QP Series Code : **AC**

অসম দক্ষতা বিশ্ববিদ্যালয়

ASSAM SKILL UNIVERSITY
(A Govt of Assam University)

Assam Skill University Entrance Examinations 2026
LATERAL ADMISSION IN B. TECH. IN CIVIL ENGINEERING
(Paper No. : 08)

Full Marks : 100 Time : 130 minutes

Total number of pages in this booklet : 12

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 Lateral admission in B.Tech. in Civil Engineering**. All questions are compulsory. MCQs are as per the given syllabus.
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 | C | V | Roll Number : | | | | | | | |

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

Paper : 08
(For Lateral Admission in B.Tech)
Civil Engineering

1. If $\begin{vmatrix} a+x & a & x \\ a-x & a & x \\ a-x & a-x & \end{vmatrix} = 0$ then x is :

(A) 0 (B) a
(C) 3 (D) 2a

2. The inverse of matrix $\begin{bmatrix} 5 & 2 \\ 3 & 1 \end{bmatrix}$ is :

(A) $\begin{bmatrix} -5 & -2 \\ -3 & -1 \end{bmatrix}$ (B) $\begin{bmatrix} 5 & 3 \\ 2 & 1 \end{bmatrix}$

(C) $\begin{bmatrix} -1 & 2 \\ 3 & -5 \end{bmatrix}$ (D) $\begin{bmatrix} 3 & 1 \\ 5 & 2 \end{bmatrix}$

3. If in an A.P, $t_1 = log_{10} a$, $t_{n+1} = log_{10} b$ and $t_{2n+1} = log_{10} c$ then a,b,c are in

(A) A.P (B) G.P
(C) H.P (D) None of these

4. If a,b,c are in G.P, then the relation between a,b,c are

(A) $2b = 2a + c$ (B) $2a = b + c$
(C) $b = (ac)^{1/2}$ (D) $2c = a + c$

5. $log_b a \times log_c b$ can be written as :

(A) $log_b a$ (B) $log_b ac$
(C) $log_c a$ (D) $2 log_b ac$

6. The number of arrangements of the letters of the word BANANA in which the two N's do not appear adjacently is :

(A) 40 (B) 60
(C) 80 (D) 100

7. The roots of $12x^2 + kx + 5 = 0$ are in the ratio 3:2, then k =

(A) ± 5 (B) $\pm\sqrt{10}$
(C) $\pm 5\sqrt{10}$ (D) $\pm 2\sqrt{10}$

8. Polar form of a complex number is

(A) $r(tan\theta - i cot\theta)$ (B) $r(sec\theta + i cos ec\theta)$
(C) $r(sin\theta + i cos\theta)$ (D) $r(cos\theta + i sin\theta)$

