Test Booklet Code: A

ENTRANCE TEST FOR CEJ

Marks: 100 **Time: 120 minutes**

ROLL NO.:_____ **NAME:** _____

SIGNATURE: _____ **DATE/TIME:** _____

INSTRUCTIONS FOR THE CANDIDATES

1 Do not open this booklet unless you are instructed to do so.

2 Before attempting the paper, carefully read out all the Instructions and Examples given on Side 1 of the Answer Sheet (OMR Sheet) supplied separately.

3 At the start of the examination, please ensure that all the pages of your Test booklet are properly printed; your Test booklet is not damaged in any manner and contains 100 questions. In case of any discrepancy, the candidate should immediately report the matter to the invigilator for replacement of Test booklet. No claim in this regard will be entertained at the later stage.

4 An **OMR Answer Sheet** is being provided separately along with this Test booklet. Please fill up all relevant entries like Roll Number, Test Booklet Code etc. in the spaces provided on the OMR Answer Sheet and put your signatures in the box provided for this purpose.

5 Make sure to fill the correct Test Booklet code on Side 2 of the OMR Answer Sheet. If the space for the Booklet Code is left blank or more than one booklet code is indicated therein, it will be deemed to be an incorrect booklet code & Answer Sheet will not be evaluated. The candidate himself/herself will be solely responsible for all the consequences arising out of any error or omission in writing the test booklet code.

6 **The Test Booklet consists of fourteen (14) pages containing 100 questions.** Against each question four alternatives A, B, C, D are given, out of which only one is correct. Indicate your choice of answer by darkening suitable circle with **BLACK/BLUE pen** in the OMR Answer Sheet supplied to you separately. Use of Pencil is strictly prohibited. More than one answer indicated against a question will be deemed as incorrect response.

7 The maximum marks are 100. Each question carries one mark. **There will be negative marking and each wrong answer will carry minus one by four (1/4) mark. The total time allocated is 120 minutes.**

8 Do not fold or make any stray marks on the OMR Answer Sheet. Any stray mark or smudge on the OMR sheet may be taken as wrong answer. Any damage to OMR Answer Sheet may result in disqualification of the candidate.

9 **On completion of the test, candidate must hand over the OMR Answer sheet to the invigilator on duty in the room/hall.**

10 **Carrying mobile phones, any electronic gadgets and calculators etc. is not allowed.**

11 **Keep all your belongings outside the examination hall. Do not retain any paper except the ADMIT CARD, prior to entry into the Examination Hall.**

1. Which one amongst the following books has NOT been authored by the famous Indian writer Shashi Tharoor?
   A) The Great Indian Novel
   B) Why I am a Hindu
   C) Sacred Games
   D) Bookless in Baghdad
2. Who amongst the following called Bal Gangadhar Tilak as the 'Father of Indian Unrest'?
   A) Valentine Chirol
   B) Lord Disraeli
   C) Lord Minto II
   D) Lord Chelmsford
3. Who amongst the following is the present Chief Minister of the Indian State of Uttarakhand?
   A) Harish Rawat
   B) Trivendra Singh Rawat
   C) N. Biren Singh
   D) Prakash Pant
4. Which one amongst the following has been honoured with the Best Actor in a Leading Role (Male) award at the 90th Oscars Award ceremony held in March 2018?
   A) Daniel Day Lewis
   B) Denzel Washington
   C) Gary Oldman
   D) Timothy Chalamet
5. The birth anniversary of which one of the following luminaries is observed as the 'National Education Day' in India?
   A) Sarvepalli Radhakrishan
   B) Maulana Abul Kalam Azad
   C) Jawahar Lal Nehru
   D) Maharishi Dayanand Saraswati
6. Which unique app has been launched by the Election Commission of India (ECI) for people to report model code of conduct violations?
   A) cVigil
   B) pVigil
   C) eVigil
   D) mVigil
7. With which one of the following sports is the famous sportsman *Ian Thorpe* associated?
   A) Athletics
   B) Swimming
   C) Boxing
   D) Tennis
8. Which one amongst the following Sikh Gurus is known as '*Hind Di Chadar*'?
   A) Guru Nanak Dev Ji
   B) Guru Ram Dass Ji
   C) Guru Arjan Dev Ji
   D) Guru Tegh Bahadur Ji
9. In which one of the following states is the Pakhui Wildlife Sanctuary located?
   A) Arunachal Pradesh
   B) Manipur
   C) Meghalaya
   D) Nagaland
10. Which one amongst the following is the first Indian cricketer to score a century in the Indian Premier League (IPL)?
    A) Gautam Gambhir
    B) Manish Pandey
    C) Suresh Raina
    D) Yusuf Pathan
11. Every month Rajesh consumes 25 kg of rice and 9 kg wheat. The price of rice is 20% of the price of wheat and thus he spends total Rs.350 on the rice and wheat per month. If the price of wheat is increased by 20%, then what is the percentage reduction in rice consumption for the same expenditure of Rs.350, considering that the price of rice and consumption of wheat is constant?
    A) 24%
    B) 25%
    C) 36%
    D) 40%
12. If $5x + \frac{1}{3x} = 5$, then what would be the value of $9x^2 + \frac{1}{25x^2}$?
    A) 29/5
    B) 39/5
    C) 51/5
    D) 52/5

