long-term impact would most likely be:</p> <p>A) Expansion of coal mining                      B) Higher crude oil imports  C) Strengthened clean energy transition                      D) Reduction in renewable capacity</p>	

14.	<p>If the Government of India increases capital expenditure on infrastructure during an economic slowdown, the most likely objective is to:</p> <p>A) Stimulate demand and accelerate economic growth  B) Reduce fiscal deficit immediately  C) Decrease public sector employment  D) Curtail private investment activities affecting economic growth</p>	
15.	<p>If a constitutional amendment is challenged for violating the "basic structure doctrine," which institution has the authority to examine its validity?</p> <p>A) Parliament through special majority  B) President under advisory power  C) Election Commission of India  D) Supreme Court of India</p>	
16.	<p>The number of rabbits in a farm increases by 20% every month. If the farm had 100 rabbits initially, then what will be the number of rabbits after 2 months?</p> <p>A) 144      B) 130      C) 154      D) 140</p>	
17.	<p>Consider the given questions and decide which of the following statements is sufficient to answer the question.</p> <p>Question: How much was the sale of company ABC?  Statements:</p> <ol style="list-style-type: none"> <li>The company ABC sold 75,000 units of soap at Rs. 70 each</li> <li>ABC has no other products on the product line</li> </ol> <p>A) Statement 1 alone is sufficient.  B) Statements 1 and 2 are required.  C) Statements 1 and 2 are insufficient. More data is required.  D) Statement 2 alone is sufficient.</p>	
18.	<p>Given the 26 letters of the English alphabet in the order A, B, ...Z. Identify the seventh letter to the right of the thirteenth from the left.</p> <p>A) V      B) U      C) T      S</p>	
19.	<p>Find one word that cannot be made from the letters of the given word: UNIFORMITY</p> <p>A) FORM      B) TORN      C) TINY      D) RENT</p>	
20.	<p>Six friends A, B, C, D, E, F are sitting in a circle, all facing the centre of the circle. C is to the left of D, F is between A and E and E is between F and D. Who is to the left of F?</p> <p>A) A      B) C      C) D      D) E</p>	

21.	A vessel contains 540 litres of a mixture of milk and water in the ratio of 5:4. If $x$ litres of water is added to the mixture, then the new ration of milk and water becomes 2:3 respectively. Find the value of $15x$ . A) 3000      B) 3250      C) 3150      D) 2850	
22.	A bag of colourful balls contains red, blue, and green balls in the ration 3:4:5. If there are 60 green balls, how many balls are there in the bag together? A) 150      B) 144      C) 160      D) 120	
23.	A farmer has cows and goats in the ratio 7:9. If 20 more cows are added to the farm, the ratio changes to 4:3. How many goats are there in the farm? A) 48      B) 24      C) 60      D) 36	
24.	The LCM and HCF of numbers 30,15,40,60 are respectively A) 180,5      B) 150,10      C) 120,5      D) 120,10	
25.	Identify the number that should come in the place of the question mark in the series given below. 132, 156, ?, 210, 240, 272 A) 182      B) 184      C) 192      D) 172	

### PART-B

26.	If $\left(p - \frac{1}{p}\right) = \sqrt{7}$ , then the value of $\left(p^3 - \frac{1}{p^3}\right)$ is equal to A) $12\sqrt{7}$ B) $10\sqrt{7}$ C) $8\sqrt{5}$ D) $12\sqrt{5}$	
27.	A school organized a function and $\frac{1}{5}$ <sup>th</sup> of girls and $\frac{1}{8}$ <sup>th</sup> of the boys participated in it. What fraction of the total number of students participated in the function? A) $\frac{15}{40}$ B) $\frac{17}{80}$ C) $\frac{13}{40}$ D) $\frac{21}{80}$	
28.	The sum of three numbers in Arithmetic Progression (A. P) is 12 and the sum of their cubes is 288. Find the numbers. A) 3,5,7      B) 4,6,8      C) 5,6,7      D) 2,4,6	
29.	A class has 20 boys and 30 girls. A student is selected at random. Given that the selected student is a girl, what is the probability that she scored above 80 marks if 12 girls scored above 80. A) $\frac{1}{5}$ B) $\frac{3}{5}$ C) $\frac{1}{2}$ D) $\frac{2}{5}$	

