

# JDLCCCE 2021

Application Seq No	
Candidate Name	
TC Name	iON Digital Zone iDZ Jamshedpur

Section : Civil Engineering

**Q.1** As per IS 12600 : 1989, the fineness of low heat Portland cement determined by Blaine's air permeability method, the specific surface of cement shall NOT be less than:

- Ans**
- A.  $300 \text{ m}^2/\text{kg}$
  - B.  $320 \text{ m}^2/\text{kg}$
  - C.  $220 \text{ m}^2/\text{kg}$
  - D.  $400 \text{ m}^2/\text{kg}$

Question ID : 276494941  
Status : Answered  
Chosen Option : C

**Q.2** As per IS classification (IS1498:1970), the grain size pertaining to fine sand type soils is:

- Ans**
- A. 0.002 mm to 0.005 mm
  - B. 0.075 mm to 0.002 mm
  - C. 2 mm to 0.075 mm
  - D. 0.425 mm to 0.075 mm

Question ID : 276494871  
Status : Answered  
Chosen Option : D

**Q.3** For a simple circular curve having deflection angle of  $90^\circ$ , the tangent distance is 300 m. The length of the curve is (in m):

- Ans**
- A.  $150\pi\sqrt{2}$
  - B.  $150\pi$
  - C.  $300\pi$
  - D.  $75\pi$

Question ID : 276494870  
Status : Answered  
Chosen Option : D

**Q.4** According to IS 456 : 2000, which of the following statements is true with respect to reinforcement provided in reinforced concrete columns?

**Ans**  A.

Columns with circular sections are provided with transverse reinforcement of helical type only.

B.

Maximum longitudinal reinforcement in an axially loaded short column is 6% of the gross cross-sectional area.

C.

Longitudinal reinforcement bar need not be in contact with lateral ties.

D.

Spacing of lateral ties cannot be more than 16 times the diameters of the tie bar.

Question ID : 276494951

Status : Answered

Chosen Option : B

**Q.5** Match the items under list 1 (Tests on Bitumen) with those under list 2 (Purpose of Test).

Test on Bitumen	Purpose of Test
P. Flash and fire point test	1. Find the presence of paraffin, naphthalene, benzene, etc., which produce greasy effect and fail to hold the aggregate.
Q. Solubility test	2. To find the affinity of aggregate towards bituminous binder.
R. Adhesion test	3. Finding the quantity of bitumen in binder.
S. Sulphonation index test	4. Determine the temperature at which the volatile vapours are given off and catch fire.

**Ans**  A. P- 4, Q - 3, R - 2, S - 1

B. P- 2, Q - 3, R - 4, S - 1

C. P- 4, Q - 3, R - 1, S - 2

D. P- 4, Q - 1, R - 2, S - 3

Question ID : 276494850

Status : Answered

Chosen Option : A

**Q.6** For a encased column, which of the following sections CANNOT be used?

**Ans**  A. Two channels sections back-to-back with cover plate

B. A Tee section

C. Two channels sections back-to-back without cover plate

D. Symmetrical I section

Question ID : 276494960

Status : Answered

Chosen Option : C

Q.7

In the Bernoulli's equation  $\left(\frac{p}{\gamma} + \frac{v^2}{2g} + Z = \text{constant}\right)$ , with notations :  $p$  – intensity of pressure,  $\gamma$  – unit weight of liquid,  $v$  – mean velocity of flow,  $g$  – acceleration due to gravity,  $Z$  – elevation above datum), each term in the equation represents:

- Ans
- A. power in kW/kg mass of fluid
  - B. energy in N.m/N weight of fluid
  - C. energy in N.m/kg mass of fluid
  - D. energy in kg.m/kg mass of fluid

Question ID : 276494882  
Status : Answered  
Chosen Option : B

Q.8 The following statements (S1 and S2) pertain to paints.

S1 : With increase of pigment volume concentration, the gloss increases until paint becomes flat; blistering also increases.

S2 : Linseed oil is a widely used vehicle in paints.

Identify the validity of statements as true or false.

- Ans
- A. Statement S1 is true, but S2 is false.
  - B. Both statements S1 and S2 are true.
  - C. Both statements S1 and S2 are false.
  - D. Statement S1 is false, but S2 is true.

Question ID : 276494848  
Status : Answered  
Chosen Option : D

Q.9 In the case of earthwork excavation, mounds of earth left undisturbed in pits dug out for borrowing earth is known as:

- Ans
- A. burjis
  - B. jamb
  - C. joggle
  - D. dead-men

Question ID : 276494851  
Status : Answered  
Chosen Option : D

**Q.10** The magnetic bearing of a line PQ in a traverse is S52°E and the declination is found as 3° West. The true bearing of the line PQ is:

- Ans
- A. S49°W
  - B. S49°E
  - C. S55°E
  - D. S52°W

Question ID : 276494904  
Status : Answered  
Chosen Option : B

**Q.11** For the design of reinforced concrete slabs spanning in two directions, what is the maximum value of  $\frac{l_y}{l_x}$  ratio (where,  $l_y$  and  $l_x$  are the spans in the two directions), above which the slabs shall be designed as spanning one way?

- Ans
- A. 4
  - B. 3
  - C. 2
  - D. 1

Question ID : 276494948  
Status : Answered  
Chosen Option : C

**Q.12** For a reinforced concrete column of 300 mm × 300 mm size and 3 m height, 2% reinforcement is provided. Estimate the cost of reinforcement work. Take density of reinforcing bar is 8000 kg/m<sup>3</sup> and reinforcement cost as ₹70/kg.

- Ans
- A. ₹3,978
  - B. ₹3,524
  - C. ₹4,024
  - D. ₹3,024

Question ID : 276494856  
Status : Answered  
Chosen Option : D

**Q.13** A volume of 3 m<sup>3</sup> of certain oil weights 27 kN. Estimate the mass density of the fluid. (Take acceleration due to gravity = 10 m/s<sup>2</sup>.)

- Ans
- A. 9 kN/m<sup>3</sup>
  - B. 900 kg/m<sup>3</sup>
  - C. 0.9 kg/m<sup>3</sup>
  - D. 9000 kg/m<sup>3</sup>

Question ID : 276494880  
Status : Answered  
Chosen Option : B

**Q.14** As per IS : 2386 -1983, for the determination of particle size distribution of coarse aggregates of size 25 mm present in substantial proportion, the minimum weight of sample to be taken for testing is:

- Ans  A. 50 kg  
 B. 7.5 kg  
 C. 1.5 kg  
 D. 100 kg

Question ID : 276494939  
Status : Not Answered  
Chosen Option : --

**Q.15** Identify the type of varnish to which French polish being used to hide the grain defects on hardwood substances belongs:

- Ans  A. asphalt varnish  
 B. flat varnish  
 C. water varnish  
 D. spirit varnish

Question ID : 276494898  
Status : Answered  
Chosen Option : D

**Q.16** Determine the shear strength in terms of effective stress on a plane within a saturated soil mass at a point where the total normal stress is  $180 \text{ kN/m}^2$  and the pore water pressure is  $60 \text{ kN/m}^2$ . The effective shear strength parameters of soil (cohesion =  $15 \text{ kN/m}^2$  and angle of shearing resistance =  $30^\circ$ ). Take  $\sqrt{3} = 1.7$  for calculation.