13. The duration of a railway journey varies directly as the distance and inversely as the velocity. The velocity varies directly as the square root of the quantity of the coal used and inversely as the number of carriages in the train. If in a journey of 50 km in half an hour with 18 carriages, 100 kg of coal is required, then how much coal would be consumed in a journey of 42 km in 28 minutes with 16 carriages?

A) 25 kg
B) 36 kg
C) 49 kg
D) 64 kg

14. Working together *B* and *C* take 50% more number of days than *A, B,* and *C* together take, whereas, *A* and *B* working together take 8/3 more number of days than *A, B,* and *C* take together. If *A, B,* and *C* all have worked together till the completion of the work and *B* has received Rs.120 out of the total earning of Rs.450, then in how many days did *A, B,* and *C* together complete the whole work?

A) 10
B) 6
C) 4
D) 2

15. In Hotel Ritz the rooms are numbered from 101 to 130 on the first floor, 221 to 260 on the second floor and 306 to 345 on the third floor, with no room on the ground floor. In the month of June 2018, the room occupancy was 60% on the first floor, 40% on the second floor and 75% on the third floor. If it is also known that the room charges are Rs.200, Rs.100 and Rs.150 for each of the floors, starting from first floor to third floor, respectively, then what is the average income per room (in Rs.) for the month of June 2018?

A) 65.70
B) 78.30
C) 88.18
D) 151.50

16. The cost of typing all the pages of a magazine is Rs.1000, the cost of running the printing machine is Rs.120 per 100 copies of magazine, whereas, the cost of paper, ink etc.is 60 paisa per copy of the magazine. The magazines are sold at Rs.2.75 each. A total of 900 copies of the magazine are printed, out of which only 784 copies are sold. In order to get a profit of 10% on the cost price of the printed magazines, what amount (in Rs.) should be obtained from advertisements?

A) 720
B) 726
C) 730
D) 736

17. *'ELATED'* is related to *'DESPONDENT'* in the same way as *'ENLIGHTENED'* is related to _____.

A) AWARE
B) IGNORANT
C) MISERABLE
D) TOLERANT

18. Rahil starts from a point *A* and travels 3 km Eastward to *B* and then turns left and travels thrice that distance to reach *C*. He again turns left and travels five times the distance he covered between *A* and *B* and reaches his destination *D*. What would be the shortest distance between the starting point and destination *D*?

A) 12 km
B) 15 km
C) 16 km
D) 18 km

19. In a certain code language *'sun shines brightly'* is written as *'ba lo sul'*, *'houses are brightly lit'* is written as *'kado ula ari ba'* and *'light comes from sun'* is written as *'dopi kup lo nro'*. What code words are written for *'sun'* and *'brightly'*, respectively?

A) ba, sul
B) sul, lo
C) lo, ba
D) ba, lo

20. A man from the top of a 100m high tower sees a car moving towards the tower at an angle of depression of 30^0. After sometime, the angle of depression becomes 60^0. What would be the distance (in metres) travelled by the car during this time when the angle of depression changed from 30^0 to 60^0?