9. The modulus of the Complex number $\frac{3+5i}{1-2i}$ is :

(A) $\sqrt{5}$ (B) 5
(C) $\sqrt{\frac{34}{5}}$ (D) $\sqrt{2}$

10. Find n and r if ${}^{n}P_{r} = 840$ and ${}^{n}C_{r} = 35$

(A) 7 and 5 (B) 7 and 4

(C) 6 and 4 (D) 6 and 5

11. $1 + tan\,75° + tan\,15° =$

(A) 5 (B) 4

(C) 3 (D) 2

12. If $tan\,\theta + cos\,\theta = 4$, then the value of $tan^2\,\theta + cot^2\,\theta$ is

(A) 12 (B) 14

(C) 16 (D) 18

13. If $A + B = \frac{\pi}{4}$ then $(tan\,A + 1)(tan\,B + 1) =$

(A) 1 (B) 2

(C) 0 (D) 3

14. In the triangle ABC if $sin^2\,B + sin^2\,C = sin^2\,A$ then the measure of the angle A is

(A) 30° (B) 45°

(C) 60° (D) 90°

15. If $sin\,x + cos\,x = 1$, the value of $sin\,2x$ is

(A) 0 (B) 1

(C) 0.5 (D) 2

16. If $z = x^2 + 2xy$, then dz is equal to

(A) $(x + y)\,dx + xdy$ (B) $2xdx + 2ydy$

(C) $2(x + y)\,dx + 2xdy$ (D) None of these

17. $\int \frac{(1+x)^2}{x + x^2}\,dx$ is equal to

(A) $log\,x + log\,(1 + x^2) + c$ (B) $log\,x + tan^{-1}\,x + c$

(C) $log\,x + 2\,tan^{-1}\,x + c$ (D) None of these

18. $lim_{x \to 0} \frac{1 - cos\,x}{x^2}$ is

(A) 0 (B) 0.25

(C) 0.5 (D) 1

19. Inverse function of $f(x) = 3x - 2$ is :

(A) $\frac{x}{3}$ (B) $\frac{x-2}{3}$

(C) $\frac{x-3}{3}$ (D) $\frac{x+2}{3}$

20. The function $f(x) = \frac{|x|}{x}$ at $x = 0$ is_____

(A) Left continuous (B) Right continuous
(C) Continuous (D) Discontinuous

21. $\int_0^1 |1 - x|\, dx =$ _____

(A) 0 (B) 1
(C) 0.5 (D) 1.5

22. The area enclosed within the curve $|x| + |y| = 1$ is _____

(A) $\sqrt{2}$ (B) 2
(C) $2\sqrt{2}$ (D) 4

23. $f(x) = x^2 + 1$, $g(x) = x + 2$, $x \in R$ then $f(g(x))$ =_____

(A) $x^2 + 4x + 5$ (B) $x^2 + 3$
(C) $x^2 + 4x + 4$ (D) $x^2 + 2$

24. The derivative of an odd function is

(A) odd function (B) even function
(C) can't be determine (D) both even and odd

25. If $y = log(tan\, x)$ then $\frac{dy}{dx}$ at $x = \frac{\pi}{4}$ is_____

(A) 6 (B) $\frac{\sqrt{3}}{2}$
(C) 2 (D) 0

26. The tangent to the hyperbola $4x^2 - 5y^2 = 16$ at the point $(3, -2)$ is _____

(A) $6x - 5y = 28$ (B) $6x + 5y = 8$
(C) $5y - 6y = 28$ (D) $5x + 6y = 4$

27. If the circles a $x^2 + y^2 + 2x - 2y + 4 = 0$, $x^2 + y^2 + 4x - 2fy + 2 = 0$ are orthogonal, then f=_____

(A) 1 (B) 2
(C) –1 (D) –2

28. The equation of the normal to the curve $y = x^2 + 2x + 5$ at (2,13) is _____

(A) $x + 6y = 0$ (B) $x + 9y - 3 = 0$
(C) $x + 9y = 0$ (D) $x + 6y - 80 = 0$

29. The co-ordinate of the vertex of the parabola a $y^2 - 4y - 8x + 4 = 0$ are _____

(A) (1,1) (B) (0,2)
(C) (2,1) (D) (1,2)

30. The co-ordinate of the midpoint of the line joining two points (16,4) and (36,6) are

(A) (26,5) (B) (5,26)

(C) (10,1) (D) (1,10)

31. Choose the correct sentence

(A) He do not like coffee (B) He does not likes coffee

(C) He does not like coffee (D) He not like coffee

32. Choose the correct passive voice of : "They completed the project."

(A) The project completed by them (B) The project was completed by them

(C) The project is completed by them (D) The project had completed by them

33. What is the meaning of the idiom "Break the ice" ?

(A) To damage something (B) To start a conversation comfortably

(C) To feel very cold (D) To stop talking

Reading Comprehension (Questions 34–35)

Read the passage carefully :

Technology has changed the way students learn today. Online learning platforms provide access to lectures, notes, and practice materials anytime and anywhere. However, excessive dependence on technology may reduce face-to-face interaction and critical thinking skills.

34. What is the main idea of the passage ?

(A) Technology should be banned in education

(B) Students dislike online learning comfortably

(C) Technology has both advantages and disadvantages in education.

(D) Critical thinking is unnecessary today

35. According to the passage, online learning platforms provide:

(A) Only classroom lectures (B) Limited study material

(C) Access to study resources anytime (D) Printed notes only

36. Find the next term in the series: 3, 8, 15, 24, 35, ___

(A) 42 (B) 46

(C) 48 (D) 50

37. If in a certain code language, "ENGINEER" is written as "FOHJOFFS", then "MACHINE" will be written as:

(A) NBDIJOF (B) NBDIJMF

(C) NBDIJOF (D) NBCHJOF

38. A train 180 m long crosses a pole in 12 seconds. What is the speed of the train?

(A) 12 *m/s* (B) 15 *m/s*

(C) 18 *m/s* (D) 20 *m/s*

39. A man walks 10 *km* north, then 6 *km* east, then 10 *km* south. How far is he from the starting point ?

(A) 4 *km* (B) 6 *km*

(C) 8 *km* (D) 10 *km*

40. In a class of 60 students, 35 students like Mathematics, 25 like Physics, and 10 like both subjects. How many students like neither subject ?

