PUNJAB STATE FEDERATION OF COOPERATIVE SUGAR MILL (LTD.)

POST: ASSTT. ENGINEER (CIVIL)

QUESTION BOOKLET AND ANSWER KEY

SERIES (A)

FOR RECRUITMENT TEST HELD ON 01-03-2026

(MORNING)

1. ‘ਕਣਕ ਨਾਲ ਬੋਰੀ ਭਰੋ’ ਵਾਕ ਵਿਚੋਂ ‘ਕਣਕ’ ਸ਼ਬਦ ਨਾਂਵ ਹੈ। ਇਸਦੀ ਕਿਸਮ ਦੱਸੋ:
A) ਆਮ ਨਾਂਵ B) ਖਾਸ ਨਾਂਵ C) ਵਸਤਵਾਚਕ ਨਾਂਵ D) ਭਾਵਵਾਚਕ ਨਾਂਵ

2. ‘ਔਹ ਕੌਣ ਆ ਰਿਹਾ ਹੈ?’ ਵਾਕ ਵਿੱਚ ‘ਔਹ’ ਸ਼ਬਦ ਪੜਨਾਂਵ ਹੈ। ਇਸਦੀ ਕਿਸਮ ਦੱਸੋ:
A) ਪੁਰਖਵਾਚਕ B) ਨਿਜਵਾਚਕ C) ਨਿਸਚੇਵਾਚਕ D) ਅਨਿਸਚਿਤ ਵਾਚਕ

3. ‘ਮੇਲੇ ਵਿੱਚ ਬਹੁਤ ਲੋਕ ਆਏ’ ਵਾਕ ਵਿੱਚ ‘ਬਹੁਤ’ ਸ਼ਬਦ ਵਿਸ਼ੇਸ਼ਣ ਹੈ। ਇਸਦੀ ਕਿਸਮ ਦੱਸੋ:
A) ਨਿਸਚੇਵਾਚਕ B) ਪਰਿਮਾਣਵਾਚਕ C) ਗੁਣਵਾਚਕ D) ਸੰਖਿਅਕ ਵਾਚਕ

4. ‘ਲੜਕੀ ਬੋਲ ਨਾ ਸਕੀ’ ਇਸ ਵਾਕ ਵਿਚ ਕਿਰਿਆ ਦੀ ਕਿਸਮ ਦੱਸੋ:
A) ਸਕਰਮਕ B) ਅਕਰਮਕ C) ਸੰਸਰਗੀ D) ਪੜਨਾਵੀਂ

5. ਫਿੱਟੇ ਮੂੰਹ ! ਤੂੰ ਤਾਂ ਸਾਰਾ ਕੰਮ ਖਰਾਬ ਕਰ ਦਿੱਤਾ ਇਸ ਵਾਕ ਵਿੱਚ ਵਿਸਮਿਕ ਦੀ ਕਿਸਮ ਪਛਾਣੋਂ:
A) ਸਤਿਕਾਰਵਾਚਕ B) ਸੰਬੋਧਨੀ C) ਫਿਟਕਾਰਵਾਚਕ D) ਅਸੀਸਵਾਚਕ

6. ਮੈਂ ਬਜ਼ਾਰੋਂ ਕਾਪੀਆਂ ਵੀ ਖਰੀਦੀਆਂ ਤੇ ਕਿਤਾਬਾਂ ਵੀ ਖਰੀਦੀਆਂ । ਇਸ ਵਾਕ ਦੀ ਕਿਸਮ ਪਛਾਣੋ:
A) ਸਧਾਰਨ B) ਸੰਯੁਕਤ C) ਮਿਸ਼ਰਤ D) ਨਾਂਹਵਾਚਕ

7. ਸਹੀ ਵਾਕ ਚੁਣੋ:
A) ਮੱਝਾਂ ਚੁਗਦੀ ਹੈ। B) ਮੱਝਾਂ ਚੁਗਦੀ ਹਨ। C) ਮੱਝਾਂ ਚੁਗਦੀਆਂ ਹਨ। D) ਮੱਝਾਂ ਚੁਗਦੇ ਹਨ।