A) $100\sqrt{3}$
B) $\frac{200}{\sqrt{3}}$
C) $\frac{100}{\sqrt{3}}$
D) $200\sqrt{3}$

21. Which of the following are components of the Central Processing Unit (CPU) of a computer?

A) ALU, Mouse
B) ALU, Keyboard
C) CU, ALU
D) CU, Monitor

22. Which of the following is NOT a paragraph formatting?

A) Alignment
B) Indenting
C) Margins
D) Boldface

23. What is defined as a Macro, in context of MS Office applications?

A) Small add-on programs that are installed afterwards in MS PowerPoint, if needed
B) Type of high level programming language used for MS Excel
C) Type of low level programming language used in MS Word
D) Small programs created in MS-Word to automate repetitive tasks by using VBA

24. When MS-Word automatically moves the text to the next line after it has reached the right edge of the screen, what is this called?

A) Carriage Return
B) Enter
C) Word Wrap
D) Right Justified

25. When all the even numbers within range 0 to 100, are to be displayed in red colour, which one of the following is the **most suitable option** to achieve the same?

A) Use if() function to format
B) Apply conditional formatting command
C) Select the cells that contain even numbers and change font colour to red
D) Select the cell that contain even numbers and use paint fill function to change colour

26. Which one amongst the following is a valid IP address, that can be allocated to a machine?

A) 192.168.1.0/24
B) 127.0.0.1
C) 255.256.0.0
D) 192.168.1.1/24

27. The accounting style in MS Office applications shows negative numbers in _____.

A) Bold
B) Italics
C) Parentheses
D) Quotes

28. What lets you create a new PowerPoint presentation by selecting ready-made font colour and graphics?

A) Presentation template
B) Master Slide
C) Design template
D) Animation scheme

29. VLOOKUP function in MS Excel is used to _____.

A) find related records
B) look up text that contains "v"
C) looks up text that contains "V"
D) check if the two cells are identical

30. Which protocol facilitates emailing facility between different hosts?

A) FTP
B) HTTP
C) SMTP
D) SNMP

31. Two horizontal plates are placed in parallel keeping 2.0 cm apart. If the space between the plates is filled with an oil of viscosity 10 poise, then what would be the shear stress in oil if upper plate is moved with a velocity of 3.0 m/s?

A) 50 N/m²
B) 100 N/m²
C) 150 N/m²
D) 200 N/m²

32. An isosceles triangular plate of base 3 m and altitude of 6 m is immersed in water vertically, wherein the base of the plate coincides with the free surface of water. In such a case scenario, what would be the total pressure on one face of the triangular plate?

A) 26.58 kN
B) 76.58 kN
C) 126.58 kN
D) 176.58 kN

33. An orifice of diameter 1 cm is fitted at the bottom of the tank. The theoretical discharge calculated through the orifice is 0.15 m³/sec when the tank is full with water. The water coming out from the orifice is collected in a rectangular tank of size 2 m x 2 m. If the rise of water level in this tank is 1 m in 40 seconds, then what would be the coefficient of discharge?

A) 0.42
B) 0.66
C) 0.96
D) 1.0

34. A main pipe divides into two parallel pipes. The length (l_1) and diameter (d_1) of first parallel pipe is 1000 m and 1.0 m, respectively whereas, the length (l_2) and diameter (d_2) of second parallel pipe is 1000 m and 0.5 m, respectively. What would be the ratio of velocity of flow (v_1/v_2) if the friction factor for both the pipes is the same?

A) 0.5
B) 1.0
C) 1.414
D) 2.0

35. Water is flowing in a rectangular channel with a width of 8 m and having a bed slope of 1 in 3200. What would be the maximum discharge (m³/s) in the channel if the Chezy's constant is 50?

A) 10
B) 20
C) 30
D) 40

36. Water is flowing through a pipe, which is converging gradually from a diameter of 20 cm to a diameter of 10 cm. If the velocity at the 20 cm diameter section is 5 m/s, then what would be the velocity head (in metres) at 20 cm diameter section?

A) 1.27
B) 5.0
C) 12.7
D) 25.48

37. Which one out of the following is NOT the function of the berm in the canal?

A) Berm gives additional strength to the banks and provides protection against erosion.
B) Berm can provide a scope for future widening of canal
C) Berm cannot be used as a borrow pit for excavating the soil to be used for filling
D) Provision of berm in canal brings the saturation line more in the body of the embankment

38. What would be the sensitivity of a non-flexible module?

A) 0
B) 1
C) 2
D) 3

39. In which one of the following irrigation methods, the loss of water due to evaporation is negligible?

A) Furrow irrigation
B) Sprinkler irrigation
C) Drip irrigation
D) Border irrigation

