



A Navratna CPSE

NBCC (INDIA) LIMITED

Candidate User ID :

Exam Date : 08/05/2022

Batch Id : CIVB1

Test Centre Name :

Exam Timing : 11:00 AM - 1:00 PM

Note: Questions answered are highlighted with selection

- 1 As per the Indian Standard soil classification system, a sample of silty clay with plasticity index of 28% and liquid limit of 40% and classified as ____
- CH
 - CI (Correct Answer)
 - CL
 - CL-ML
- 2 Bulk modulus [K] is ratio of ?
- Volumetric strain / Normal stress
 - Normal stress / Volumetric strain (Correct Answer)
 - Linear strain / Normal stress
 - Normal stress / Linear strain
- 3 The centrifugal ratio adopted in design of horizontal curve is defined as
- Weight of the vehicle/Centrifugal force
 - Weight of the vehicle X Centrifugal force
 - Centrifugal force/Radius of curvature
 - Centrifugal force/Weight of the vehicle (Correct Answer)
- 4 The process which is used for obtaining petroleum bitumen is
- atmospheric vacuum distillation (Correct Answer)
 - destructive distillation
 - liquefaction
 - none of the above

- 5 Shear stress is _____ at Neutral axis for rectangular section .
- Maximum (Correct Answer)
 - Minimum
 - Average
 - Zero
- 6 Find out value of Void ratio for Fully Saturated soil having water content 30 % and Specific gravity 2.65
- 0.565
 - 0.656
 - 0.795 (Correct Answer)
 - 0.895
- 7 The materials used in Prestressed concrete are
- High strength steel and high strength concrete (Correct Answer)
 - High strength steel and low strength concrete
 - Low strength steel and high strength concrete
 - Low strength steel and low strength concrete
- 8 The value of Poisson ratio is generally not greater than
- 0.05
 - 1
 - 0.5 (Correct Answer)
 - 1.5
- 9 What is classification of soil if the degree of saturation of soil mass is 0%?
- dry (Correct Answer)
 - partially saturated
 - fully saturated
 - incorrect data
- 10 As compared to laminar flow, in turbulent flow, boundary layers will be

- thinner
- thicker (Correct Answer)
- same
- half
- 11 In BOT (Build-Operate-Transfer) based project, the most important evaluation criterion is
- financial internal rate of return
- internal rate of return
- benefit-cost ratio (Correct Answer)
- present value
- 12 A cork is immersed in a jar of water and released. How the cork will move if the jar is assumed to be kept in a satellite orbiting earth:
- rise
- sink
- remains where left (Correct Answer)
- none of these
- 13 Which of the following property/properties is/are possessed by Joint filler?
- Compressibility
- Elasticity
- Durability
- All of the above (Correct Answer)
- 14 Type of Earth pressure that exists in case of deep basement wall is ___
- Active Earth pressure
- Passive Earth pressure
- At rest Earth pressure (Correct Answer)
- Sometimes active, sometimes passive Earth pressure
- 15 How many of the following instruments are correctly matched with their purpose / what they measure? 1. Vee-Bee apparatus - Workability or consistency of concrete mix 2. Le Chatelier Flask - Specific gravity of hydraulic cement 3. Vicat apparatus - Initial and final setting times of cement

- 0
- 1
- 2
- 3 (Correct Answer)

16 The radius of 1 degree curve in case of railways is

- 1750 m (Correct Answer)
- 573 m
- 860 m
- 2292 m

17 In the case of OPC, for the cement to possess the property of SOUNDNESS, the quantity of GYPSUM is ___ % of clinker

- 3 to 5 (Correct Answer)
- 8 to 10
- 10 to 12
- 12 to 13

18 When liquidity index is between 0 and 1 the soil will behave like

- Liquid
- Plastic (Correct Answer)
- Solid
- Sand

19 What is the compressive strength of M-25 concrete?

- 25 kg/sqm
- 25 N/sq.mm (Correct Answer)
- 250 N/sqm
- 25 N/sqm

20 Which of the following processes can be used for corrosion prevention method of cast iron? i) Painting ii) Epoxy coating iii) Quenching iv) Galvanizing