8. ਜਿਹੜੀ ਗੱਲ ਆਪ ਨਾਲ ਬੀਤੀ ਹੋਵੇ। ਇਸ ਵਾਕ ਲਈ ਸਹੀ ਸ਼ਬਦ ਚੁਣੋ:
A) ਜੱਗਬੀਤੀ B) ਪਰਬੀਤੀ C) ਲੋਕਬੀਤੀ D) ਹੱਡਬੀਤੀ

9. ਉਹ ਕੇਵਲ ਗਰੀਬ ਹੀ ਨਹੀਂ ਸਗੋਂ ਦੁਖੀ ਵੀ ਹੈ। ਇਸ ਵਾਕ ਵਿੱਚੋਂ ਯੋਜਕ ਪਛਾਣੋ:
A) ਕੇਵਲ B) ਨਹੀਂ C) ਸਗੋਂ D) ਹੈ

10. ‘ਉਜਾੜ’ ਦਾ ਵਿਰੋਧੀ ਸ਼ਬਦ ਚੁਣੋ:
A) ਰਹਿਤਲ B) ਵਸੇਬਾ C) ਜੰਗਲ D) ਬੀਆਬਾਨ

11. ਸ਼ੁੱਧ ਸ਼ਬਦ ਜੋੜ ਚੁਣੋ:
A) ਛੇਵਾਂ B) ਛੇਮਾਂ C) ਸ਼ੇਮਾਂ D) ਛਿਮਾ

12. ‘ਨਿਰਮਲ’ ਦਾ ਸਮਾਨਾਰਥਕ ਸ਼ਬਦ ਚੁਣੋ:
A) ਮੈਲ B) ਮੈਲਾ C) ਸਾਫ਼ D) ਗੰਧਲਾ

13. ‘ਆਹਰੇ ਲੱਗਣਾ’ ਮੁਹਾਵਰੇ ਦਾ ਸਹੀ ਅਰਥ ਚੁਣੋ:
A) ਛੇੜਨਾ B) ਘੁੰਮਣਾ C) ਕੰਮ ਕਰਨਾ D) ਵਿਹਲਾ ਫਿਰਨਾ

14. ਸ਼ੁੱਧ ਮੁਹਾਵਰਾ ਚੁਣੋ:
A) ਆਹੂ ਲਾਹੁਣੇ B) ਆਹੂ ਚੱਖਣੇ C) ਆਹੂ ਦੇਖਣੇ D) ਆਹੂ ਮਾਰਨੇ

15. ਖਾਣੇ ਛੋਲੇ _____ ਸਹੀ ਸ਼ਬਦ ਚੁਣ ਕੇ ਅਖਾਣ ਪੂਰਾ ਕਰੋ:
A) ਡਕਾਰ ਮੂੰਗਫ਼ਲੀ ਦੇ B) ਡਕਾਰ ਰੋਟੀ ਦੇ C) ਡਕਾਰ ਪਾਣੀ ਦੇ D) ਡਕਾਰ ਬਦਾਮਾਂ ਦੇ

Directions (Q 16 – 17) : Mark the word opposite in meaning to the given word.

16. Parsimonious
A) generous B) angry C) happy D) crude

17. Ameliorate
A) hasten B) expedite C) worsen D) protect

Directions (Q 18 – 19) : Mark the correct synonym to the given word out of four options:

18. Tepid
A) keen B) enthusiastic C) wasteful D) lukewarm

19. Sporadic
A) irregular B) serious C) regular D) continual

Directions (Q 20–21) : Mark the option which best replaces the underlined part of the sentences.

20. <u>When the weather was cold</u>, I wear monkey cap.
A) When the weather has been cold, I wore monkey cap.
B) When weather is cold, I wear monkey cap.
C) While the weather is cold, I wear monkey cap.
D) When weather were cold, I wear monkey cap.

21. <u>Ramesh laid in the shade of a tree</u> before he could walk further.
A) Ramesh has laid in the shade of a tree before he could walk further.
B) Ramesh lay in the shade of a tree before he could walk further.
C) Ramesh lied in the shade of a tree before he could walk further.
D) Ramesh layed in the shade of a tree before he could walk further.