(A) 5 (B) 10

(C) 15 (D) 20

41. Which line type is used to represent visible edges in an object ?

(A) Continuous thick line (B) Dashed line

(C) Chain thin line (D) Zig-zag line

42. The eccentricity of a conic section is always :

(A) Increasing towards the focus (B) Decreasing towards the focus

(C) Constant (D) None of these

43. The eccentricity of a parabola is:

(A) 0 (B) 1

(C) Less than 1 (D) Greater than 1

44. A scale of 6 cm represents 1 km. Its RF is

(A) 0 (B) 1

(C) Less than 1 (D) Greater than 1

45. Projectors of orthographic projections are :

(A) Convergent (B) Divergent

(C) Parallel (D) None of these

46. Orthographic projection is used to represent :

(A) 3D view only

(B) Perspective view

(C) Different views of an object on perpendicular planes

(D) Artistic sketches

47. In isometric projection, the angle between the isometric axes is :

(A) 90° (B) 100°

(C) 120° (D) 45°

48. Which thread profile is commonly used for power transmission ?

(A) Square thread (B) Metric thread

(C) Whitworth thread (D) Knuckle thread

49. A joint in which plates overlap each other is called:

(A) Butt joint (B) Lap joint

(C) Edge joint (D) Tee joint

50. A point located above HP and in front of VP lies in :

(A) First quadrant (B) Second quadrant

(C) Third quadrant (D) Fourth quadrant

51. Coefficient of friction depends on

(A) Nature of surfaces only (B) Area of contact only

(C) Both (A) and (B) (D) None of these

52. The moment of inertia depends upon :

(A) Mass distribution (B) Color of body

(C) Temperature only (D) Surface finish only

53. Stress is defined as :

(A) Force × Area (B) Force per unit area

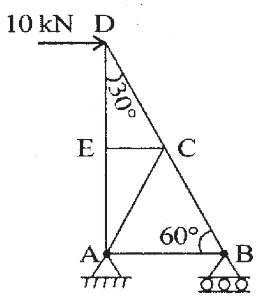
(C) Area per unit force (D) Load × Length

54. The point where bending moment changes sign is called :

(A) Neutral point (B) Contraflexure point

(C) Shear center (D) Centroid

55. Member(s) of the truss shown below which carries/carry zero force is/



(A) EC only (B) EC and AB

(C) EC and AC (D) EC, AC and AB

56. The effective length of a column of length L, when one end is fixed and other end is free is _____

(A) L (B) L/2

(C) $L/\sqrt{2}$ (D) 2L

57. The slope of a simply supported beam carrying uniformly distributed loading throughout the span is maximum at:

(A) Center (B) Supports

(C) Quarter span (D) Nowhere

58. Members of a perfect truss are assumed to carry :

(A) Bending moment (B) Shear force

(C) Axial force only (D) Both (A) and (B)