- Ans  A.  $136 \text{ kN/m}^2$   
 B.  $83 \text{ kN/m}^2$   
 C.  $49 \text{ kN/m}^2$   
 D.  $117 \text{ kN/m}^2$

Question ID : 276494872  
Status : Answered  
Chosen Option : B

**Q.17** It is necessary to install rain gauges in the catchment area of a dam with facilities of recording and transmitting the rainfall values to the control station of the dam with least human intervention. Identify the rain gauge that is NOT suited to serve the purpose.

- Ans  A. Tipping bucket type  
 B. Weighing bucket type  
 C. Symon's rain gauge  
 D. Syphon type

Question ID : 276494889  
Status : Answered  
Chosen Option : D

**Q.18** What will be the resultant sound level due to the sound produced from two sources 100 dB and 50 dB in the same location?

- Ans**
- A. 100 dB
  - B. 150 dB
  - C. 2 dB
  - D. 50 dB

Question ID : 276494926  
Status : Answered  
Chosen Option : A

**Q.19** For a major irrigation canal the culturable command area is 1.2 km<sup>2</sup>, out of which 0.9 km<sup>2</sup> is cultivated during the Kharif season and 0.6 km<sup>2</sup> of land is cultivated during the Rabi season. The yearly intensity of irrigation is:

- Ans**
- A. 75%
  - B. 100%
  - C. 50%
  - D. 125%

Question ID : 276494890  
Status : Answered  
Chosen Option : D

**Q.20** The type of estimate which is prepared when additional works or when further developments are required during the progress of work is:

- Ans**
- A. supplementary estimate
  - B. detailed estimate
  - C. annual repair estimate
  - D. abstract estimate

Question ID : 276494854  
Status : Answered  
Chosen Option : A

**Q.21** The fly ash content (by weight of cement) in Portland Pozzolana cement is:

- Ans**
- A. 10-25%
  - B. 5-10%
  - C. 15-35%
  - D. 20-25%

Question ID : 276494937  
Status : Answered  
Chosen Option : B

**Q.22** The following statements (S1 to S4) pertain to the lining of canals.

S1 : Lined canals have greater evaporation loss than unlined canals.

S2 : Lining of canals provides a rough surface, and thereby increases the rugosity co-efficient.

S3 : The cross-section area of lined canal is less than that for an unlined canal, for the same discharge.

S4 : Lined canals have flatter hydraulic gradient than unlined canals, for carrying the same discharge.

Which of the statements is/are INCORRECT?

- Ans**
- A. Both S1 and S4
  - B. Both S1 and S2
  - C. Only S4
  - D. Only S3

Question ID : 276494892  
Status : Answered  
Chosen Option : B

**Q.23** Identify the dimensionless parameter from the following.

- Ans**
- A. Kinematic viscosity
  - B. Manning's co-efficient
  - C. Froude Number
  - D. Specific weight

Question ID : 276494885  
Status : Answered  
Chosen Option : C

**Q.24** According to IS 14315: 1995, the maximum thickness of commercial veneers produced from wood is:

- Ans**
- A. 10 mm
  - B. 4 mm
  - C. 8 mm
  - D. 6 mm

Question ID : 276494847  
Status : Answered  
Chosen Option : D

**Q.25** For flood protection, the details for the construction of earthen embankments on either banks of a river are as follows.

Right bank : Height of embankment (above the bank level) = 4 m ; length = 300 m.

Left bank : Height of embankment (above the bank level) = 3 m ; length = 400 m.

If the cross-section of the embankment is trapezoidal in shape with top width 2 m, and side slope 2 : 1 (horizontal : vertical), then determine the quantity of earth required for the same.

- Ans**
- A. 43,200 m<sup>3</sup>
  - B. 21,600 m<sup>3</sup>
  - C. 19,200 m<sup>3</sup>
  - D. 10,800 m<sup>3</sup>

Question ID : 276494860

Status : Not Answered

Chosen Option : --

**Q.26** Torsional rigidity of a circular section for unit twist and unit length will be:

- Ans**
- A. torque
  - B. polar moment of inertia
  - C. modulus of rigidity
  - D. radius of the section

Question ID : 276494928

Status : Answered

Chosen Option : A

**Q.27** The following statements pertain to the design of alluvial channels using Lacey's theory. Identify the true statement.

- Ans**
- A. Wetted perimeter decreases with increase in design discharge.
  - B. Wetted perimeter increases with increase in design discharge.
  - C. Hydraulic radius increases with increase in silt factor.
  - D. Wetted perimeter increases with increase in silt factor.

Question ID : 276494896

Status : Answered

Chosen Option : C



**Q.28** In open channel flow, the ratio of wetted area to wetted perimeter of the cross-section is termed as:

- Ans**
- A. hydraulic exponent
  - B. section factor
  - C. hydraulic depth
  - D. hydraulic radius

Question ID : 276494909  
Status : Answered  
Chosen Option : D

**Q.29** Which of the following processes is adopted to remove objectionable tastes and odour and also to remove dissolved gases like carbon dioxide, hydrogen sulphide, etc?

- Ans**
- A. Flocculation
  - B. Disinfection
  - C. Filtration
  - D. Aeration

Question ID : 276494923  
Status : Answered  
Chosen Option : D

**Q.30** Identify the work (with codes P, Q, R, S) in which the units of measurement for estimation of quantities are NOT identical?

- P. Plastering of wall in cement mortar 1 : 3.
- Q. Damp proof course in cement concrete with thickness specified.
- R. Half brick wall 10 cm thick in 1 : 3 cement mortar.
- S. Expansion joint in concrete.

- Ans**
- A. Q
  - B. S
  - C. R
  - D. P

Question ID : 276494855  
Status : Answered  
Chosen Option : B

**Q.31** The following statements (S1 and S2) pertain to plane table survey.

S1 : The three point problem in plane table involves in locating the position of two points given the position of one point.

S2 : The two point problem in plane table involves in locating the station occupied by plane table given the location of two points.

Identify the validity of the statements as true/false and select the most appropriate answer.

- Ans
- A. Both S1 and S2 are true.
  - B. S2 is true, but S1 is false.
  - C. Both S1 and S2 are false.
  - D. S1 is true, but S2 is false.

Question ID : 276494867  
Status : Not Answered  
Chosen Option : --

**Q.32** If the surface tension at the soap air interface is 0.09 N/m, then estimate the internal pressure (in N/m<sup>2</sup>, above atmospheric pressure) in a soap bubble of 0.03 m diameter.