- i, ii and iv (Correct Answer)

- i, ii and iii
- i only
- iii only
- 21 At the point of inflexion, which of the following is true? a) deflected shape changes curvature b) bending moment is zero
- only a)
- only b)
- both a) and b) (Correct Answer)
- neither a) nor b)
- 22 The percentile speed which is considered as upper safe unit for vehicles is
- 15th percentile speed
- 85th percentile speed (Correct Answer)
- 98th percentile speed
- None of the above
- 23 The formula for calculation of toughness index of soil mass is
- Plasticity index / Flow index (Correct Answer)
- Plasticity index \times flow index
- Plasticity index $-$ flow index
- Flow index / plasticity index
- 24 The ratio of total elongation of a bar of uniform cross-section produced under its own weight to the elongation produced by an external load equal to weight of the bar, would be
- 2
- 1
- 0.5 (Correct Answer)
- 0.25
- 25 Along the grains, tensile strength of timber is the corresponding compressive strength
- same
- less than

- less than
- not comparable
- more than (Correct Answer)
- 26 Calculate the ratio of Active Earth pressure to Passive Earth Pressure if it is given that the value of internal friction for sandy soil is 30 degrees.
- 1/9 (Correct Answer)
- 9
- 3
- 1/3
- 27 The relation between intermediate sight distance (ISD) and stopping sight distance (SSD) is
- $ISD = 2 \times SSD$ (Correct Answer)
- $ISD = 3 \times SSD$
- $ISD = 4 \times SSD$
- $ISD = 5 \times SSD$
- 28 The age of a tree is determined by
- Counting the number of rings in the stem cross-section (Correct Answer)
- Counting the number of leaves on the branches
- Measuring the height of the tree
- Measuring the root and stem ratio
- 29 Two circular copper bars of equal lengths have diameter ratio 1:2. When each bar is subjected to the same tensile load, the corresponding ratio of elongations will be:
- 4:1 (Correct Answer)
- 1:4
- 2:1
- 1:2
- 30 Which of the following is NOT an ingredient of primer used on woods?
- RED LEAD
- WHITE LEAD

- WHITE LEAD
- LITHARGE
- NONE OF THE ABOVE (Correct Answer)

31 The Elastic modulus of the material is _____ if the Poisson's ratio of material is 0.5

- Five times its shear modulus
- Equal to its shear modulus
- Three times its shear modulus (Correct Answer)
- Nine times its shear modulus

32 Mathematically, Plasticity index is given by the difference of

- liquid limit and shrinkage limit
- shrinkage limit and plastic limit
- liquid limit and plastic limit (Correct Answer)
- none of these

33 The acceptable limit required for lead as per Indian Standard Drinking Water Specifications (IS 10500 : 2012) is

- 0.01 mg/l (Correct Answer)
- 0.02 mg/l
- 0.05 mg/l
- 0.10 mg/l

34 For a composite bar system of length L, change in length of the two members are same". This is referred to as condition

- Equilibrium
- compatibility (Correct Answer)
- momentum
- neutral

35 The ratio of ultimate stress to the permissible stress is called _____

- Factor of safety (Correct Answer)
- Design factor

- Stress factor
- Load factor
- 36 When is a floating body in stable equilibrium?
- When its metacentric height is zero
- When the centre of gravity of the body is below the centre of buoyancy
- When its metacentre is above the centre of gravity of body (Correct Answer)
- In none of the above situations
- 37 The substance bar is used to measure _____ ?
- Vertical distance
- Horizontal distance (Correct Answer)
- Level difference
- Vertical angle
- 38 If the average monthly demand of domestic water in a city is q unit, the maximum monthly demand will be
- $1.28q$ (Correct Answer)
- $1.48q$
- $1.5q$
- $2.7q$
- 39 In Ultimate Load Method, the load used in the design of R.C.C. structures refers to
- Total collapse load
- Working load multiplied by a load factor (Correct Answer)
- Working load divided by a load factor
- Plastic load
- 40 What does the noise level L_{90} represent, in measuring traffic noise?
- background noise level (Correct Answer)
- lowest noise level
- average noise level

peak noise level

41 How many of the following tests are correctly matched with their purpose? 1. Oven drying method - Determination of water content of soil sample 2. Ring and Ball test - Determination of softening point of bitumen 3. Sand bath method - Water content determination of soil