Directions (Q 22 – 23) : Each question has two blanks, each blank indicating that something has been omitted. Mark the word for each blank which best fits the meaning of the sentence as a whole.

22. Despite being _____ in minerals, this state remains one _____ the poorest in the country.
A) rich, of B) dearth, in C) abundant, as D) despondent, for

23. The country's education system still ____ very old-fashioned and is in ____ need of a revamp.
A) languishes, fastidious B) stays, firm C) is, quickly D) remains, urgent

Directions (Q 24 – 25) : Mark the correct form of the sentence in the indirect speech.

24. He said to me, "what are you doing."
A) He told me what are you doing. B) He asked me what I was doing.
C) He asked me what you were doing. D) He told me about what he was doing.

25. He said, "Alas! I am undone."
A) He informed that I was ruined. B) He cried that I was undone.
C) He exclaimed sadly that he was undone. D) He exclaimed that you have been undone.

26. When is Mole Day celebrated?
A) October 13 B) November 13 C) October 23 D) November 23

27. How was University of Roorkee known at the time of India's independence?
A) Elphinstone College of Civil Engineering
B) Fergusson College of Civil Engineering
C) Ripon College of Civil Engineering
D) Thomason College of Civil Engineering

28. How India is ranked in the list of countries with most number of World Heritage sites?
A) 6^{th} B) 7^{th} C) 8^{th} D) 9^{th}

29. Which one of the following statement(s) is(are) true?
(i) Pechora is Surface to Air missile, (ii) OSA-AK is Air to Surface missile
A) Only (i) is true B) Only (ii) is true
C) Both (i) and (ii) are true D) Neither (i) nor (ii) are true

30. In which field has Padam Awardee Onkar Singh Pahwa made his mark?
A) Art B) Literature and Education C) Medicine D) Trade and Industry

31. Who had inaugurated the old Parliament building of India?
A) Lord Curzon B) Lord Irwin C) Lord Mountbatten D) Lord Willingdon

32. Which of the following statement is true?
(i) Part IX deals with Scheduled and Tribal Areas
(ii) Part XI deals with Relation between Union & States
A) Only (i) B) Only (ii) C) Both (i) and (ii) D) Neither (i) nor (ii)

33. In cement production, clay or shale serves as a key source of:
A) silica, alumina, and iron oxide B) calcium oxide, silica and alumina
C) alumina, calcium oxide and iron oxide D) silica, alumina, and calcium oxide

34. Where in China, India has Consulates?
A) Beijing and Tianjin B) Tianjin and Shanghai
C) Shanghai and Guangzhou D) Guangzhou and Tianjin

35. Which of the following is the longest National Highway?
A) NH 11 B) NH 22 C) NH 33 D) NH 44

36. In the question, two pairs of words are given. The words in each of these pairs are associated with each other following some rule. On the basis of the same rule, you have to select one word from the alternatives which could replace sign (?)
Dog : Bitch ; Sheep : Ewe ; Pig:?
A) Porpoise B) Porcupine C) Swine D) Hound

37. In a certain code 'SENSITIVE' is written as 'QHLVGWGYC'. How is 'MICROSOFT' written in that code?
A) KGAPMQMDT B) QKETQUQHV
C) KLAUMVMIR D) LKBTNUNHS

38. In a certain code, 'pick and choose' is written as 'ko ho po' and 'pick up and come' is written as 'to no ko po'. How is 'pick' written in that code ?
A) Ko B) po C) Either ko or po D) cannot be determined

39. In the following question, a number series is given. After the series, a number is given followed by (A), (B), (C), (D) and (E). You have to complete the series starting with the number on the pattern of the sequence of the given series. Then, answer the given questions:
4, 14, 42, 147, 588, 2058, 10290,
8, (A), (B), (C), (D), (E)
Which number will come in place of (C)?
A) 28 B) 1176 C) 294 D) 216

40. Jatin's mother is Ena. Pratap is Bani's father. Sukrit is the son of Garv. Suyog's only sister is married to Garv. Suyog's is Anshum's son. Ena's husband is the only son of Pratap . Anshum is the wife of Pratap. Bani is the mother of Sukrit . How is Pratap related to Jatin?
A) Paternal uncle B) Maternal grandfather C) Father D) Paternal grandfather