- Ans
- A. 6
  - B. 24
  - C. 48
  - D. 12

Question ID : 276494883  
Status : Answered  
Chosen Option : B

**Q.33** The total number of potential conflict points on a right angled intersection of two roads with two lanes, both having two way traffic movement will be:

- Ans
- A. 22
  - B. 16
  - C. 32
  - D. 24

Question ID : 276494920  
Status : Answered  
Chosen Option : D

**Q.34** According to IS 456 : 2000, for a cantilever reinforced concrete beam (with d - effective depth of the beam and b - breadth of the compression face midway between the lateral restraints), the clear distance from the free end of the cantilever to the lateral restraint shall NOT exceed \_\_\_\_\_.

- Ans
- A.  $25 b$  or  $100 b^2/d$  whichever is lesser
  - B.  $25 b$
  - C.  $25 b$  or  $100 b^2/d$  whichever is higher
  - D.  $100 b^2/d$

Question ID : 276494950  
Status : Answered  
Chosen Option : A

**Q.35** According to IS 1200(Part 2)-1974, the dimension of thickness of slab in concrete shall be taken to the nearest:

- Ans  A. 0.005 m  
 B. 0.01 m  
 C. 0.05 m  
 D. 0.001 m

Question ID : 276494900  
Status : Answered  
Chosen Option : C

**Q.36** Assuming annual travel for each vehicle to be 20,000 km, what is quantity of  $\text{NO}_x$  produced from 50,000 vehicles with emission rate of 2 gm/km/vehicle?

- Ans  A. 2000 t  
 B. 1900 t  
 C. 2100 t  
 D. 1800 t

Question ID : 276494925  
Status : Answered  
Chosen Option : A

**Q.37** Which property of cement is tested by Autoclave test method?

- Ans  A. Soundness test  
 B. Fineness  
 C. Setting time  
 D. Workability

Question ID : 276494943  
Status : Answered  
Chosen Option : A

**Q.38** Comment on the effect of cohesion in soil on the active and passive earth pressure of soil.

- Ans  A. Increases both active pressure and passive resistance.  
 B. Decreases both active pressure and passive resistance.  
 C. Increases the active pressure and decreases the passive resistance.  
 D. Decreases the active pressure and increases the passive resistance.

Question ID : 276494879  
Status : Not Answered  
Chosen Option : --

**Q.39** In a compaction test  $G$ ,  $w$ ,  $S$ , and  $e$  represent the specific gravity, water content, degree of saturation, and void ratio of soil, respectively. If  $\gamma_w$  is the unit weight of water, then the unit weight of the soil at zero air voids depends on:

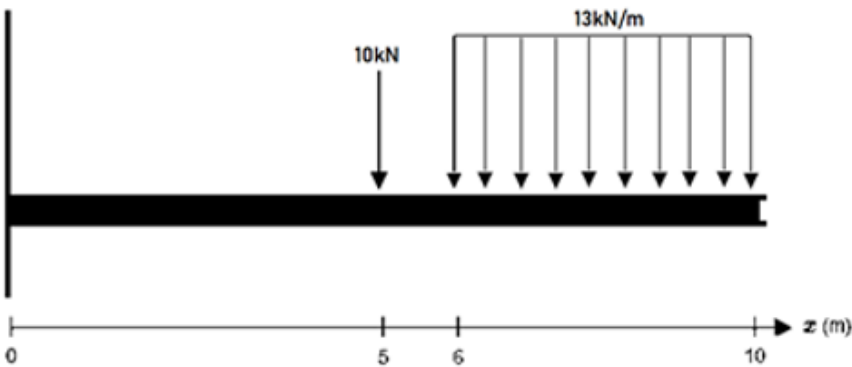
- Ans
- A.  $G$ ,  $\gamma_w$  and  $w$
  - B.  $G$ ,  $S$  and  $e$
  - C.  $G$ ,  $w$ ,  $e$
  - D.  $S$ ,  $\gamma_w$  and  $w$

Question ID : 276494906

Status : Answered

Chosen Option : A

**Q.40** Find the bending moment at 3 m from the fixed end.



- Ans
- A. 280 kN-m
  - B. 320 kN-m
  - C. 480 kN-m
  - D. 250 kN-m

Question ID : 276494931

Status : Answered

Chosen Option : A

**Q.41** The following statements (S1, S2, S3 and S4) pertain to the type of canals based on alignment. Select the correct statement/s.

- S1: A ridge canal can irrigate command areas on one side of the canal only.
- S2: A contour canal can irrigate areas on both sides of the canal.
- S3: A ridge canal requires very less number of cross drainage works.
- S4: Side slope canals are aligned roughly parallel to the natural drainage of the region.

- Ans
- A. S1, S2 and S3 are correct
  - B. S1 and S2 are correct
  - C. Only S1 is correct
  - D. S3 and S4 are correct

Question ID : 276494913

Status : Answered

Chosen Option : D

**Q.42** The following statements (S1, S2 ) pertain to fluids.

S1 : For a fluid at rest, the shear stress is maximum.

S2 : Gauge pressure is the pressure measured with respect to local atmospheric pressure.

Identify the validity of the statements as true/false.

- Ans**
- A. Both statements S1 and S2 are true.
  - B. Statement S1 is true, but S2 is false.
  - C. Statement S1 is false, but S2 is true.
  - D. Both statements S1 and S2 are false.

Question ID : 276494884  
Status : Answered  
Chosen Option : C

**Q.43** According to CPWD (Central Public works Department, Government of India), while doing measurements in concrete work, NO deduction shall be made for openings up to an area of:

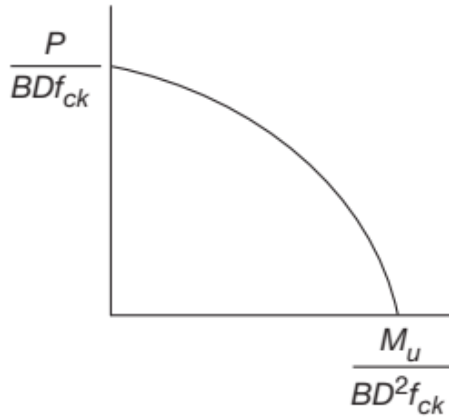
- Ans**
- A. 1.0 m<sup>2</sup>
  - B. 0.01 m<sup>2</sup>
  - C. 0.5 m<sup>2</sup>
  - D. 0.1 m<sup>2</sup>

Question ID : 276494852  
Status : Answered  
Chosen Option : D

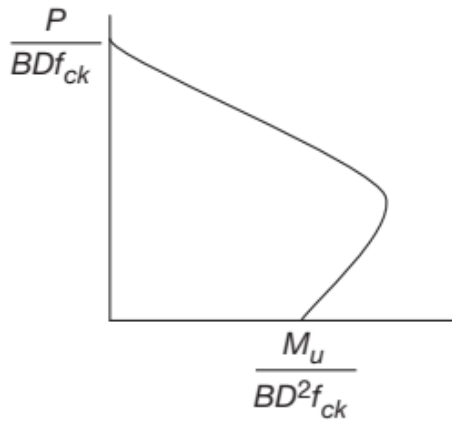
**Q.44** A rectangular reinforced column ( $B \times D$ ) has been subjected to uniaxial bending moment  $M$  and axial load  $P$ . Characteristic strength of concrete =  $f_{ck}$ . Which of the following column design curves shows the relation between  $M$  and  $P$  qualitatively?

