QP Series Code : **AD**

অসম দক্ষতা বিশ্ববিদ্যালয়

ASSAM SKILL UNIVERSITY

(A Govt of Assam University)

Assam Skill University Entrance Examinations 2026

LATERAL ADMISSION IN B. TECH. IN CSE (AI-ML and CS)

(Paper No. : 09)

Full Marks : 100 Time : 130 minutes

Total number of pages in this booklet : 16

DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE INSTRUCTED

All candidates are required to read the instructions given below, before starting to write the answers. Ensure to write your ROLL NUMBER AT THE BOTTOM OF THIS PAGE.

Instructions

1. Candidate should keep his/her admit card on the table with his/her latest photograph pasted on it.
2. There are 100 MCQs meant for applicants **for admission in Lateral admission in B.Tech. in Computer Science Engineering (AI-ML and Cyber Security)**. All questions are compulsory.
3. Each question carries 1 mark. There is no negative marking. **Full marks : 100**.
4. The answers are to be given by making proper marking on the **OMR with ball point Black pen** only in separate OMR sheets.
5. No loose sheet is allowed. Rough work, if required, may be done on the blank pages at the end of this question paper.
6. Talking with any other candidate inside the examination hall may lead to disqualification of the candidate.
7. **OMRs must to be signed by the candidate and the invigilator**. **The candidate has to ensure the same, because lack of these signatures will lead to cancellation of the OMR.**
8. Candidate has to put his/her signature on the attendance sheet. **No candidate is allowed to leave the examination hall before completion of 1 (one) hour from the commencement of examination.**
9. Candidate needs to check the Question booklet after instructed by the invigilator and report if any discrepancies are noticed in the booklet regarding number of pages or damaged pages.
10. **Marking in more than one option against any question on the OMR will cancel that answer**. Instructions are given on the reverse of the OMRs.
11. **Correct Roll Codes is to be written on the concerned OMR**.
12. Handover the Question Paper and the OMR to the invigilator before leaving the exam hall.

Roll Code : | L | I | T |

Roll Number : | | | | | | | |

Sl. No. of the OMR : | | | | | | | |

Signature of the candidate:.....

K01 GA 009

PAPER–9

Lateral Admission in B. Tech-IT

1. If two positive integers a and b are written as $a = x^3y^2$ and $b = xy^3$, where x and y are prime numbers, then what is the HCF(a, b)?

(A) xy (B) xy^2

(C) x^3y^3 (D) x^2y^2

2. If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, what is the value of k?

(A) 10 (B) –10

(C) –7 (D) –2

3. What is the remainder when the polynomial $p(x) = 2x^3 - 3x^2 + 4x - 5$ is divided by $(x - 2)$?

(A) 7 (B) 11

(C) –5 (D) 3

4. If the pair of linear equations $2x + 3y = 7$ and $2ax + (a + b)y = 28$ has infinitely many solutions, what are the values of a and b?

(A) $a = 4, b = 8$ (B) $a = 2, b = 4$

(C) $a = 4, b = 4$ (D) $a = 8, b = 4$

5. What are the roots of the quadratic equation $x^2 - 5x + 6 = 0$?

(A) 1 and 6 (B) –2 and –3

(C) 2 and 3 (D) –1 and –6

6. For what value of k will the quadratic equation $2x^2 + kx + 3 = 0$ have two equal real roots ?

(A) $\pm 2\sqrt{6}$ (B) ± 6

(C) $\pm\sqrt{6}$ (D) $\pm 2\sqrt{3}$

7. If the sum of a number and its reciprocal is $\frac{10}{3}$,find the absolute difference between the number and its reciprocal.

(A) $\frac{1}{3}$ (B) $\frac{8}{3}$

(C) 3 (D) $\frac{5}{3}$

8. The lengths of the diagonals of a rhombus are 16 *cm* and 12 *cm*. What is the length of the side of the rhombus ?

(A) 10 *cm* (B) 14 *cm*

(C) 20 *cm* (D) 8 *cm*

9. Two similar triangles ΔABC and ΔPQR have areas 25 cm^2 and 49 cm^2 respectively. If $QR = 9.8$ *cm*, what is the length of the corresponding side *BC* ?