40. Which one of the following population forecasting method of a city or town assumes the rate of change of population with time as constant?
    A) Logistic curve method
    B) Master plan method
    C) Arithmetic increase method
    D) Geometric increase method

41. Which one of the following methods can measure the chloride content in water?
    A) Titrating the water with silver nitrate solution using potassium chromate as indicator
    B) Titrating the water with ammonium nitrate solution using potassium chromate as indicator
    C) Titrating the water with sodium thiosulphate solution using potassium chromate as indicator
    D) Titrating the water with potassium dichromate solution using potassium chromate as indicator

42. Which one of the following is NOT correct with respect to the under-drainage system in a slow sand filter?
    A) The under-drainage system in slow sand filter consists of central drain and lateral drain
    B) The lateral drains of under-drainage system in slow sand filter collect the filtered water and discharge it into main drain
    C) The under-drainage system in slow sand filter allow the backwashing for cleaning of filter
    D) The under-drainage system in slow sand filter is provided to receive and deliver the filtered water

43. Which one of the following chemical can be used for coagulation?
    A) Ferrous sulphate
    B) Sodium chloride
    C) Potassium sulphate
    D) Potassium chloride

44. Which one of the following test is used to determine the amount of residual chlorine left in the chlorinated water?
    A) Sodium-iodide test
    B) Starch-Iodide test
    C) Potassium-bromide test
    D) Lime test

45. In which one of the following water distribution system, the distribution area is divided into rectangular or circular blocks and the main water pipes are laid on the periphery of these blocks?
    A) Dead end system
    B) Tree system
    C) Grid iron system
    D) Ring system

46. Which one of the following is NOT a physical characteristic of the sewage?
    A) Temperature of sewage
    B) Turbidity of sewage
    C) pH of sewage
    D) Odour of sewage

47. Which one of the following is NOT a favourable condition for disposal of sewage by dilution method?
    A) When the diluting water has low dissolved oxygen content
    B) When the downstream point of the sewage disposal of diluting water is not used for water supply
    C) When the diluting water is not used for the purpose of navigation
    D) When the sewage is fresh and free from floating and settleable solids.

48. Which one of the following trap is provided at the junction of a house sewer and municipal sewer?
    A) Floor trap
    B) Nahni trap
    C) Gully trap
    D) Intercepting trap

49. Which one of the following treatment unit has, approximately, a detention period of 2 hours?
A) Grit chamber
B) Primary sedimentation
C) Activated sludge
D) Sludge digestion

50. Which one of the following is NOT the part of a manhole?
A) Access shaft
B) Benching
C) Ladders
D) Gullies

51. Which one of the following project does NOT require an EIA study as per the guidelines issued by the Government of India, Ministry of Environment, Forest and Climate Change?
A) Large scale Industrial Plant
B) Dams and Reservoirs
C) Community Garden Development
D) Thermal and Hydropower Development

52. Which one of the following is an expression of the intensity of the sound wave?
A) Intensity of sound wave is the ratio of power of sound wave to a unit area perpendicular to the direction of wave motion
B) Intensity of sound wave is the ratio of a unit area perpendicular to the direction of wave motion to power of sound wave
C) Intensity of sound wave is the multiplication of power of sound wave and a unit area perpendicular to the direction of wave motion
D) Intensity of sound wave is the multiplication of power of sound wave and a unit area parallel to the direction of wave motion

53. To determine the tachometric constants *K* and *C*, the instrument was set up at a point. Distances of 30 m and 60 m were measured at stations P and Q, respectively. The readings of the stadia hair, while the staff is at station P, are 1.130, 1.280, 1.430 and when the staff is at station Q are 1.025, 1.325, 1.620. In the case scenario as above, what would be the values of constants *K* and *C*, respectively?
A) 100.005 and 0.51
B) 101.065 and -0.05
C) 101.695 and 0.51
D) 101.695 and -0.51

54. The three-point problem in plane tabling involves _____.
A) determining positions of the three points in the field
B) locating the stations occupied by the plane table in the sheet with positions of three points in the field
C) locating the positions of two points in the field with one fixed point
D) surveying any area with three points