41. In a row of 28 students, Jamuna was 12^{th} from the extreme left end and Ganga was 19^{th} from the extreme right end. If Saraswati was seated exactly between them, then what was Saraswati's position from the right end ? Assume that the students were seated facing North.
A) 17^{th} B) 16^{th} C) 20^{th} D) 18^{th}

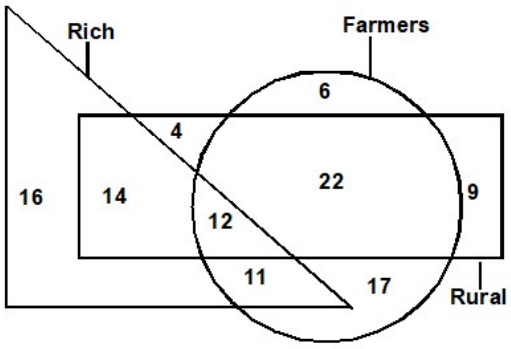
42. Six people are sitting in two parallel rows with 3 people each in such a way that there is equal distance between adjacent persons. S, T and U are seated in the same row facing South. X, Y and Z are seated in the same row facing North. U sits at the extreme right end of their row and is exactly opposite of X. T is the immediate neighbour of U and sits exactly opposite of Z. Who sits at the extreme right end of the row facing North ?
A) Z B) X C) U D) Y

43. By interchanging the given two signs and numbers which of the following equation will be correct?
+ and –, 7 and 6

A) $4 \times 7 + 6 - 3 \div 1 = 20$ B) $8 \times 7 + 5 \div 1 - 6 = 17$
C) $7 - 6 \times 3 + 4 \div 1 = 8$ D) $7 \times 2 - 6 + 4 \div 2 = 13$

44. Nirav's house is 40 mt. South of Akash's house. Daksh's house is to the East of Akash's house in a straight line at a distance of X mt. Prakash's house is to the West of Akash's house in a straight line at a distance of Y mt. if the shortest distance between Prakash's house and Nirav's house is 50 mt. and the shortest distance between Daksh's house and Nirav's house is also 50 mt., then what is the distance between Prakash's house and Daksh's house?
A) 60 mt. B) 30 mt. C) 80 mt. D) 40 mt.

45. In the given diagram, the circle stands for 'farmers', the rectangle stands for 'rural' and the triangle stands for 'rich'. The numbers given in the different segments represent the number of persons of that category. How many rural people are either farmers or rich but not both?



A) 28 B) 36 C) 25 D) 47

46. Documents converted to _____ can be published to the Web.
A) SMTP B) HTML C) HTTP D) DHCP

47. With regard to MS-WORD, to find a word to replace "happiness," use the:
A) Spelling checker. B) Dictionary. C) Autocorrect feature. D) Thesaurus.

48. A realistic term that captures the idea that the information that comes out of a computer system is only as good, accurate, and valid as the data that goes into it is known as:
A) WYSIWYG. B) GIGI. C) GIGO. D) Virtual reality.

49. The term _____ generally means using some combination of text, graphics, animation, video, music, voice, and sound effects to communicate.
A) MIDI B) Hyperlinking C) WYSIWYG D) Multimedia

50. In MS-EXCEL, the formulae used to calculate the sum of values from the cell D1 to D20 is:
A) =sum(D1-D20) B) =sum(D1,D20) C) =sum(D1:D20) D) =sum(D1+D20)

51. _____ are used for manufacturing CPU chips used in a computer and the CPU chip is made out of _____.
A) Buses; Carbon B) Control Units; Copper
C) Semiconductors; Silica D) Optical Fiber Cables; Silver

52. For each instruction of a program in the memory, the CPU goes through a
A) decode - fetch - execute sequence. B) execute - store - decode sequence.
C) fetch - decode - execute sequence. D) fetch - execute - decode sequence.