(A) 5 *cm* (B) 7 *cm*

(C) 6.2 *cm* (D) 8.4 *cm*

10. If two tangents inclined at an angle of 60° are drawn to a circle of radius 3 *cm*, then what is the length of each tangent ?

(A) 3 *cm* (B) $3\sqrt{3}$ *cm*

(C) $\sqrt{3}$ *cm* (D) 6 *cm*

11. A solid metal cuboid of dimensions 9 *cm* × 11 *cm* × 12 *cm* is melted and recast into solid spheres of radius 3 *cm*. How many complete spheres can be formed ?

(A) 9 (B) 10

(C) 11 (D) 12

12. A copper sphere of diameter 6 *cm* is melted and drawn into a long wire of uniform circular cross-section. If the length of the wire is 36 *m*, find its radius.

(A) 2 *mm* (B) 1 *mm*

(C) 0.2 *cm* (D) 2 *cm*

13. The total surface area of a solid hemisphere is 462 cm^2. Find its volume $\left(\text{Take } \pi = \frac{22}{7}\right)$

(A) 718.67 cm^3 (B) 539 cm^3

(C) 616 cm^3 (D) 462 cm^3

14. If a cube has a diagonal length of $6\sqrt{3}$ *cm*, what is its total surface area ?

(A) 144 cm^2 (B) 216 cm^2

(C) 72 cm^2 (D) 180 cm^2

15. If $\sin\theta = \frac{4}{5}$, what is the value of $\frac{4\tan\theta - 5\cos\theta}{\sec\theta + 4\cot\theta}$?

(A) $\frac{1}{2}$ (B) $\frac{5}{14}$

(C) $\frac{2}{3}$ (D) $\frac{3}{7}$

16. If $sec\theta + tan\theta = p$, then what is the value of $sec\theta$?

(A) $\frac{p^2+1}{2p}$ (B) $\frac{p^2-1}{2p}$

(C) $\frac{p^2-1}{p^2+1}$ (D) $\frac{2p}{p^2+1}$

17. If $cos(A+B) = 0$ and $sin(A-B) = \frac{1}{2}$, where A and B are acute angles, find the values of A and B.

(A) $A = 45^o, B = 45^o$ (B) $A = 60^o, B = 30^o$

(C) $A = 30^o, B = 60^o$ (D) $A = 75^o, B = 15^o$

18. What is the value of $(sin\theta + csc\theta)^2 + (cos\theta + sec\theta)^2 - (tan^2\theta + cot^2\theta)$?

(A) 5 (B) 7

(C) 9 (D) 1

19. A vector path yields the identity $\sqrt{\frac{1+sin\theta}{1-sin\theta}}$. This expression is equivalent to:

(A) $sec\theta - tan\theta$ (B) $sec\theta + tan\theta$

(C) $csc\theta + cot\theta$ (D) $sec\theta . tan\theta$

20. An observer 1.5 m tall is 28.5 m away from a tower. The angle of elevation of the top of the tower from their eyes is 45°. What is the height of the tower?

(A) 28.5 m (B) 30 m

(C) 27 m (D) 31.5 m

21. A kite is flying at a height of 60 m above the ground. The string attached to the kite is temporarily tied to a point on the ground. The inclination of the string with the ground is 60°. Find the length of the string.

(A) $40\sqrt{3}$ m (B) $30\sqrt{3}$ m

(C) 120 m (D) $60\sqrt{2}$ m

22. From the top of a 7 m high building, the angle of elevation of the top of a cable tower is 60° and the angle of depression of its foot is 45°. Determine the height of the tower.

(A) $7(\sqrt{3}-1)$ m (B) $7(\sqrt{3}+1)$ m

(C) 14 m (D) $7\sqrt{3}$ m

23. In a frequency distribution, if the mode is 24 and the mean is 30, what is the median of the data according to the empirical relationship ?

(A) 26 (B) 28

(C) 27 (D) 25

24. Consider the following data sequence: 15, 12, 18, 14, 19, 11, 16, 20. If 10 is added to each term, how does the median change ?

(A) The median remains the same (B) The median decreases by 10

(C) The median increases by 10 (D) The median is multiplied by 10

25. While calculating the mean of 20 observations, one observation was wrongly recorded as 45 instead of 25. If the initial calculated mean was 50, what is the correct mean ?