Ans

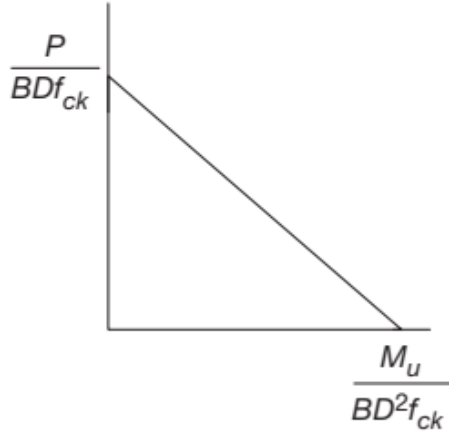
A.



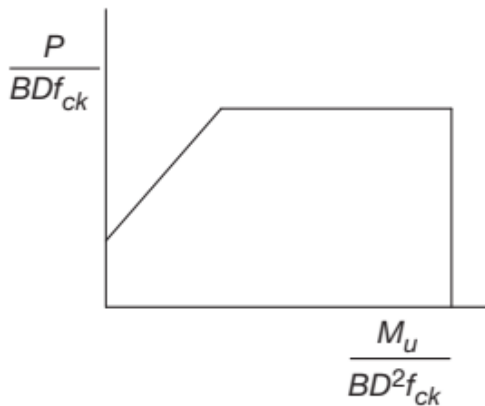
B.



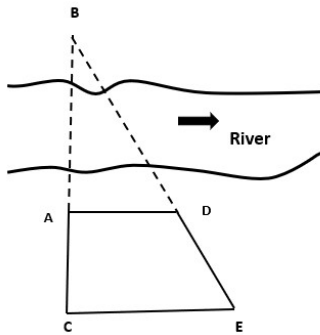
C.



D.



**Q.45** In a chain survey work, in order to determine the length across a river of a continuing chain line, the following observations were made as shown in the figure. The points C, A, and B are collinear. Also, the points B, D, and E are collinear.  $CA = AD = 40$  m. The angle CAD is  $90^\circ$ . Distance  $CE = 75$  m, angle  $ACE = 90^\circ$ . Determine length AB.



- Ans
- A. 37.5 m
  - B. 45.7 m
  - C. 40 m
  - D. 35 m

Question ID : 276494864

Status : Answered

Chosen Option : B

**Q.46** The following statements (S1 and S2) pertain to flow through pipes.

S1: In pipe flow, the loss of head at a sudden contraction is smaller than that at a sudden expansion.

S2 : Hydraulic grade line for flow in a pipe of constant diameter always lies above the energy grade line.

Identify the validity of statements as true/false.

- Ans
- A. Both statements S1 and S2 are false.
  - B. Both statements S1 and S2 are true.
  - C. Statement S1 is true, but S2 is false.
  - D. Statement S1 is false, but S2 is true.

Question ID : 276494887

Status : Not Answered

Chosen Option : --

**Q.47** The recommended PCU (Passenger Car Unit) value for a pedal cycle is:

- Ans
- A. 0.5
  - B. 1.5
  - C. 1.25
  - D. 1.0

Question ID : 276494919

Status : Answered

Chosen Option : A

**Q.48** An earthen embankment of trapezoidal cross-section, having top width  $B$ , and height  $d$  above ground level with a side slope  $z : 1$  (horizontal : vertical) is to be formed on one bank of a river for flood protection, for a length  $L$ . It is proposed to provide turfing over the embankment. The surface area of turfing the embankment will be:

**Ans**

A.  $L(B + 2d\sqrt{z+1})$

B.  $L(B + 2d\sqrt{z^2 + 1})$

C.  $L(B + 2zd)$

D.  $2L(B + d\sqrt{z^2 + 1})$

Question ID : 276494858

Status : **Not Answered**

Chosen Option : --

**Q.49** As per IS 800 : 2007, the maximum effective slenderness ratio of tension members (other than pre-tensioned members) shall NOT exceed:

**Ans**

A. 180

B. 400

C. 145

D. 350

Question ID : 276494957

Status : **Answered**

Chosen Option : **B**

**Q.50** By using a tacheometer with a horizontal line of sight, the three cross-hair readings were recorded as 2.08 m, 1.76 m, and 1.44 m, respectively. If the multiplying constant is 100 and the addition constant is zero, for the tacheometer, then the distance between the instrument and the stadia rod station is:

**Ans**

A. 64 m

B. 32 m

C. 198 m

D. 166 m

Question ID : 276494865

Status : **Answered**

Chosen Option : **A**



**Q.51** Two identical clay samples (SA and SB) of the same size are subjected to consolidation test under identical loading conditions. For the sample SA drainage takes place through one face and for sample SB drainage takes place through both the faces. The time taken for 50% consolidation in sample SA is 20 minutes. Determine the time taken for 50% consolidation to occur in sample SB.

- Ans
- A. 80 minutes
  - B. 10 minutes
  - C. 5 minutes
  - D. 20 minutes

Question ID : 276494873  
Status : Answered  
Chosen Option : C

**Q.52** What is the percentage range of chlorine in fresh bleaching powder?

- Ans
- A. 30 to 35%
  - B. 40 to 50%
  - C. 10 to 15%
  - D. 20 to 25%

Question ID : 276494924  
Status : Answered  
Chosen Option : A

**Q.53** The mass curve of rainfall for duration of 100 minutes from a self-recording rain gauge is given below.

Time from start of rain (minute)	Cumulative rainfall (mm)
0	0
20	5
40	12
60	26
80	32
100	35

Estimate the maximum intensity of rainfall for 20 minute duration of the storm.

- Ans
- A. 21 mm/h
  - B. 18 mm/h
  - C. 42 mm/h
  - D. 52 mm/h

Question ID : 276494895  
Status : Answered  
Chosen Option : C

**Q.54** Based on geological classification, six rock types are given below. Identify the rock types which do NOT fall under the category of Metamorphic rocks.

Rock types : Shale, Gneiss, Slate, Marble, Dolomite, Quartzite, Basalt.

- Ans
- A. Gneiss, Slate
  - B. Shale, Dolomite, Basalt
  - C. Slate, Marble
  - D. Marble, Quartzite

Question ID : 276494899  
Status : Answered  
Chosen Option : B

**Q.55** Find the lag distance for a car moving on a highway at a speed of 100 km/h if reaction time of the driver is 2 sec.