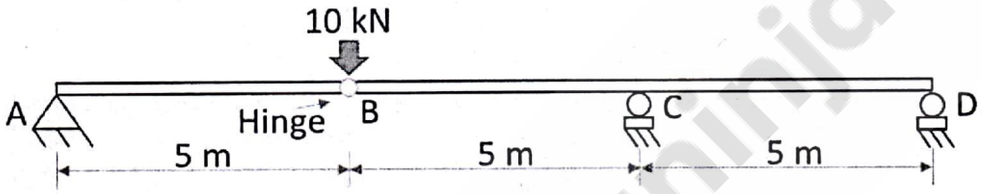
55. The three consecutive readings taken with a level instrument are 1.325m, 0.985 m, and 2.546 m. If the instrument was shifted after the first reading, then what would be the rise or fall of the last point?
A) 1.561 m, rise
B) 1.221 m, rise
C) 1.221 m, fall
D) 1.561 m, fall

56. In setting out of curve by deflection angle, what is the general rule of deflection angle of a chord?
A) Deflection angle= 1718.9 x chord length x radius
B) Deflection angle = 2 x tangential angle
C) Deflection angle = tangential angle
D) Deflection angle = deflection angle of the previous chord + tangential angle of the present chord

57. Bowditch rule is applicable _____.
   A) where linear measurements are more precise than angular measurement
   B) where linear and angular measurements are of equal precision
   C) where angular measurements are more precise than linear measurement
   D) in all cases of traverse adjustments

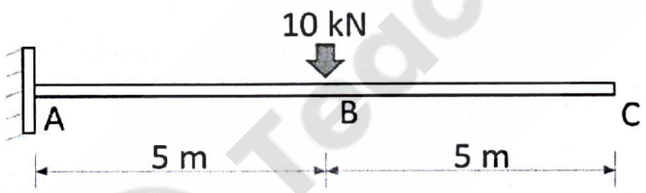
58. Identify the correct order in which the points appear in the stress-strain diagram for mild steel?
   A) Elastic limit, Limit of proportionality, Upper yield point, Ultimate stress point, Fracture point
   B) Limit of proportionality, Elastic limit, Upper yield point, Ultimate stress point, Fracture point
   C) Limit of proportionality, Upper yield point, Elastic limit, Ultimate stress point, Fracture point
   D) Elastic limit, Limit of proportionality, Upper yield point, Fracture point, Ultimate stress point

59. What would be the vertical reaction at the roller support point C in the continuous beam loaded and supported as shown below?



   A) 10 kN (upward)
   B) 10 kN (downward)
   C) 20 kN (upward)
   D) 20 kN (downward)

60. Given that for the cantilever beam ABC, loaded and supported as shown in the figure below, if EI is constant, then what would be the rotation of point B and point C? Given that there is a point load of 10kN acting at point B. AB = BC = 5m.



   A) θ_B = 125/EI (clockwise), θ_c = 125/EI (clockwise)
   B) θ_B = 125/EI (clockwise), θ_c = 62.5/EI (clockwise)
   C) θ_B = 62.5/EI (clockwise), θ_c = 125/EI (clockwise)
   D) θ_B = 125/EI (clockwise), θ_c = 0

61. If the depth of a beam is kept same and the width is doubled then what would be the ratio of the new section modulus to the old section modulus?
   A) 0.5
   B) 1
   C) 2
   D) 4

62. As per IS:456:2000, in the case of High Strength Deformed bars, the minimum reinforcement in either direction in a RCC slab shall not be less than _____.

A) 0.25% of the total cross-sectional area
B) 0.20% of the total cross-sectional area
C) 0.15% of the total cross-sectional area
D) 0.12% of the total cross-sectional area

63. As per IS:456:2000, in the limit state design of a flexural member, the strain in reinforcing bars under tension at ultimate state should not be less than _____, where f_y and E_s have usual meaning.
A) f_y / E_s
B) $f_y / (1.15E_s)$
C) $0.002 + f_y / E_s$
D) $0.002 + f_y / (1.15E_s)$

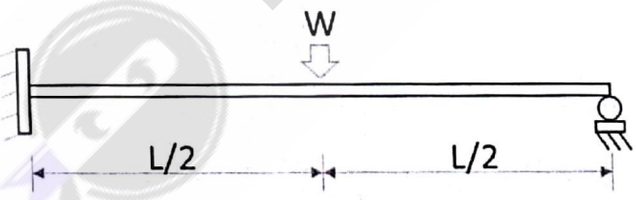
64. Two steel columns P (length L and yield strength f_y = 250 MPa) and Q (length $2L$ and yield strength f_y = 500 MPa) have the same cross-sectional area and similar support end-conditions. In such a case scenario, what would the ratio of Euler's buckling load of column P to that of column Q?
A) 0.50
B) 1.00
C) 2.00
D) 4.00