(A) 49 (B) 48

(C) 51 (D) 49.5

26. For a given grouped frequency distribution, the modal class is $20-30$, the lower limit l = 20, the frequency of modal class $f_1 = 15$, frequency of preceding class $f_0 = 10$, frequency of succeeding class $f_2 = 12$, and class width $h = 10$. Calculate the mode.

(A) 23.12 (B) 26.25

(C) 24.50 (D) 25.00

27. Two unbiased dice are thrown simultaneously. What is the probability of getting a total score of a prime number ?

(A) $\frac{5}{12}$ (B) $\frac{7}{18}$

(C) $\frac{1}{2}$ (D) $\frac{11}{36}$

28. A box contains 5 red, 8 white, and 4 green marbles. One marble is taken out of the box at random. What is the probability that the marble taken out will NOT be green ?

(A) $\frac{4}{17}$ (B) $\frac{13}{17}$

(C) $\frac{5}{17}$ (D) $\frac{12}{17}$

29. Which of the following numbers cannot represent the probability of an event ?

(A) 1.5 (B) 0.001

(C) $\frac{2}{3}$ (D) 15%

30. In a leap year, what is the probability of getting exactly 53 Sundays ?

(A) $\frac{1}{7}$ (B) $\frac{2}{7}$

(C) $\frac{3}{7}$ (D) $\frac{53}{366}$

Computer Science and Programming

31. Which memory is fastest in a computer system?

(A) RAM (B) ROM

(C) Cache Memory (D) Hard Disk

32. Which scheduling technique is generally used in time-sharing operating systems?

(A) FCFS (B) Round Robin

(C) Priority Scheduling (D) SJF

33. Which of the following is not system software?

(A) Compiler (B) Operating System

(C) Text Editor (D) Device Driver

34. The binary equivalent of decimal number 25 is:

(A) 11001 (B) 10101

(C) 11100 (D) 10011

35. Which logic gate gives output 1 only when both inputs are 1?

(A) OR (B) XOR

(C) NAND (D) AND

36. In a flowchart, the parallelogram symbol represents:

(A) Decision (B) Input/Output

(C) Process (D) Connector

37. Which data type occupies 1 byte in C language?

(A) int (B) float

(C) char (D) double

38. What is the output of the expression: 10/3 in C (integer division)?

(A) 3.33 (B) 3

(C) 4 (D) 0

39. Which operator has the highest precedence?

(A) + (B) *

(C) && (D) =

40. Which statement is true about an algorithm?

(A) It must always be written in C (B) It can have infinite steps

(C) It should be clear and finite (D) It cannot use loops

41. What will be the output?

```
int x = 5;
printf("%d", x++);
```

(A) 4 (B) 5

(C) 6 (D) Error

42. Which loop is most suitable when the number of iterations is unknown?

(A) for (B) while

(C) switch (D) goto

43. Which of the following is a logical operator in C?

(A) || (B) %

(C) ++ (D) =

44. Which header file is required for mathematical functions in C?

(A) string.h (B) stdio.h

(C) math.h (D) conio.h

45. Which keyword is used to skip the current iteration of a loop?

(A) stop (B) continue

(C) break (D) pass

46. Which error occurs during execution of a program?

(A) Syntax Error (B) Logical Error

(C) Runtime Error (D) Compilation Error

47. Which of the following is not a looping statement?

(A) for (B) while

(C) switch (D) do-while

48. Which of the following converts high-level language into machine language?

(A) Editor (B) Compiler

(C) Loader (D) Debugger

49. What is the output of:

```
printf("%d", 7 % 4);
```

(A) 1 (B) 2

(C) 3 (D) 4

50. Which of the following is a valid variable name in C?

(A) 2value (B) float

(C) total_marks (D) student-name

51. Which statement is used to terminate a switch case?

(A) continue (B) stop

(C) break (D) return

52. What is the output of:

```
int x = 3;
x += 2;
printf("%d", x);