- Ans
- A. 55.6 m
  - B. 87.5 m
  - C. 96.3 m
  - D. 153.2 m

Question ID : 276494915  
Status : Answered  
Chosen Option : A

**Q.56** Laminated timbers composed of two or more layers of dimensional lumber glued together with the grain of all layers laid parallel are known as:

- Ans
- A. cermet
  - B. bone
  - C. formica
  - D. glulam

Question ID : 276494846  
Status : Not Answered  
Chosen Option : --

**Q.57** If S (strength) and H (hardness) are indexes of a timber at 12% moisture content, the composite sleeper index is:

- Ans
- A.  $\frac{S+10 H}{20}$
  - B.  $\frac{S+20 H}{10}$
  - C.  $\frac{H+10 S}{20}$
  - D.  $\frac{20 S+ H}{10}$

Question ID : 276494917  
Status : Not Answered  
Chosen Option : --

**Q.58** If three centrifugal pumps identical in all respects and each capable of delivering a discharge  $Q$  against a head  $H$  are connected in parallel, then the resulting discharge is:

- Ans
- A.  $3Q$  against a head  $3H$
  - B.  $3Q$  against a head  $H$
  - C.  $Q$  against a head  $3H$
  - D.  $3Q$  against a head  $\sqrt{3}H$

Question ID : 276494886  
Status : Answered  
Chosen Option : B

**Q.59** Among the following survey equipment, identify the one which CANNOT be used for measurement of linear distance.

- Ans
- A. Distomat
  - B. Geodimeter
  - C. Tellurometer
  - D. Clinometer

Question ID : 276494861  
Status : Answered  
Chosen Option : D

**Q.60** What will be maximum limit of pitch for the construction of wood stairs for houses?

- Ans
- A.  $60^\circ$
  - B.  $37^\circ$
  - C.  $45^\circ$
  - D.  $32^\circ$

Question ID : 276494952  
Status : Answered  
Chosen Option : A

**Q.61** A residential building fetches a monthly gross rent of ₹10,000. The annual outgoings in the form of taxes and other contingencies is ₹20,000. The cost of land comes to ₹5,00,000. Estimate the total value of the property on a yearly basis. Assume the rate of interest as 5% per annum.

- Ans
- A. ₹20,00,000
  - B. ₹25,00,000
  - C. ₹29,00,000
  - D. ₹6,00,000

Question ID : 276494901  
Status : Answered  
Chosen Option : D

**Q.62** The details pertaining to a distributary canal for the irrigation interval are as follows.

Consumptive use of a crop = 8 cm ; irrigation interval = 12 days; effective rainfall = 2 cm ; water application efficiency = 75% ; conveyance efficiency of canal = 50%. Determine the gross irrigation requirement of distributary. Ignore the water loss due to deep percolation.

- Ans**
- A. 8 cm
  - B. 21.33 cm
  - C. 12 cm
  - D. 16 cm

Question ID : 276494894  
Status : Answered  
Chosen Option : D

**Q.63** As per IS 456 : 2000, column or strut is a compression member, the effective length of which exceeds \_\_\_\_\_ time(s) the least lateral dimension.

- Ans**
- A. 2
  - B. 1
  - C. 4
  - D. 3

Question ID : 276494949  
Status : Answered  
Chosen Option : D

**Q.64** The properties of Asbestos are listed below in statements S1 to S4.

S1 : Have very high tensile strength along the fibres.

S2 : Has high heat and electric conductivity.

S3 : Has low resistance to alkali and good resistance to acids.

S4 : Has good water absorption capacity.

Select the INCORRECT statement(s).

- Ans**
- A. S2 and S3 only
  - B. S4 only
  - C. S1, S2 and S4 only
  - D. S1 only

Question ID : 276494844  
Status : Not Answered  
Chosen Option : --

**Q.65** According to IS 456:2000, for simply supported reinforced concrete beams or slabs, the values of span to effective depth ratio for spans up to 10 m is:

- Ans**  A. 20  
 B. 22  
 C. 7  
 D. 26

Question ID : 276494945  
Status : Answered  
Chosen Option : A

**Q.66** The alkali-aggregate reaction in concrete CANNOT be controlled by:

- Ans**  A. controlling the void space in concrete  
 B. selection of non-reactive aggregates  
 C. controlling moisture condition and temperature  
 D. the use of high alkali cement

Question ID : 276494938  
Status : Answered  
Chosen Option : D

**Q.67** Four statements S1 to S4 connected to soil behaviour are given.

S1: Permeability of coarse grained soil is inversely proportional to square of the specific surface at a given porosity.

S2: Consolidation is a function of total stress.

S3: For a fully saturated soil the pore pressure parameter is equal to zero.

S4 : Terzaghi's theory of consolidation considers only primary consolidation.

Which of the above statements is/are correct?

- Ans**  A. S2 and S3  
 B. Only S2  
 C. S1 and S4  
 D. Only S1

Question ID : 276494878  
Status : Answered  
Chosen Option : C

**Q.68** The following perpendicular offsets were taken from a chain line to an irregular boundary. Civil Junction

Chainage (m)	30	36	42	48	54	60
Offset (m)	4	8	14	12	16	6

Compute the area (in  $m^2$ ) between the chain line, boundary and the offsets between chainages 30 and 60 m, using Simpson's rule.

- Ans**
- A. 330
  - B. 360
  - C. 340
  - D. 300

Question ID : 276494853  
Status : Answered  
Chosen Option : D

**Q.69** The computed values of latitude and departure of a survey line PQ are (+) 250 m and (-) 250 m, respectively. The whole circle bearing of the line PQ is:

- Ans**
- A. 315 degree
  - B. 225 degree
  - C. 45 degree
  - D. 135 degree

Question ID : 276494863  
Status : Answered  
Chosen Option : A

**Q.70** In a levelling work, seven readings were taken with a level as - 1.42, 1.57, 0.765, 1.11, 1.95, 2.9, and 1.825 m. If the instrument was shifted after the third and fifth readings, the readings recorded under the fore sight column will be:

- Ans**
- A. 1.42, 1.95, 2.9
  - B. 0.765, 1.95, 1.825
  - C. 1.42, 1.11, 2.9
  - D. 1.42, 0.765, 1.95

Question ID : 276494869  
Status : Answered  
Chosen Option : B

**Q.71** A catchment of area  $3 \text{ km}^2$  experienced a rainfall of uniform intensity  $2 \text{ cm/h}$  for a duration of 8 hours. If the resulting surface runoff is measured as  $0.3 \text{ Mm}^3$ , then estimate the average infiltration capacity during the storm (in  $\text{cm/h}$ ).

- Ans
- A. 1.0
  - B. 2.0
  - C. 0.75
  - D. 6.0

Question ID : 276494912  
Status : Answered  
Chosen Option : B

**Q.72** According to IS 12269:2013, loss on ignition for ordinary Portland cement of 53 grade cement shall NOT be greater than \_\_\_\_\_ per cent by mass.

- Ans
- A. 1.5
  - B. 2
  - C. 3
  - D. 4

Question ID : 276494897  
Status : Answered  
Chosen Option : B

**Q.73** Which is the correct permissible limit for solids as per clause 5.4 of IS 456:2000?

- Ans
- A. Sulphates  $2000 \text{ mg/l}$
  - B. Inorganic  $3000 \text{ mg/l}$
  - C. Organic  $1000 \text{ mg/l}$
  - D. Suspended  $500 \text{ mg/l}$

Question ID : 276494940  
Status : Answered  
Chosen Option : D

**Q.74** Among the different types of soil given, identify the soil having low values of specific gravity (may fall below 2).