65. Which one of the following is categorised as a long-term loss of prestress in a prestressed concrete member?
A) Loss due to elastic shortening
B) Loss due to friction
C) Creep and shrinkage of concrete
D) Loss due to anchorage slip

66. As per IS:800:2007, the cross-section in which the extreme fibre can reach the yield stress, but cannot develop the plastic moment of resistance due to failure by local buckling is classified as a _____.
A) plastic section
B) compact section
C) semi-compact section
D) slender section

67. In a steel plate with bolted connections, the rupture of the net section is a mode of failure under which one of the following?
A) Tension
B) Compression
C) Flexure
D) Shear

68. Given that the plastic moment capacity of the beam, loaded and supported as shown in the figure below, is M_P, then what would be the value of W (a point load acting at a distance of L/2 from the fixed support) that results in the collapse of the beam?



A) $2 (M_p / L)$
B) $3 (M_p / L)$
C) $6 (M_p / L)$
D) $12 (M_p / L)$

69. As per IS:1077:1992, what is the minimum acceptable compressive strength of any class of burnt clay bricks in dry state?
A) 10 MPa
B) 7.5 MPa
C) 5 MPa
D) 3.5 MPa

70. Match list 1 and 2 and select the correct answer

List 1 (Type of cement)

(A) Portland Pozzolana Cements
(B) Portland Slag Cement
(C) Low Heat Portland Cement
(D) Rapid Hardening Portland Cement

List 2 (Property/characteristics)

1. Low rate of heat of hydration
2. Sulphate resistant
3. Has a lower content of C_3S and C_3A
4. Has a higher content of tricalcium C_3S

A) A-1, B-2, C-1, D-4
B) A-1, B-3, C-4, D-4
C) A-3, B-2, C-1, D-3
D) A-3, B-3, C-4, D-3

71. In which one of the following direction, strength of timber is the maximum?
A) Perpendicular to grains
B) Parallel to grains
C) 45 degrees to grains
D) Same in all directions

72. Which of the following pairs is correctly matched?
A) Sandstone – Igneous rock
B) Basalt – Metamorphic rock
C) Limestone – Sedimentary rock
D) Granite – argillaceous rock

73. Le Chatelier's device is used to determine which one of the following property of cement?
A) Soundness
B) Tensile strength
C) Setting times
D) Compressive strength

74. In the design of flexible pavements as per IRC:37-2012 guidelines, with every load repetition horizontal tensile strain developed at the bottom of the bituminous layer is indicative of which one of the followings?
A) Fatigue cracking in bituminous layers
B) Rutting in the subgrade layer
C) Rutting in wet mix macadam layer
D) Fatigue cracking in the wet mix macadam layer

75. Equivalent number of standard axles per commercial vehicle is known as _____.
A) Lane distribution factor
B) Vehicle damage factor
C) Passenger Car Unit
D) Rate of growth factor

76. What would be the minimum Stopping Sight Distance (SSD) in meters on a highway at a descending gradient of 2% for a design speed of 80kmph?
Given: Reaction time of driver as 2.5 sec & coefficient of longitudinal friction (f) as 0.35.
A) 48
B) 85
C) 110
D) 132

77. As per IRC:58-2015 guidelines for the design of plain jointed cement concrete pavements; what would be the number of allowable fatigue repetitions for a stress ratio corresponding to 0.30 using M40 grade of concrete having minimum flexural strength of 4.5 MPa?
A) Zero
B) 300000
C) 400000
D) Infinite

78. Pavement Quality Concrete (PQC) slab is designed for a slab thickness of 300 mm. The transverse contraction joints are provided with dowels bars after every 4.5 m. What is the recommended depth (from top of the slab) at which the dowel bars should be positioned in the PQC slab as per IRC:15-2011 guidelines?