0

1

2

3 (Correct Answer)

42 Expansion joints are generally provided at [For smooth interface]

50 m (Correct Answer)

30 m

5 m

none

43 For measurement of Quantity degree of accuracy for volume is taken as

0.01 cu meter (Correct Answer)

1 cu meter

10 cu meter

100 cu meter

44 If the activity of soil mass is smaller than 0.60 , then the soil is classified as

inactive (Correct Answer)

normal

active

none of the above

45 Which of the following Bogue components is responsible for the ultimate strength of OPC?

C3S

C2S (Correct Answer)

C3A

C4AF

46 The radius of Mohr's circle for two unlike principal stresses of magnitude p is:

$p/4$

$p/2$

p (Correct Answer)

$2p$

47 In simply supported beam of rectangular cross section, at the neutral axis, the bending stress is ____ and shear stress is ____ .

Zero, maximum (Correct Answer)

Maximum, zero

Zero, zero

Maximum, maximum

48 The correct group symbol of "clayey sand" is

SM

OH

SC (Correct Answer)

GC

49 The concrete recommended for radiation shielding is

fibre reinforced concrete

heavy weight concrete (Correct Answer)

light weight concrete

all of the above

50 Travel behaviour characteristics of an urban area can be derived from ____ .

Parking Survey

Demographic Survey

Socio Economic Survey

Origin & Destination Survey (Correct Answer)

- 51 The relation between surface tension (σ), diameter & difference of pressure between inside and outside of a liquid drop is
- $P = 4\sigma/d$ (Correct Answer)
 - $P = 8\sigma/d$
 - $P = 2\sigma/d$
 - $P = 3\sigma/d$
- 52 1 bag of 50 kg cement = _____
- 0.225 Cu. m.
 - 0.034 Cu. m. (Correct Answer)
 - 0.17 Cu. m.
 - 0.30 Cu. m.
- 53 Units of safe bearing capacity of soil is __
- N/m
 - kN/m^2 (Correct Answer)
 - kg/m
 - m/s
- 54 In consistency test Vicat's plunger penetrates up to a ___ to _____ mm from the bottom of the Vicat's mould. ?
- 2 to 3 mm
 - 3 to 5 mm
 - 5 to 7 mm (Correct Answer)
 - 7 to 10 mm
- 55 For designing of road and geometrics in India, _____ traffic volume is considered.
- 30th highest hourly (Correct Answer)
 - 40th highest hourly
 - 50th highest hourly
 - 60th highest hourly

- 56 Shear stress in a beam having triangular cross-section is maximum at ...
- extreme top fibre
 - extreme bottom fibre
 - neutral axis
 - mid depth (Correct Answer)
- 57 If the annual net income from a commercial property is Rs. 22, 000/- and the interest rate is 8%, then the capitalization value of the property in perpetuity is approx _____.
- 350000
 - 275000 (Correct Answer)
 - 175000
 - 88000
- 58 The correct formula for calculating hydraulic gradient is $G : \text{specific gravity of soil solids} E : \text{void ratio}$
- $(G - 1) / 1 + e$ (Correct Answer)
 - $(G + 1) / 1 + e$
 - $(G - 1) / 1 - e$
 - $(G + 1) / 1 - e$
- 59 As per IS Soil classification system the silt particles size ranges from _____ to _____ ?
- 0.075 mm to 4.75 mm
 - 4.75 mm to 20 mm
 - 0.002 mm to 0.075 mm (Correct Answer)
 - 2 mm to 20 mm
- 60 Stoke is the Unit of
- Kinematic viscosity in CGS Unit (Correct Answer)
 - Kinematic viscosity in MKS Unit
 - Dynamic viscosity in MKS Unit
 - Dynamic viscosity in SI Unit