59. In simple bending theory, plane sections before bending remain:

(A) Curved after bending (B) Plane after bending

(C) Inclined after bending (D) Distorted after bending

60. Which property of stone indicates its ability to resist weathering action ?

(A) Hardness (B) Toughness

(C) Durability (D) Porosity

61. Efflorescence in bricks is caused by :

(A) Excess burning (B) Presence of soluble salts

(C) Lack of moisture (D) Excess clay

62. Slump test is conducted to determine :

(A) Strength of concrete (B) Durability of concrete

(C) Workability of fresh concrete (D) Tensile stress

63. Which type of door is commonly used for garages ?

(A) Flush door (B) Revolving door

(C) Rolling shutter door (D) Panel door

64. In compass surveying, the direction of a line is measured with respect to :

(A) True north only (B) Magnetic north

(C) Grid north (D) East direction

65. The process of determining relative heights of points is called :

(A) Traversing (B) Leveling

(C) Ranging (D) Centering

66. Closely spaced contour lines indicate :

(A) Gentle slope (B) Steep slope

(C) Flat ground (D) Valley

67. Which method of plane table surveying is suitable for locating inaccessible points ?

(A) Radiation (B) Traversing

(C) Intersection (D) Resection

68. GPS stands for :

(A) General Positioning System (B) Global Positioning System

(C) Geographical Plotting System (D) Ground Positioning Service

69. The SI unit of viscosity is :

(A) N (B) Pa-s

(C) m/s (D) Kg/m^3

70. Hydrostatic pressure acts :

(A) Only upward (B) Only downward

(C) Equally in all directions (D) Horizontally only

71. An orifice is :

(A) Large opening in a tank (B) Small opening in a tank wall

(C) Pipe fitting only (D) Open channel section

72. Loss of head due to friction in pipes is given by :

(A) Bernoulli's equation (B) Darcy-Weisbach equation

(C) Euler's equation (D) Pascal's law

73. In laminar flow, Reynolds number is :

(A) Less than 2000 (B) 2000-4000

(C) Greater than 4000 (D) 0

74. The hydraulic radius is defined as :

(A) Area × Wetted perimeter (B) Wetted perimeter/Area

(C) Area/Wetted perimeter (D) Diameter/Area

75. The duty of water in irrigation refers to :

(A) Amount of rainfall (B) Area irrigated per unit discharge

(C) Depth of crop root (D) Water pressure in canals

76. Which soil has the highest permeability ?

(A) Clay (B) Silt

(C) Sand (D) Peat

77. Optimum moisture content is the water content at which :

(A) Soil becomes saturated (B) Maximum dry density is achieved

(C) Minimum density occurs (D) Soil loses strength completely

78. If porosity of a soil is 20%, its void ratio is

(A) 0.167 (B) 0.8

(C) 0.4 (D) 0.25

79. The hydraulic head that would produce a quick condition in a sand stratum of thickness $1.5m$, specific gravity 2.67 and void ratio 0.67 is equal to

(A) $1\ m$ (B) $1.5\ m$

(C) $0.5m$ (D) $3\ m$

80. Bearing capacity of soil refers to :

(A) Soil permeability (B) Ability of soil to support loads

(C) Water-holding capacity (D) Soil color

81. Which foundation is suitable for very heavy loads and weak soil ?

(A) Isolated footing (B) Combined footing

(C) Raft foundation (D) Strip footing

82. Sleepers in railway tracks are used to :

(A) Increase train speed (B) Transfer load from rails to ballast

(C) Reduce rail length (D) Provide decoration

83. The stopping sight distance depends upon :

(A) Speed of vehicle (B) Reaction time of driver

(C) Braking efficiency (D) All of the these

84. Bitumen is mainly used in road construction as :

(A) Aggregate (B) Binder

(C) Filler (D) Reinforcement

85. Which test is used to determine the hardness of aggregates ?

(A) Slump test (B) Abrasion test

(C) Impact test (D) Penetration test

86. The super elevation required for a curve of $100m$ radius and a design speed of 50 kmph on a hill road is

(A) $0.11m$ (B) $0.08m$

(C) $0.22m$ (D) $0.30m$

87. Sedimentation in water treatment is used to remove :

(A) Dissolved salts (B) Suspended particles

(C) Bacteria only (D) Odor only

88. The time gap between two successive vehicles is called :

(A) Traffic density (B) Headway

(C) Overtaking distance (D) Running speed

89. Biological Oxygen Demand (BOD) indicates:

(A) Amount of dissolved oxygen required by microorganisms

(B) Acidity of water

(C) Water temperature

(D) Chlorine content

90. Activated sludge process is a :

(A) Physical treatment method (B) Biological treatment method

(C) Chemical treatment method (D) Thermal treatment method

91. Composting is a process of :

(A) Burning waste

(B) Recycling plastics

(C) Biological decomposition of organic waste

(D) Chemical treatment of metals

92. Acid rain is mainly caused by :

(A) Nitrogen and sulfur oxides (B) Carbon dioxide only

(C) Oxygen gas (D) Hydrogen gas

93. Quantity surveying mainly deals with :

(A) Soil testing

(B) Estimation of quantities and costs of construction work

(C) Structural analysis only

(D) Architectural drawing only

94. Which of the following is included in rate analysis ?

(A) Cost of materials (B) Labor charges

(C) Transportation cost (D) All of the these

95. The critical path in a network diagram is the path :

(A) With minimum activities (B) Having maximum float

(C) With longest duration (D) With least cost

96. Limit State Method ensures :

(A) Economy only (B) Safety only

(C) Serviceability only (D) Safety and serviceability

97. A simply supported RCC beam mainly resists :

(A) Torsion only (B) Axial load only

(C) Bending moment and shear force (D) Temperature stress only

98. Slender columns generally fail due to :

(A) Crushing (B) Buckling

(C) Shearing (D) Fatigue

99. Steel structures are preferred because steel has :

(A) Low strength (B) High ductility and strength

(C) Poor work (D) High brittleness

100. Pile foundations are classified as :

(A) Shallow foundations (B) Deep foundations

(C) Surface foundations (D) Mat foundations

SPACE FOR ROUGH WORK (IF REQUIRED)