53. Which of the following is responsible for the management and coordination of activities and the sharing of the resources of the computer?
A) Application Software B) Motherboard C) Operating System D) RAM

54. What does TCP/IP stand for?
A) Transmission Control Protocol/ Internet Protocol
B) Transport Capture Protocol/ Inside Packet
C) Transmission Control Protocol/ Internet Packet
D) Telecommunications Connection Protocol/ Internet Partitions

55. In the context of e-mail, what is 'spam'?
A) The act of overloading an e-mail server by using denial-of-service attacks
B) E-mail messages that are infected with viruses
C) A large quantity of messages that do not reach the recipient
D) Unsolicited advertising sent to a large number of recipients

56. The effective stress friction angle of a saturated, cohesionless soil is 38°. The ratio of shear stress to normal effective stress on the failure plane is
A) 0.616 B) 0.781 C) 0.488 D) 0.425

57. A soil sample has a void ratio of 0.8 and specific gravity of 2.65. Calculate the degree of saturation if the water content is 20%.
A) 60.25% B) 66.25% C) 72.50% D) 78.75%

58. A simply supported beam of 5 m span carries a uniformly distributed load of 15 kN/m. Calculate the maximum deflection if E = 200 GPa and I = 80×10^6 mm⁴.
A) 7.63 mm B) 4.87 mm C) 5.63 mm D) 6.25 mm

59. In a theodolite survey, the included angle between two lines is measured as 60° with a least count of 20". If the number of repetitions is 4, what is the error in angle measurement?
A) 5" B) 10" C) 15" D) 20"

60. A rectangular channel has a width of 3 m and flow depth of 1.5 m. If the bed slope is 1 in 2000 and Manning's n = 0.02, calculate the discharge.
A) 3.68 m³/s B) 4.15 m³/s C) 6.89 m³/s D) 8.23 m³/s

61. A clay layer 4 m thick has a consolidation coefficient of 0.002 cm²/s. Calculate the time required for 90% consolidation if drainage occurs from both sides ($T_v = 0.848$ for U = 90%).
A) 125 days B) 158 days C) 196 days D) 225 days

62. A retaining wall supports a cohesionless backfill with $\varphi = 30°$ and unit weight 18 kN/m³. Calculate the Rankine active earth pressure coefficient.
A) 0.25 B) 0.33 C) 0.50 D) 0.67

63. Coefficient of linear expansion of a solid is α. A cube of volume V of this solid is heated by 1° C. Then change in volume of the cube is
A) Vα B) 3Vα C) 3α D) Vα/3

64. A pile group consists of 4 piles arranged in a square with centre-to-centre spacing of 2 m. Each pile has a diameter of 0.5 m and length of 10 m. Calculate the group efficiency if the single pile capacity is 500 kN and the group capacity is 1800 kN.
A) 0.85 B) 0.90 C) 0.95 D) 1.00

65. A prestressed concrete beam has a cross-sectional area of 50,000 mm² and is subjected to a prestressing force of 1000 kN. Calculate the initial compressive stress in the concrete.
A) 10 MPa B) 15 MPa C) 20 MPa D) 25 MPa

66. If a small concrete cube is submerged deep in still water in such a way that the pressure exerted on all faces of the cube is p, then the maximum shear stress developed inside the cube is
A) p B) p/2 C) 2p D) Zero

67. A simply supported beam of 6 m span carries a point load of 40 kN at 2 m from the left support. Calculate the vertical reaction at the left-hand support.
A) 16.67kN B) 23.33kN C) 32.25kN D) 26.67kN

68. What is the purpose of a slump test in concrete technology?
A) To measure compressive strength B) To measure workability
C) To measure tensile strength D) To measure durability

69. Which of the following is a non-destructive test for concrete?
A) Cube test B) Rebound hammer test
C) Compaction Factor test D) Tensile strength test

70. What is the standard size of a concrete cube used for compressive strength testing in India?
A) 70.6 mm B) 85.6 mm C) 112.5 mm D) 150.0 mm

71. In a levelling survey, the height of instrument is 1.5 m, and the backsight reading to a benchmark of RL 100 m is 1.2 m. Calculate the reduced level of the instrument station.
A) 99.7 m B) 101.2 m C) 102.7 m D) 102.2 m