- Ans
- A. Inorganic clay
  - B. Soil high in mica and iron
  - C. Organic soil
  - D. Clean sand and gravel

Question ID : 276494905  
Status : Answered  
Chosen Option : C

**Q.75** A double jet Pelton wheel operates under a head of 50 m and develops a power of 800 kW. Determine the flow rate. Take overall efficiency of the turbine as 0.8. Take unit weight of water as  $10 \text{ kN/m}^3$ .

- Ans
- A.  $1 \text{ m}^3$
  - B.  $1.28 \text{ m}^3$
  - C.  $1.6 \text{ m}^3$
  - D.  $2 \text{ m}^3$

Question ID : 276494881  
Status : Not Answered  
Chosen Option : --

**Q.76** Determine the approximate proportion of dry cement mortar required for brick work with bricks of nominal size  $19 \text{ cm} \times 9 \text{ cm} \times 9 \text{ cm}$ , with 20% extra for frog filling and wastage. (Assume  $1 \text{ m}^3$  of wet mortar =  $1.25 \text{ m}^3$  of dry mortar.)

- Ans
- A. 41%
  - B. 36.3%
  - C. 26.5%
  - D. 34.5%

Question ID : 276494902  
Status : Answered  
Chosen Option : D

**Q.77** Arrange the bogue compound compositions (C3A, C4AF, C3S, C2S) in ordinary Portland cement in the decreasing order (maximum to the least) of their percentage composition: (Symbols : C3A : Tricalcium aluminate ; C4AF : Tetracalcium Alumino ferrite ; C3S : Tricalcium aluminate ; C2S : Dicalcium silicate )

- Ans
- A. C3S, C3A, C2S, C4AF
  - B. C3S, C2S, C3A, C4AF
  - C. C3A, C2S, C4AF, C3S
  - D. C2S, C3S, C4AF, C3A

Question ID : 276494849  
Status : Answered  
Chosen Option : B

**Q.78** For an elastic material, the relationship between modulus of elasticity (E), modulus of rigidity (G) and Poisson's ratio ( $\mu$ ) is given by:

- Ans
- A.  $C = 2E(1 + \mu)$
  - B.  $E = 2C(1 + \mu)$
  - C.  $E = C(1 + 2\mu)$
  - D.  $C = 2E(1 + 2\mu)$

Question ID : 276494933  
Status : Answered  
Chosen Option : B



**Q.79** For the most economical section of a rectangular cross-section open channel having hydraulic radius 0.6 m, the corresponding bottom width of the channel is:

- Ans  A. 3.6 m  
 B. 2.4 m  
 C. 0.6 m  
 D. 1.2 m

Question ID : 276494888  
Status : Answered  
Chosen Option : B

**Q.80** The maximum inclination of a plane at which a body remains in equilibrium over the inclined plane by friction only is known as:

- Ans  A. angle of internal friction  
 B. angle of inclination of plane  
 C. angle of repose  
 D. angle of resultant

Question ID : 276494932  
Status : Answered  
Chosen Option : C

**Q.81** Minimum thickness of web plate in plate girder is \_\_\_\_\_ if the surface is painted.

- Ans  A. 10 mm  
 B. 8 mm  
 C. 6 mm  
 D. 12 mm

Question ID : 276494958  
Status : Answered  
Chosen Option : C

**Q.82** Two statements (S1 and S2) pertain to a soil mass are given.

S1 : Consolidation is the process of removal of air from soils.

S2 : The pore water pressure in the capillary zone of a soil is negative.

Identify the inference about the validity of the statements as true/false.

- Ans  A. Both statements S1 and S2 are false.  
 B. Statement S1 is false, but S2 is true.  
 C. Statement S1 is true, but S2 is false.  
 D. Both statements S1 and S2 are true.

Question ID : 276494876  
Status : Answered  
Chosen Option : B

**Q.83** Among the checks to be applied in a closed traverse ABCDEA surveying, identify the INCORRECT one.

Ans  A.

The sum of the deflection angles of the traverse = 360 degrees.

B.

The sum of the external angles of the traverse = 1080 degrees.

C.

The sum of the external angles of the traverse = 1260 degrees.

D.

The sum of the interior angles of the traverse = 540 degrees.

Question ID : 276494868

Status : Answered

Chosen Option : B

**Q.84** As per IS 456 : 2000, in reinforced and plain concrete, for footings on piles, the thickness at the edge shall be NOT less than \_\_\_\_\_ above the top of piles.

Ans  A. 250 mm

B. 150 mm

C. 200 mm

D. 300 mm

Question ID : 276494946

Status : Answered

Chosen Option : D

**Q.85** As per IS 800 : 2007, in the design of laced columns, the ratio of thickness of the lacing flat to its effective length shall not be \_\_\_\_\_ if a single lacing system is adopted.

Ans  A. less than 1/60

B. greater than 1/40

C. less than 1/40

D. greater than 1/60

Question ID : 276494954

Status : Answered

Chosen Option : C

**Q.86** In structural steel design, splices are designed as:

Ans  A. flexural member

B. tension member

C. batten column

D. short column member

Question ID : 276494959

Status : Answered

Chosen Option : D

**Q.87** The speed at which (or) below which 85 per cent of vehicles passing a point on the highway can be assessed is known as:

- Ans
- A. 25<sup>th</sup> percentile speed
  - B. 20<sup>th</sup> percentile speed
  - C. 15<sup>th</sup> percentile speed
  - D. 85<sup>th</sup> percentile speed

Question ID : 276494918  
Status : Answered  
Chosen Option : D

**Q.88** Bitumen is derived from which of the following processes?

- Ans
- A. Destructive distillation of coal tar
  - B. Destructive distillation of petroleum
  - C. Fractional distillation of petroleum
  - D. Naturally occurring ores

Question ID : 276494916  
Status : Answered  
Chosen Option : B

**Q.89** What will be the target mean strength for M40 grade of concrete as per IS 10262 (2019)?

- Ans
- A. 45.775 N/mm<sup>2</sup>
  - B. 44.95 N/mm<sup>2</sup>
  - C. 46.6 N/mm<sup>2</sup>
  - D. 48.25 N/mm<sup>2</sup>

Question ID : 276494944  
Status : Answered  
Chosen Option : D

**Q.90** Match the items under list 1 (Terms used in Valuation) with those under list 2 (Definition of the Terms).

Term used in Valuation	Definition of the Term
P. Annuity due	1. Value of a structure becomes less due to out of date in style, design, etc.
Q. Rateable value	2. Payment of annuity begins at a future date, after a number of years.
R. Obsolescence	3. Net annual letting value of a property obtained by deducting yearly repair charges from gross income.
S. Deferred annuity	4. Amount of annuity paid at the beginning of each period of year, payment continued for a definite number of periods.