30.	The roots of the equation $x^2 - 12x + 35 = 0$ are A) $-5, 7$ B) $-5, -7$ C) $5, 7$ D) $5, -7$	
31.	A father is four times as old as his son. After 10 years, he will be three times as old as his son. Determine the current ages of the father and son. A) 80, 20      B) 30, 8      C) 36, 9      D) 48, 12	
32.	The value of $\sin 60^\circ \cos 30^\circ + \cos 60^\circ \sin 30^\circ$ is equal to A) 0      B) 0.866      C) 1      D) 0.5	
33.	In the triangle ABC, $AB=12\text{cm}$ , $AC=10\text{ cm}$ and $\angle BAC = 60^\circ$ . What is the length of side BC? A) 12 cm      B) 12.56 cm      C) 11.78 cm      D) 11.33 cm	
34.	If triangle ABC is similar to triangle DEF, $\angle A = 50^\circ$ , $\angle B = 60^\circ$ , what is the value of $\angle E$ ? A) $30^\circ$ B) $60^\circ$ C) $50^\circ$ D) $70^\circ$	
35.	The sum of the roots of a quadratic equation is 10, and the roots are in the ratio 2:3. Find the equation. A) $x^2 - 10x + 24 = 0$ B) $x^2 - 10x + 25 = 0$ C) $x^2 - 10x + 20 = 0$ D) $x^2 - 5x + 6 = 0$	
36.	The area of a circle is $1386\text{ cm}^2$ and the ratio of the breadth of the rectangle to the radius of the circle is 4:3. If the circumference of the circle is equal to the perimeter of the rectangle, determine the area of the rectangle. Note: Use $\pi = \frac{22}{7}$ A) $1064\text{ cm}^2$ B) $1048\text{ cm}^2$ C) $1032\text{ cm}^2$ D) $1056\text{ cm}^2$	
37.	If the angles of a triangle are in the ratio 1:2:3, then the measurement of the largest angle will be A) $60^\circ$ B) $75^\circ$ C) $90^\circ$ D) $120^\circ$	

38.	<p>Student study hours were gathered through a survey. The results are specified in the table below. Determine the mean study hours spent by a student.</p> <table border="1" data-bbox="679 353 1066 629"> <thead> <tr> <th>Study hours spent</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>0-5</td> <td>4</td> </tr> <tr> <td>6-10</td> <td>8</td> </tr> <tr> <td>11-15</td> <td>12</td> </tr> <tr> <td>16-20</td> <td>6</td> </tr> <tr> <td>21-25</td> <td>2</td> </tr> </tbody> </table> <p>A) 12.5      B) 13.5      C) 13      D) 12</p>	Study hours spent	Frequency	0-5	4	6-10	8	11-15	12	16-20	6	21-25	2	
Study hours spent	Frequency													
0-5	4													
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39.	<p>A purse contains 10 silver and 8 copper coins and a second purse contains 12 silver and 6 copper coins. If a coin is drawn at random from one of the two purses, find the probability that it is a silver coin.</p> <p>A) <math>\frac{11}{18}</math>      B) <math>\frac{13}{18}</math>      C) <math>\frac{7}{18}</math>      D) <math>\frac{5}{18}</math></p>													
40.	<p>The mean and standard deviation of a random variable X with the following probability distribution are</p> <table border="1" data-bbox="480 1155 1235 1249"> <thead> <tr> <th><math>x</math></th> <th>0</th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td><math>P(X = x)</math></td> <td><math>\frac{1}{2}</math></td> <td><math>\frac{1}{4}</math></td> <td><math>\frac{1}{8}</math></td> <td><math>\frac{1}{8}</math></td> </tr> </tbody> </table> <p>A) <math>\mu = \frac{7}{8}; \sigma = \sqrt{\frac{13}{8}}</math>      B) <math>\mu = \frac{7}{8}; \sigma = 1</math></p> <p>C) <math>\mu = \frac{15}{8}; \sigma = \sqrt{\frac{17}{8}}</math>      D) <math>\mu = \frac{17}{8}; \sigma = \sqrt{\frac{13}{8}}</math></p>	$x$	0	1	2	3	$P(X = x)$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$			
$x$	0	1	2	3										
$P(X = x)$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$										
41.	<p>An image formed by a plane mirror is always</p> <p>A) Real and inverted      B) Virtual and erect C) Real and erect      D) Virtual and inverted</p>													
42.	<p>The image distance for a concave mirror forming real image is taken as</p> <p>A) Negative      B) Infinite      C) Zero      D) Positive</p>													
43.	<p>A ray passing through the optical centre of a any lens emerges</p> <p>A) Refracted      B) Reflected C) Undeviated      D) Inverted</p>													
44.	<p>A concave lens always forms image which is:</p> <p>A) Real      B) Virtual and erect C) Inverted      D) Magnified</p>													