```

(A) 2 (B) 3

(C) 5 (D) 6

53. Which symbol is used for address operator in C?

(A) * (B) &

(C) % (D) @

54. What is the output of:

```
printf("%d", (5 > 2) ? 10 : 20);
```

(A) 5 (B) 10

(C) 20 (D) Error

55. Which sorting method repeatedly swaps adjacent elements?

(A) Merge Sort (B) Quick Sort

(C) Bubble Sort (D) Selection Sort

56. What is the output of:

```
int a = 10;
printf("%d", a == 10);
```

(A) 0 (B) 1

(C) 10 (D) Error

57. Which of the following is not a keyword in C?

(A) int (B) float

(C) define (D) while

58. Which concept is used to find and remove program errors?

(A) Compiling (B) Executing

(C) Debugging (D) Linking

59. Which data structure follows FIFO principle?

(A) Stack (B) Queue

(C) Array (D) Tree

60. Which protocol is mainly used for web browsing?

(A) FTP (B) SMTP

(C) HTTP (D) TCP

Quantitative Aptitude

61. A student's marks increased from 400 to 460. What is the percentage increase?

(A) 12% (B) 15%

(C) 18% (D) 20%

62. In an MBA class, 40% of the students are female. If there are 120 students in total, how many are male?

(A) 48 (B) 60

(C) 72 (D) 80

63. The ratio of boys to girls in a class is 5:3. If there are 40 boys, how many girls are there?

(A) 20 (B) 24

(C) 30 (D) 32

64. If ₹ 720 is divided between A and B in the ratio 5:7, B's share is:

(A) ₹ 300 (B) ₹ 350

(C) ₹ 420 (D) ₹ 500

65. A shopkeeper buys an item for ₹ 800 and sells it for ₹ 920. His profit percentage is:

(A) 12% (B) 15%

(C) 18% (D) 20%

66. An article is sold at a loss of 10% for 450. What is its cost price?

(A) ₹ 500 (B) ₹ 550

(C) ₹ 480 (D) ₹ 490

67. A car travels 240 km in 4 hours. Its average speed is:

(A) 50 km/h (B) 55 km/h

(C) 60 km/h (D) 65 km/h

68. A train moving at 72 km/h crosses a pole in 15 seconds. The length of the train is:

(A) 250 m (B) 300 m

(C) 350 m (D) 400 m

69. A can complete a job in 12 days and B can complete it in 18 days. Working together, they can complete the job in:

(A) 6.2 days (B) 7.2 days

(C) 8 days (D) 9 days

70. Find the simple interest on ₹ 10,000 at 8% per annum for 3 years.

(A) ₹ 2,000 (B) ₹ 2,200

(C) ₹ 2,400 (D) ₹ 2,600

Logical Reasoning

71. What should come next in the following number series?

2, 6, 12, 20, 30,?

(A) 36 (B) 40

(C) 42 (D) 46

72. Find the missing value in the sequence:

3, 7, 15, 31, 63, ?

(A) 95 (B) 111

(C) 123 (D) 127

73. If in a certain code language, "ROSE" is written as "TQUG", how will "BISCUIT" be written in that same code?

(A) DKUEWKV (B) DKUEWLV

(C) DJUEWKV (D) DKVEWKV

74. In a specific code, "MYSTERY" is written as "NXTUDSZ". How is "PUZZLE" encoded in this format?

(A) QVYYMD (B) OWYYKD

(C) QTAAKF (D) QUAAFMF

75. Pointing to a photograph, a man said, "I have no brother or sister, but that man's father is my father's son." Whose photograph was it?

(A) His own photograph (B) His son's photograph

(C) His father's photograph (D) His nephew's photograph

76. If A is the brother of B, B is the sister of C, and C is the father of D, how is A related to D?

(A) Father (B) Uncle

(C) Brother (D) Grandfather

77. A person walks 10 meters toward the North, turns right and walks 15 meters. He then turns left and walks 5 meters. Finally, he turns left and walks 15 meters. How far is he now from his starting point?

(A) 15 meters (B) 20 meters

(C) 25 meters (D) 5 meters

78. Rohan faces South. He turns 135^0 in the anticlockwise direction and then 180^0 in the clockwise direction. Which direction is he facing now?