- Ans**
- A. P-2, Q-3, R-1, S-4
  - B. P-1, Q-3, R-2, S-4
  - C. P-4, Q-3, R-1, S-2
  - D. P-4, Q-3, R-2, S-1

Question ID : 276494859  
Status : Answered  
Chosen Option : C

**Q.91** In theodolite surveying, optical plummet is used:

- Ans**
- A. for accurate centring of the theodolite over a station
  - B. in optic theodolite for measuring angles
  - C. for compensating any tilt in the axis in electronic theodolites
  - D. for accurate levelling of theodolite

Question ID : 276494903  
Status : Answered  
Chosen Option : A

**Q.92** A steel member of 30 mm diameter is to be used as a tie member in the roof bracing system and may be subjected to possible reversal of stress due to wind load. What is maximum permissible length of the member, as per IS 800 : 2007?

- Ans**
- A. 5420
  - B. 2625
  - C. 1750
  - D. 2775

Question ID : 276494955  
Status : Not Answered  
Chosen Option : --

**Q.93** The dimensions of four types of burnt clay bricks P, Q, R, S and T taken from five sites are given below. Identify the bricks which fall under the category of standard modular size of common burnt clay building brick as per IS 1077 : 1992. (All dimensions of bricks are in mm.)

P :  $230 \times 110 \times 70$

Q :  $230 \times 110 \times 30$

R :  $190 \times 100 \times 90$

S :  $190 \times 90 \times 90$

T :  $190 \times 90 \times 40$

- Ans**
- A. P and Q only
  - B. S and T only
  - C. P, Q, and R only
  - D. P and R only

Question ID : 276494845  
Status : Answered  
Chosen Option : B

**Q.94** In a compass survey, if the observed for bearing of line PQ at station P is  $200^\circ 30'$ , then back bearing of the line at station Q is :

- Ans**
- A.  $20^\circ 30'$
  - B.  $110^\circ 30'$
  - C.  $69^\circ 30'$
  - D.  $159^\circ 30'$

Question ID : 276494862  
Status : Answered  
Chosen Option : A

**Q.95** The test prescribed by Bureau of Indian Standards to check the durability of building stones is:

- Ans**
- A. crystallisation test
  - B. Brard's Test
  - C. Smith test
  - D. acid test

Question ID : 276494842  
Status : Answered  
Chosen Option : D

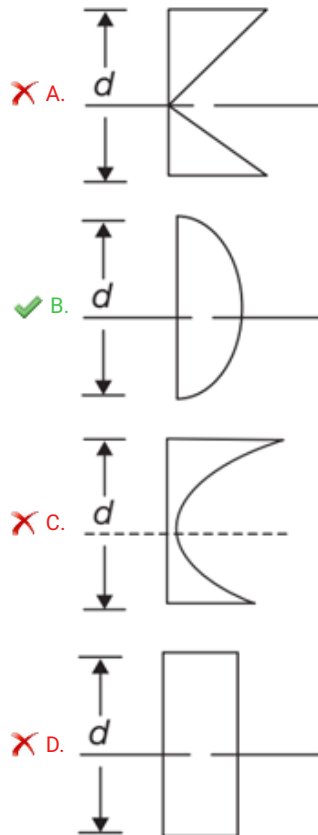
Q.96 If the liquidity index for a soil is 0.7, the consistency index will be:

- Ans  A. 0.3  
 B. 0.43  
 C. 1.3  
 D. 0.57

Question ID : 276494875  
Status : Answered  
Chosen Option : A

Q.97 The shear stress distribution diagram of a beam of rectangular cross-section, subjected to transverse loading will be:

Ans



Question ID : 276494929  
Status : Answered  
Chosen Option : B

Q.98 Find the rise of crown with respect to edges, area where rainfall is heavy, major district road (cross fall rate is 1/33) of WBM pavement 3.8 m wide to be constructed.

- Ans  A. 0.0577 m  
 B. 1.5800 m  
 C. 5.8000 m  
 D. 0.5800 m

Question ID : 276494914  
Status : Answered  
Chosen Option : A

Q.99 The ability of a water-saturated material to endure repeated freezing and thawing with considerable decrease of mechanical strength is known as:

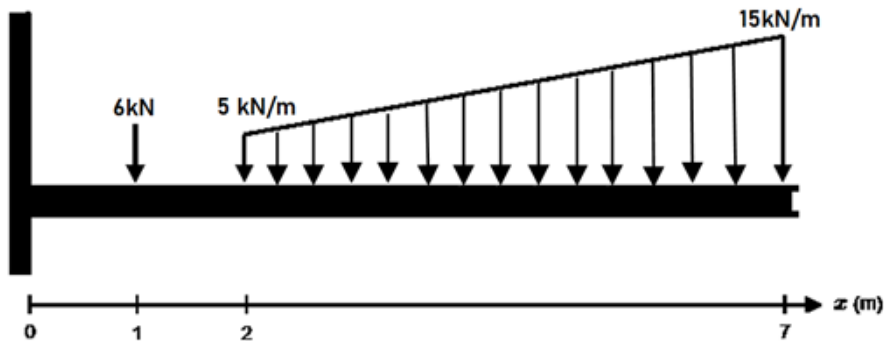
- Ans
- A. co-efficient of softening
  - B. weathering resistance
  - C. frost resistance
  - D. hygroscopicity

Question ID : 276494841

Status : Answered

Chosen Option : C

Q.100 Find bending moment at the fixed end.



- Ans
- A. 245.33 kN-m
  - B. 260 kN-m
  - C. 255 kN-m
  - D. 251.83 kN-m

Question ID : 276494934

Status : Answered

Chosen Option : D

Q.101 According to IS 800 : 2007, for laced columns in welded construction, the effective length of the lacing bar is \_\_\_\_\_ times the distance between the inner ends of the welds connecting lacing bars in the member.

- Ans
- A. 0.5
  - B. 0.7
  - C. 0.8
  - D. 1.2

Question ID : 276494956

Status : Answered

Chosen Option : B

**Q.102** The following statements (S1 and S2) pertain to the effect of moisture content in wood.

S1 : The physical and mechanical properties of wood are dependent on moisture content, for moisture content above the fibre saturation point.

S2 : Shrinkage of wood in the longitudinal direction is the least when compared to the radial and tangential directions, for change in the moisture content from the fibre saturation point to oven dry.

Identify whether the statements is/are true/false and select the most appropriate answer.

- Ans
- A. Statement S1 is true and statement S2 is false.
  - B. Statement S1 is false and statement S2 is true.
  - C. Both statements S1 and S2 are true.
  - D. Both statements S1 and S2 are false.

Question ID : 276494843

Status : Not Answered

Chosen Option : --

**Q.103** The following statements S1, S2 and S3 pertain to compaction on soils.

S1 : It is a time dependent phenomenon.

S2 : Soil is always unsaturated.

S3 : Densification of soil is due to expulsion of pore water from voids.

Identify the INCORRECT statement(s).

- Ans
- A. Only S1
  - B. Both S1 and S3
  - C. Both S2 and S3
  - D. Only S2

Question ID : 276494908

Status : Answered

Chosen Option : B

**Q.104** The following two statements pertain to contour lines.

S1 : A contour line must necessarily close upon itself, within the limits of the contour map.

S2 : The contour lines cross the ridge line or valley line at right angles.