61 The ratio of surface tension of a spherical droplet and hollow bubble of same diameter is

- 1:1
- 1:2 (Correct Answer)
- 2:1
- 3:1

62 In Direct Shear Test, the failure strain for loose sand is

- 12 to 16% (Correct Answer)
- 2 to 4%
- 20 to 25%
- 6 to 8%

63 Which of the following is a ductile material?

- cast iron
- copper (Correct Answer)
- glass
- concrete

64 A Cipoletti weir has side slope of ____

- 1 horizontal : 1 vertical
- 1 horizontal : 2 vertical
- 1 horizontal : 3 vertical
- 1 horizontal : 4 vertical (Correct Answer)

65 In a liquid jet of radius 'r', the surface tension is expressed as _____, where ' Δp ' is the pressure of the liquid.

- $\Delta p / r$
- $\Delta p \times r$ (Correct Answer)
- $r / \Delta p$
- $r + \Delta p$

66 For a design speed of 80 kmph, minimum visibility distance at a major road intersection, is ____

- 200 metres
- 120 metres (Correct Answer)
- 80 metres
- 100 metres
- 67 Which of the following type of Bituminous emulsion is suitable for surface dressing and penetration macadam type of construction? i) Rapid setting (RS) type (ii) Medium setting (MS) type
- i only (Correct Answer)
- ii only
- both i and ii
- neither i nor ii
- 68 The shape of transition curve recommended by Indian Railway is
- Circular
- Spiral
- Cubic Parabolic (Correct Answer)
- Lemniscates
- 69 Reinforced cement concrete is strong in ____
- Tensile and compressive stresses (Correct Answer)
- only tensile stress
- only compressive stress
- neither tensile nor compressive stresses
- 70 Origin and destination survey helps in identifying
- Desire lines of vehicular traffic flow (Correct Answer)
- Location of main traffic nodes
- Peak capacity of road
- Peak capacity of road junctions
- 71 The strain at yield of reinforcing steel is

- elastic strain + (design yield stress/Young's modulus of steel) (Correct Answer)
- inelastic strain + (design yield stress/elastic strain)
- inelastic strain + (design yield stress/Young's modulus of steel)
- elastic strain + (design yield stress/inelastic strain)

72 If the degree of shrinkage S_r (%) of soil mass is $< 5\%$, then the quality of soil is

- good (Correct Answer)
- medium good
- poor
- very poor

73 When the declination of magnetic bearing is towards west then, ___

- True bearing = magnetic bearing + declination
- True bearing = magnetic bearing – declination (Correct Answer)
- True bearing + magnetic bearing = declination
- None of the above

74 What is the desirable limit of Calcium in drinking water as per IS 10500:2012?

- 20 mg/l
- 50 mg/l
- 75 mg/l (Correct Answer)
- 100 mg/l

75 A square based regular pyramid has all sides equal to 10 m. Its height is approximately equal to _____ m.

- 10
- 14
- 7 (Correct Answer)
- 5

76 In a litre of paint, the volume of solid pigment is 400 cc and volume of non-volatile binder is 600cc. What is the pigment volume concentration number of the paint?

- 400

- 200
- 40 (Correct Answer)
- 4

77 What is the minimum grade of concrete to be used for pre-tensioned structural element as per IS 1343:1980?

- M10
- M20
- M30
- M40 (Correct Answer)

78 As per IS 456:2000, the maximum amount of tensile reinforcement in a reinforced concrete beam shall not exceed

- $0.012 * b * D$
- $0.015 * b * D$
- $0.03 * b * D$
- $0.04 * b * D$ (Correct Answer)

79 Falling drops of water become spherical because of below properties of fluid ?

- Surface tension (Correct Answer)
- Cohesion
- Adhesion
- Viscosity

80 The correct formula for calculation of water content is W_w : weight of water W : overall weight of soil mass W_s : weight of solids

- W_w / W
- W_w / W_s (Correct Answer)
- W_s / W
- W_s / W_w

81 The soils having SPT value in between 0 & 2, will have the consistency as

- Very soft (Correct Answer)