(A) North-East (B) South-West

(C) South-East (D) West

79. Choose the option that exhibits the same relationship as: Ostrich : Bird

(A) Whale : Fish (B) Lizard : Amphibian

(C) Bat : Mammal (D) Penguin : Reptile

80. Identify the odd one out from the given options:

(A) 27 (B) 64

(C) 125 (D) 144

VERBAL ABILITY

Direction (Q81-83): Read the following passage and find out the appropriate option to answer each question:

Stargazing is one of the most accessible and rewarding outdoor activities. While city lights often obscure the night sky, taking a short drive to the countryside reveals a breathtaking cosmic display. In a dark, unpolluted area, the human eye can naturally spot thousands of stars, various constellations, and occasionally even the glowing band of the Milky Way. To truly enhance the experience, many astronomy enthusiasts use a pair of basic binoculars or a small telescope, which brings distant craters on the Moon and the faint rings of Saturn into clear view.

Questions

81. Where is the best place to go stargazing according to the passage?

(A) In the middle of a bustling city center

(B) In a heavily lit urban park

(C) In the countryside with dark, unpolluted skies

(D) Under the glow of bright streetlights

82. What do astronomy enthusiasts use to enhance their view of the night sky?

(A) Large telescopes and specialized cameras

(B) Basic binoculars or small telescopes

(C) City lights for better contrast

(D) Magnifying glasses

83. What does the word "obscure" most closely mean as it is used in the passage?

(A) To make something bright and visible

(B) To make something difficult to see or conceal

(C) To enhance the color of something

(D) To study something closely

84. Choose the word which is the exact antonym of the word EXODUS:

(A) Influx (B) Home-coming

(C) Return (D) Restoration

85. Select the most appropriate synonym of the given word:

TACITURN

(A) Noisy (B) Lovely

(C) Verbose (D) Reserved

86. Replace the underlined part of the sentence with appropriate option to make the sentence grammatically correct:

If you hate cleaning fish yourselves, why don't you clean at the fishmongers?

(A) are you getting them clean (B) don't you get it clean

(C) don't you get them cleaned (D) have not you cleaned them

Direction (Q87-88): Find out the appropriate option to fill in the blanks:

87. The river Saraswati flows ____ India is the oldest river ___ the country.

(A) In, of (B) Through, for

(C) Over, in (D) Through, of

88. Mr. Roy sought mercy . . . . . his father.

(A) with (B) from

(C) along (D) under

89. Choose the correct sentence.

(A) When I woke up, he has already eaten breakfast.

(B) When I woke up, he had already eaten breakfast.

(C) When I had woken up, he had already ate breakfast.

(D) When I had woken up, he has already ate breakfast.

90. Find out the appropriate option to replace the underlined portion to make the sentence grammatically correct:

Before I met him personally, I admit that I had have a poor opinion about him.

(A) have (B) have had

(C) had to have (D) had had

General Awareness

91. Which country hosted the COP30 UN Climate Change Conference in late 2025?

(A) Brazil (B) United Arab Emirates

(C) Azerbaijan (D) Australia

92. Who won the Men's Singles title at the Australian Open tennis tournament in January 2026?

(A) Jannik Sinner (B) Carlos Alcaraz

(C) Novak Djokovic (D) Daniil Medvedev

93. NASA's Artemis III mission, which aims to land humans back on the lunar surface, is targeted for which location on the Moon?

(A) Sea of Tranquility (B) Lunar South Pole

(C) Ocean of Storms (D) Copernicus Crater

94. In early 2026, which country officially became the newest member to adopt the Euro (€) as its currency?

(A) Bulgaria (B) Romania

(C) Croatia (D) Sweden

95. Which of the following cell organelles is responsible for cellular respiration and energy generation in the form of ATP?

(A) Ribosome (B) Mitochondrion

(C) Golgi Apparatus (D) Lysosome

96. What phenomenon is primarily responsible for the twinkling of stars observed from Earth's surface?

(A) Total internal reflection of starlight

(B) Atmospheric refraction of starlight

(C) Dispersion of light waves

(D) Scattering of light by dust particles

97. Which chemical element has the highest thermal and electrical conductivity among all metals?

(A) Gold (B) Copper

(C) Silver (D) Aluminum

98. Sound waves travel fastest through which of the following mediums?

(A) Vacuum (B) Air at 20^0c

(C) Liquid water (D) Solid Steel

99. World Environment Day is celebrated globally every year on which date?

(A) April 22nd (B) June 5th

(C) September 16th (D) December 11th

100. International Women's Day is celebrated annually on which date?

(A) February 13th (B) March 8th

(C) October 11th (D) November 25th

SPACE FOR ROUGH WORK (IF REQUIRED)

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