A) 25 mm
B) 50 mm
C) 100 mm
D) 150 mm

79. What would be the number of sleepers required for the construction of 1000 m long Broad-Gauge railway track adopting the sleeper density of M+5, where M is the single rail length taken as 13m?
A) 250
B) 450
C) 1385
D) 1800

80. In points & crossings, Stock rails are fitted against which one of the following rails?
A) Point rail
B) Check rail
C) Tongue rail
D) Splice rail

81. What would be the value of curve lead (in meters) for a 1 in 8.5 turnout, taking off from a straight broad-gauge track?
A) 15.5
B) 21.5
C) 28.5
D) 35.5

82. If for a given activity, the optimistic time, pessimistic time and the most likely time estimates are 7, 13, 10 days, respectively, then what would be the expected time in PERT analysis?
A) 8 days
B) 9 days
C) 10 days
D) 15 days

83. In long and short wall method of estimation, the length of long wall is the addition of the centre to centre distance between the walls and _____of the breadth of the wall on each side.
A) one-half
B) one-fourth
C) one-eighth
D) one-sixteenth

84. In time-cost optimization of a project using CPM networks, the total direct cost of the project is calculated for _____ of the project
A) all the activities
B) all activities along the critical path
C) the non-critical activities
D) all the events

85. As per IRC:81-1997 guidelines the interval between the two readings, in the Benkelman Beam Deflection studies, should not be more than _____.
A) 10 m
B) 20 m
C) 50 m
D) 75 m

86. Which one of the following compound helps in obtaining early strength of cement concrete?
A) Tri-calcium silicate
B) Di-calcium silicate
C) Tri-calcium aluminate
D) Tetra calcium alumina ferrite

87. The most commonly used admixture which prolongs the setting and hardening time is _____.
A) Gypsum
B) Calcium chloride
C) Sodium silicate
D) Calcium Nitrate

88. According to Indian standards, IS:383-1970, the grading of fine aggregates is divided into how many zones?
A) Two
B) Three
C) Four
D) Five

89. The property of fresh concrete, in which the water in the mix tends to rise to the surface while placing and compacting, is called _____.
A) segregation
B) bleeding
C) bulking
D) creep

90. The modules of rupture of concrete is a measure of which one of the following property?
A) Flexural tensile strength
B) Direct tensile strength
C) Compressive strength
D) Split tensile strength

91. As per the IRC guidelines, Benkelman beam readings are used for the design of which one of the following?
    A) Bituminous mixes
    B) Overlay thickness for existing highway
    C) Granular mixes
    D) Pavement crust for new highway

92. In context of Civil Engineering Construction Projects, what does the term EPC contract stands for?
    A) Engineering Procurement and Construction
    B) Engineering Planning and Construction
    C) Engineering Procurement and Control
    D) Engineering Planning and Commissioning

93. As per IS:73 (2013) guidelines, the grading of bitumen samples should be done based upon which one of the following value?
    A) Viscosity value
    B) Ductility value
    C) Flow value
    D) Stability Value

94. What would be void ratio of soil if dry unit weight of soil and specific gravity of soil solid are 14.5 kN/m^3 and 2.68, respectively?
    A) 0.513
    B) 0.613
    C) 0.713
    D) 0.813

95. A cylindrical soil sample of 5 cm diameter and 10 cm long is tested in a constant head permeability apparatus. A constant head of 60 cm is maintained during the test. After 100 seconds of testing a total volume of 1000 cm^3 of water was collected. The experiment was conducted at 20^0C. What would be the coefficient of permeability of soil in cm/sec?
    A) 0.014
    B) 0.084
    C) 0.84
    D) 1.0

96. If the void ratio of a soil sample is 0.7 what will be the porosity of the soil?
    A) 0.21
    B) 0.31
    C) 0.41
    D) 0.51

97. The customized plain scales in an engineering drawing are used to measure which one of the following?
    A) Two consecutive units
    B) Three consecutive units
    C) One unit
    D) Fraction of a main scale division

98. As per first-angle projection, the appearance of the right-side surface of the object is drawn_____.
    A) on the right-side of the front view
    B) on the left-side of the front view
    C) on the top of the front view
    D) below the front view

99. Which one of the following certification provides a framework for environmental management best practices to help organisations achieve their goals which may include reduction in carbon foot-print, reduction in pollution risks etc?
    A) ISO-9001
    B) ISO-14001
    C) ISO-26001
    D) ISO-31001

100. Which one of the following is NOT included under the definition of wages given under the Payment of Wages Act, 1936?
    A) Basic wage
    B) Dearness allowance
    C) Incentive
    D) Gratuity