72. Which instrument is used to measure the liquid limit of soil?
A) Pycnometer B) Casagrande apparatus
C) Hydrometer D) Triaxial testing machine

73. What is the main purpose of a culvert in transportation engineering?
A) To carry vehicles over a river
B) To allow water to pass under a road
C) To support heavy traffic loads
D) To act as a pedestrian bridge

74. What is the primary function of a septic tank in environmental engineering?
A) To treat industrial wastewater B) To collect water seeping into soil
C) To store drinking water D) To treat domestic sewage

75. What is the minimum sight distance required for a two-lane road with a design speed of 80 km/h as per IRC standards?
A) 60 m B) 120 m C) 180 m D) 240 m

76. A soil sample has a permeability of 2×10^{-5} m/s and a cross-sectional area of 0.1 m². Calculate the discharge through the sample under a hydraulic gradient of 0.5.
A) 1.0×10^{-6} m³/s B) 1.5×10^{-6} m³/s
C) 2.0×10^{-6} m³/s D) 2.5×10^{-6} m³/s

77. A fixed beam of 8 m span carries a uniformly distributed load of 10 kN/m and a point load of 12 kN at the mid-span. The fixed end moment at one of the supports will be
A) 65.33kN-m B) 53.33kN-m C) 48.67kN-m D) 76.67kN-m

78. Consider the following statements:
I. If a beam has two axes of symmetry, even then shear-centre does not coincide with the centroid.
II. For a section having one axis of symmetry, the shear-centre does not coincide with the centroid but lies on the axis of symmetry.
III. If a load passes through the shear-centre, then there will be only bending in the cross-section and no twisting.
Which of these statements are correct?
A) I, II and III B) I and II C) II and III D) I and III

79. The angle of internal friction is highest for which type of soil?
A) Clay B) Silt C) Sand D) Peat

80. What is the purpose of a camber in road design?
A) To increase road width B) To facilitate drainage
C) To improve aesthetics D) To reduce vehicle speed

81. In a triaxial shear test, the failure plane occurs at an angle of:
A) $45° + \varphi/2$ B) $45° - \varphi/2$ C) φ D) $90° - \varphi$

82. What is the primary purpose of a retaining wall?
A) To support a building B) To resist lateral earth pressure
C) To act as a water barrier D) To provide thermal insulation

83. Which of the following is a method for wastewater treatment?
A) Activated sludge process B) Reverse osmosis
C) Distillation D) Ion exchange

84. What is the minimum clear cover for a slab as per IS 456:2000?
A) 15 mm B) 20 mm C) 25 mm D) 30 mm

85. In traffic engineering, the term 'PCU' stands for:
A) Passenger Car Unit B) Public Commute Unit
C) Peak Capacity Unit D) Pedestrian Control Unit

86. In a water treatment plant, the purpose of coagulation is to:
A) Remove dissolved salts B) Destabilize colloidal particles
C) Kill pathogens D) Adjust pH levels

87. The unit load method used in structural analysis is
A) applicable only to statically indeterminate structures.
B) another name for stiffness method.
C) an extension of Maxwell's reciprocal theorem.
D) derived from Castigliano's theorem.

88. In a compass survey, the magnetic bearing of a line is N30°E, and the magnetic declinationis 5°E. Calculate the true bearing of the line.
A) N25°E B) N35°E C) N30°E D) N40°E

89. In a community of 1500 people water is supplied at 200 L/head/day. If BOD produced is 40 g/head/day and BOD loading rate for oxidation pond is 20 kg/ha/day. Assuming the depth of pond, d = 2 m and efficiency of pond = 80%, the BOD of the effluent will be
A) 100 mg/L B) 150 mg/L C) 75 mg/L D) 50 mg/L

90. The superelevation required for a highway curve of radius 200 m at a design speed of 80 km/h is (assume coefficient of friction f = 0.15, g = 9.81 m/s²):
A) 0.061 B) 0.101 C) 0.075 D) 0.121

91. Calculate the ultimate bearing capacity of a square footing of width 2 m resting on a cohesionless soil with a unit weight of 18 kN/m³, angle of internal friction of 30°, and depth of 1 m. Use Terzaghi's bearing capacity factors: $N_c = 37.2$, $N_q = 22.5$, and $N_\gamma = 19.7$.
A) 440.5 kN/m² B) 675.3 kN/m² C) 810.9 kN/m² D) 759.6 kN/m²