- Medium
- Hard
- Stiff

82 Which of the following may be used as surface course for roads with low traffic in low rain fall regions? 1. Bituminous stabilized layer 2. Soil-lime stabilized layer 3. Cement-lime stabilized layer

- 2 and 3
- Only 1 (Correct Answer)
- 1, 2 and 3
- 1 and 2

83 What is Khosla's formula used to calculate?

- Runoff (Correct Answer)
- Precipitation
- Evaporation
- All of the above

84 If the original cost of a building is Rs.1,00,000/-, scrap value is Rs. 1,000/- and life of the property is 99 years, the Annual Depreciation calculated by Straight Line Method is ____

- 100
- 1000 (Correct Answer)
- 90
- 10000

85 Unit of measurement of dynamic viscosity is ____

- poise (Correct Answer)
- poisson
- stoke
- joules

86 What ingredient is used in the production of Aerated Cement Concrete?

- Aluminum (Correct Answer)
- Calcium chloride

- Calcium Chloride
- Gypsum
- Sulphur

87 The ratio of slope at free end in cantilever beam having uniform load intensity to varying load intensity maximum at fixed end, would be

- 0.25
- 7.5
- 0.4
- 4 (Correct Answer)

88 Poisson's ratio is ____

- Lateral Strain / Linear Strain (Correct Answer)
- Linear Strain / Lateral Strain
- Lateral Strain / Linear Stress
- Load / area

89 Compressive stress for Rankine's formula [For Column] for Mild steel is = _____ N/mm²

- 320 (Correct Answer)
- 550
- 250
- 50

90 Distemper is used on ____

- Brick walls
- Plastered surface exposed to weather
- Concrete surface
- Plastered surface not exposed to weather (Correct Answer)

91 Find the smallest value amongst following.

- 20% * (1% * 5700) (Correct Answer)
- 45% * (1% * 3200)

30% * (1% *8500)

15% * (3% *6200)

92 If $7 \times 6 = 26$, $7 \times 5 = 24$ and $8 \times 12 = 40$, then $9 \times 10 = \underline{\hspace{2cm}}$.

90

38 (Correct Answer)

19

28

93 Among the following river which is located near the Thar desert?

Indus river (Correct Answer)

Kaveri river

Krishna river

Godavari river

94 A train passes by a man standing on the platform in 8 seconds and passes by the 1152meters long platform completely in 56 seconds. What is the length of the train?

204 meters

192 meters (Correct Answer)

178 meteres

146 meters

95 The difference of two numbers is 11 and one-fifth of their number is 9. Find the numbers.

28, 17 (Correct Answer)

27, 10

44, 33

15, 10

96 In a 12-hour 20-minute period from 11.55 a.m. of Jan 1 to 12.15 a.m. of Jan 2, how many times do the hour and minute hand cross each other?

14

11

12 (Correct Answer)

13

97 Which of the following will give second largest value?

$17/99 + 10/88 + 1/97$

$16/39 + 6/81 + 13/42$

$14/84 + 19/50 + 32/74$ (Correct Answer)

$39/90 + 15/82 + 26/54$

98 Who is the first person to receive Jnanpith award in kannada?

V. R. Anandmurthi

Girish Karnad

Kuvempu (Correct Answer)

Masti Venkatesh Iyengar

99 A person was asked to state his age in years. His reply was, "Take my age three years hence, multiply it by 3 and then subtract three times my age three years ago and you will know how old I am." What was the age of the person ?

18 years (Correct Answer)

20 years

24 years

32 years

100 A large cube is painted blue and then 4 cuts are made on the X-axis, 7 cuts are made on the Y-axis, and 5 cuts are made on the Z-axis. The cube is then disintegrated. We now get small cuboids. Calculate number of cuboids whose no surface is painted blue.