56.	<p>Consider the following compounds:</p> <p>1. Ethanol 2. Ethanoic acid 3. Methane</p> <p>Which of the above primarily undergo substitution reactions?</p> <p>A) 1 and 2 only                      B) 3 only C) 2 only                                D) 1,2 and 3</p>	
57.	<p>The most abundant metal on Earth's crust is</p> <p>A) Iron    B) Magnesium    C) Calcium    D) Aluminium</p>	
58.	<p>The name of the compound <math>\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CHO}</math> is</p> <p>A) Butanal    B) Butanone    C) Butanol    D) Butene</p>	
59.	<p>The self-linking property of carbon atoms to form long-chain compounds is known as</p> <p>A) catenation                      B) isomerisation C) substitution                      D) halogenation</p>	
60.	<p>Biogas is a mixture of the following gases.</p> <p>A) Ethane, Carbon monoxide, and Nitrogen B) Methane, Carbon dioxide and Nitrogen C) Butane, Nitrogen, and Carbon dioxide D) Carbon monoxide, Sulphur dioxide and Hydrogen</p>	
61.	<p>The best source of energy to power satellites in space is ----</p> <p>A) Lithium-ion battery    B) petroleum    C) Solar    D) Coal</p>	
62.	<p>The biodegradable polymer among the following is ----</p> <p>A) Polyvinyl chloride    B) Polyacetylene C) Polysaccharides        D) Polyacrylate</p>	
63.	<p>The permissible carbon dioxide level in the atmosphere is ----- ppm.</p> <p>A) 100        B) 350        C) 500        D) 50</p>	
64.	<p>Which gas among the following is a major component of LPG gas?</p> <p>A) Pentane    B) Methane    C) Propane    D) Hydrogen</p>	
65.	<p>The ozone layer exists in the ----- layer of the atmosphere.</p> <p>A) Troposphere                      B) Stratosphere C) Ionosphere                          D) Mesosphere</p>	
66.	<p>Which function returns the number of cells with data in Microsoft Excel?</p> <p>A) COUNT    B) AVG        C) SUM        D) COUNTA</p>	
67.	<p>What does sorting data do?</p> <p>A) Deletes data                      B) Arranges data order C) Colors cells                          D) Merges cells</p>	
68.	<p>Which chart is suitable for comparing values across categories?</p> <p>A) Line        B) Pie        C) Column    D) Area</p>	

69.	What is a range in Microsoft Excel? A) Single cell    B) Group of cells    C) Chart    D) File	
70.	Which of the following indicates urgency appropriately? A) Empty subject    B) Clear wording    C) Random symbols    D) No message	
71.	What does hyperlink preview show? A) Password    B) Destination link    C) File size    D) Sender name	
72.	Which of the following improves search results? A) Specific query    B) Random typing    C) No keywords    D) Short letters	
73.	Which practise does not ensure data privacy when using shared computers? A) Clearing browser cache B) Logging out of accounts and not saving passwords C) Using private browsing mode only D) Minimizing browser windows	
74.	Which type of malware disguises itself as legitimate software but secretly performs malicious actions? A) Trojan Horse    B) Spyware C) Rootkit    D) All of them	
75.	What should be done before opening the attachment? A) Open quickly    B) Scan/check source    C) Forward    D) Rename	

End of Question paper

**ANSWER KEY**

**FOR THE WRITTEN TEST CONDUCTED FOR THE POST OF  
SENIOR TECHNICIAN AT NIT GOA ADVERTISED AGAINST THE  
ADVERTISEMENT NO NITGOA/RECT/2025/9 DATED 28032025**

<b>Q. No.</b>	<b>Answer Key</b>	<b>Q. No.</b>	<b>Answer Key</b>	<b>Q. No.</b>	<b>Answer Key</b>	<b>Q. No.</b>	<b>Answer Key</b>	<b>Q. No.</b>	<b>Answer key</b>
1	<b>A</b>	16	<b>A</b>	31	<b>A</b>	46	<b>B</b>	61	<b>C</b>
2	<b>C</b>	17	<b>B</b>	32	<b>C</b>	47	<b>B</b>	62	<b>C</b>
3	<b>B</b>	18	<b>C</b>	33	<b>D</b>	48	<b>A</b>	63	<b>B</b>
4	<b>D</b>	19	<b>D</b>	34	<b>B</b>	49	<b>C</b>	64	<b>C</b>
5	<b>C</b>	20	<b>D</b>	35	<b>A</b>	50	<b>B</b>	65	<b>B</b>
6	<b>A</b>	21	<b>C</b>	36	<b>A</b>	51	<b>C</b>	66	<b>D</b>
7	<b>D</b>	22	<b>B</b>	37	<b>C</b>	52	<b>A</b>	67	<b>B</b>
8	<b>D</b>	23	<b>D</b>	38	<b>D</b>	53	<b>D</b>	68	<b>C</b>
9	<b>A</b>	24	<b>C</b>	39	<b>A</b>	54	<b>B</b>	69	<b>B</b>
10	<b>C</b>	25	<b>A</b>	40	<b>B</b>	55	<b>C</b>	70	<b>A</b>
11	<b>B</b>	26	<b>B</b>	41	<b>B</b>	56	<b>B</b>	71	<b>B</b>
12	<b>D</b>	27	<b>C</b>	42	<b>D</b>	57	<b>D</b>	72	<b>A</b>
13	<b>C</b>	28	<b>D</b>	43	<b>C</b>	58	<b>A</b>	73	<b>D</b>
14	<b>A</b>	29	<b>D</b>	44	<b>B</b>	59	<b>A</b>	74	<b>A</b>
15	<b>D</b>	30	<b>C</b>	45	<b>A</b>	60	<b>B</b>	75	<b>B</b>