92. A cantilever beam of 3 m length carries a point load of 20 kN at its free end. If E = 200 GPa and $I = 40 \times 10^6$ mm⁴, calculate the deflection at the free end.
A) 45.3 mm B) 22.5 mm C) 60.0 mm D) 21.6 mm

93. Determine the critical hydraulic gradient for a soil with a specific gravity of 2.65 and void ratio of 0.6.
A) 0.85 B) 1.00 C) 1.15 D) 1.25

94. A column of length 4 m is fixed at both ends. Calculate the Euler's bucklingload if E =200 GPa and $I = 2 \times 10^6$ mm⁴.
A) 986kN B) 493 kN C) 740kN D) 525kN

95. During the process of hydration of cement, due to increase in Dicalcium Silicate (C2S) content in cement clinker, the heat of hydration
A) increases B) initially increases and then decreases
C) decreases D) does not change

96. The shear stress at the neutral axis in a beam of triangular section with a base of 40 mm and height 20 mm, subjected to a shear force of 3 kN is
A) 3 MPa B) 6 MPa C) 10 MPa D) 20 MPa

97. A soil sample has a dry unit weight of 16 kN/m³ and a water content of 10%. Calculate the saturated unit weight if the specific gravity is 2.7.
A) 17.63kN/m³ B) 16.52kN/m³ C) 21.72kN/m³ D) 19.88kN/m³

98. Soil has been compacted in an embankment at a bulk density of 2150 kg/m3 and a water content of 12%. The value of specified gravity of soil solids is 2.65. The water table is well below the foundation level. The void ratio of the compacted soil is
A) 0.42 B) 0.35 C) 0.25 D) 0.56.

99. Calculate the consolidation settlement of a clay layer 3 m thick with a compression index of 0.3, initial void ratio of 1.0, and an increase in effective stress of 100 kPa. Initial effective stress is 50 kPa.
A) 165.2 mm B) 178.6 mm C) 214.7 mm D) 208.7 mm

100. A trickling filter has a diameter of 20 m and a depth of 2 m. If the hydraulic loading rate is 4 m³/m²/day, calculate the daily flow rate.
A) 1256 m³/day B) 1571 m³/day C) 1885 m³/day D) 2199 m³/day

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Answer key (05) ASSTT. ENGINEER (CIVIL)

Q.No.	Ans	Q.No.	Ans	Q.No.	Ans	Q.No.	Ans
1	**C**	26	**C**	51	**C**	76	**A**
2	**C**	27	**D**	52	**C**	77	**A**
3	**D**	28	**A**	53	**C**	78	**C**
4	**B**	29	**A**	54	**A**	79	**C**
5	**C**	30	**D**	55	**D**	80	**B**
6	**B**	31	**B**	56	**B**	81	**A**
7	**C**	32	**B**	57	**B**	82	**B**
8	**D**	33	**A**	58	**A**	83	**A**
9	**C**	34	**C**	59	**D**	84	**B**
10	**B**	35	**D**	60	**B**	85	**A**
11	**A**	36	**C**	61	**C**	86	**B**
12	**C**	37	**C**	62	**B**	87	**D**
13	**C**	38	**C**	63	**B**	88	**B**
14	**A**	39	**C**	64	**B**	89	**D**
15	**D**	40	**D**	65	**C**	90	**B**
16	**A**	41	**D**	66	**D**	91	**D**
17	**C**	42	**D**	67	**D**	92	**B**
18	**D**	43	**A**	68	**B**	93	**B**
19	**A**	44	**A**	69	**B**	94	**A**
20	**B**	45	**B**	70	**D**	95	**C**
21	**B**	46	**B**	71	**A**	96	**C**
22	**A**	47	**D**	72	**B**	97	**D**
23	**D**	48	**C**	73	**B**	98	**B**
24	**B**	49	**D**	74	**D**	99	**C**
25	**C**	50	**C**	75	**B**	100	**A**