30

140

82

72 (Correct Answer)

101 Find the wrong number in the following number series? 4, 7, 14, 13, 24, 19, 30

13

14

- 19
- 30 (Correct Answer)

102 Find the missing term in following series: GSR, IPN, KMJ, _____, OGB

- MJF (Correct Answer)
- MKF
- MIF
- MJG

103 Bunti is facing South. He turns 45 degree right. Then he turns 90 degree left. He then turns 180 degree. He then turns 45 degree left. He then again turns 180 degree. Which direction is he now facing?

- East (Correct Answer)
- West
- North West
- South East

104

Two sets are given below:
Set 1
Sports personality: Vijender Singh
Associated sport: Boxing

Set 2
Sports personality: Dutee Chand
Associated sport: 100 mts run

For the given sportsperson in Set 1 and Set 2, check if the respective sport given is correct or incorrect.

- Both sets are correct (Correct Answer)
- Both sets are incorrect
- Only set 1 is correct
- Only set 2 is correct

105 Choose out the odd one

- Madagascar
- Thailand (Correct Answer)
- Cuba
- Greenland

- 106 Six brothers are sitting in a row for lunch. A passes sweets to C who is sitting second left to him and at the one end of the row. F is sitting second right to D. E is sitting at another end of the row and right to B. What is the position of D?
- Between C and A (Correct Answer)
 - Right to F
 - Left to E
 - Between F and E
- 107 If ADDRESS is written as BBEPFQT and DROUGHT is written as EPPSHFU, then GOGGLES should be written as _____.
- EPPPFQT
 - BBESHFU
 - HMHEMCT (Correct Answer)
 - HMHPFQT
- 108 If the cost price is 96% of the selling price, then what is the profit percent?
- 0.042
 - 0.0417 (Correct Answer)
 - 0.048
 - 0.0466
- 109 In which sea, Andaman and nicobar island is located?
- Arabian sea
 - Indian ocean
 - Bay of Bengal (Correct Answer)
 - Pacific ocean
- 110 Arrange the following states in ascending order of their areas.
- Goa, Haryana, Jharkhand, Chhattisgarh (Correct Answer)
 - Goa, Haryana, Chhattisgarh, Jharkhand
 - Haryana, Goa, Jharkhand, Chhattisgarh
 - Chhattisgarh, Jharkhand, Haryana, Goa

111 Arrange the following cities in the order from North to South.

- Mumbai, Hyderabad, Bangalore, Coimbatore (Correct Answer)
- Hyderabad, Mumbai, Bangalore, Coimbatore
- Mumbai, Hyderabad, Coimbatore, Bangalore
- Mumbai, Bangalore, Hyderabad, Coimbatore

112 Choose the missing term from the given options? BDWC, EGTF, HJQI, KMNL, ?

- NPKO (Correct Answer)
- PRIQ
- NPQO
- PRSQ

113 Match the states with their capitals.

State
A. Chhattisgarh
B. Haryana
C. Mizoram
D. Manipur

Capital
1. Imphal
2. Aizawal
3. Chandigarh
4. Raipur

- A-1, B-2, C-3, D-4
- A-4, B-3, C-2, D-1 (Correct Answer)
- A-1, B-2, C-4, D-3
- A-4, B-3, C-1, D-2

114 Find the missing term: -1, 2, 2, 3, 5, 5, 8, 7, 11, 11, ?, 13, 17

- 18
- 16
- 14 (Correct Answer)
- 10

115 If 11 January 1990 is Thursday, what day is 09 January 1991?

- Wednesday (Correct Answer)
- Thursday

- Friday
- Saturday

116 In the olden days street theatre ... to villages or small localities of the city.

- was restricted (Correct Answer)
- was not restricted
- was opened
- was entertained

117 Street theatre is ... to stage.

- nothing
- costly
- reasonable
- affordable (Correct Answer)

118 Street theatre usually...with issues of public importance.

- is distanced
- is performed
- deals (Correct Answer)
- does not deal

119 Modern means of entertainment and communication ... street theatre.

- does affect (Correct Answer)
- does not affect
- helps popularise
- help establish

120 Street theatre creates an/a ... impact on audiences

- intimate
- emotional (Correct Answer)
- mystical

physical