Identify the validity of statements as true or false.

- Ans
- A. Statement S1 is true, but S2 is false.
  - B. Both statements S1 and S2 are false.
  - C. Both statements S1 and S2 are true.
  - D. Statement S1 is false, but S2 is true.

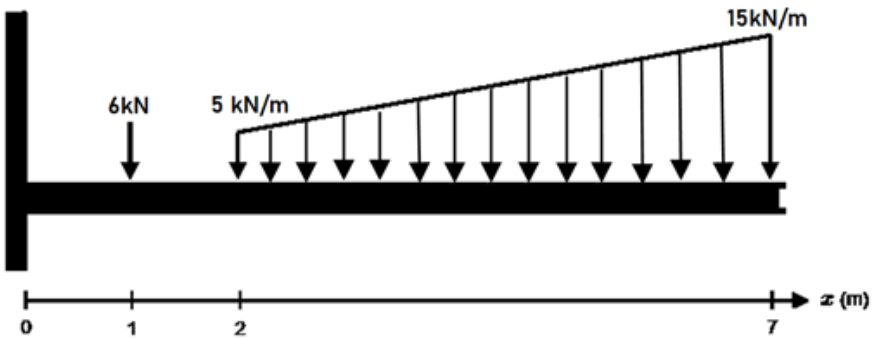
Question ID : 276494866

Status : Answered

Chosen Option : D



Q.105 Find shear force at 2 m from the fixed end.



- Ans
- A. 56 kN
  - B. 50 kN
  - C. 40 kN
  - D. 80 kN

Question ID : 276494935  
Status : Answered  
Chosen Option : B

Q.106 Which of the following types of water impurities causes discoloration of skin and eyes?

- Ans
- A. Hydrogen
  - B. Carbon dioxide
  - C. Chromium
  - D. Silver

Question ID : 276494922  
Status : Answered  
Chosen Option : C

Q.107 Identify the method that is NOT used for the determination of in situ unit weight of a compacted earth fill.

- Ans
- A. Sand replacement method
  - B. Water displacement method
  - C. Pycnometer method
  - D. Core cutter method

Question ID : 276494877  
Status : Answered  
Chosen Option : C

**Q.108** In estimation of quantity of plastering work for a wall with two openings of size  $0.4 \text{ m}^2$  and  $0.3 \text{ m}^2$  area the quantity of deduction allowed is:

Ans  A.

deduction of  $0.35 \text{ m}^2$  is allowed for one face area of the wall

B.

No deduction is allowed from the both face areas of the wall

C. deduction of  $0.7 \text{ m}^2$  is allowed for one face area of the wall

D.

deduction of  $0.7 \text{ m}^2$  is allowed for both face areas of the wall

Question ID : 276494857

Status : Answered

Chosen Option : B

**Q.109** Known the soil properties:  $e$  – void ratio,  $n$  – porosity,  $w$  – water content,  $G$  – specific gravity,  $S$  – degree of saturation,  $\gamma_{sat}$  – saturated unit weight of soil; and  $\gamma_w$  – unit weight of water. From among the following relations, identify the relation that is INCORRECT. Civil Junction

Ans

A. 
$$e = \frac{w G}{S}$$

B. 
$$\gamma_{sat} = \frac{G + e}{1 + e} \gamma_w$$

C. 
$$e = \frac{n}{1 - n}$$

D. 
$$n = \frac{e}{1 - e}$$

Question ID : 276494907

Status : Answered

Chosen Option : D

**Q.110** The expression for Poisson's ratio in terms of Young Modulus (E) and bulk modulus (K) of a material is :

Ans

A. 
$$\frac{3K - E}{6K}$$

B. 
$$\frac{6K}{3E - K}$$

C. 
$$\frac{2k - E}{3K}$$

D. 
$$\frac{3E - K}{12K}$$

Question ID : 276494927

Status : Answered

Chosen Option : A

**Q.111** If H is the height of a retaining wall, the most economical spacing of counterforts in a reinforced concrete counterfort retaining wall is:

- Ans
- A. 1/3 to 1/6 of H
  - B. 1/6 to 1/8 of H
  - C. 1/2 to 1/3 of H
  - D. 1/2 to 1/4 of H

Question ID : 276494953

Status : Not Answered

Chosen Option : --

**Q.112** Which of the following equipment can be used for estimating the discharge in pipe flow as well as open channel flow? (Assume cross-sectional area of pipe/open channel is known.)

- Ans
- A. Cipolletti weir
  - B. Orifice metre
  - C. Piezometer
  - D. Pitot tube

Question ID : 276494910

Status : Answered

Chosen Option : A

**Q.113** A closed cylindrical tank of height 2.3 m, partly filled with oil of specific gravity 0.8 to a depth of 2.0 m, has an air pressure of  $30 \text{ kN/m}^2$  above the oil. Find the pressure on the bottom of the tank (in  $\text{kN/m}^2$ ). (Take unit weight of water as  $10000 \text{ N/m}^3$ .)

- Ans
- A. 30
  - B. 46
  - C. 14
  - D. 16

Question ID : 276494911

Status : Answered

Chosen Option : B

**Q.114** Which of the following is NOT an assumption in Euler's theory?

- Ans
- A. The direct stress is very large as compared to the bending stress.
  - B. Column will fail by buckling only.
  - C. The cross-section of a column is uniform throughout the length.
  - D. The self-weight of the column is negligible.

Question ID : 276494930

Status : Answered

Chosen Option : A

Q.115 The 'Give way' traffic sign used for the control of traffic is \_\_\_\_\_ in shape.

- Ans
- A. hexagonal
  - B. octagonal
  - C. circular
  - D. triangular

Question ID : 276494921

Status : Answered

Chosen Option : C

Q.116 The variation in duty of water from the head of a main canal (M) to that in the field (F) is:

- Ans
- A. Duty of water at M can be greater or less than Duty of water at F
  - B. Duty of water at M is always greater than Duty of water at F
  - C. Duty of water at M is always equal to Duty of water at F
  - D. Duty of water at M is always less than Duty of water at F

Question ID : 276494893

Status : Answered

Chosen Option : D

Q.117 In the design of a barrage, the piezometric head at the bottom of the floor is estimated at 9 m. The datum is 3 m below the floor bottom. Assume the standing water depth above the floor is 2 m. Estimate the floor thickness. Take unit weight of water as  $10000 \text{ N/m}^3$ , and specific gravity of material of floor as 2.5.

- Ans
- A. 1.2 m
  - B. 2.4 m
  - C. 1.6 m
  - D. 2.0 m

Question ID : 276494891

Status : Not Answered

Chosen Option : --

Q.118 The observed N value from a standard penetration test conducted on a saturated sandy soil stratum is 33. The corrected N value for dilatancy can be estimated as:

- Ans
- A. 48
  - B. 15
  - C. 24
  - D. 17

Question ID : 276494874

Status : Answered

Chosen Option : A

**Q.119** Which statement regarding assumptions of Rankine's theory of earth pressure is INCORRECT?

- Ans
- A. Face of the wall that retains is vertical.
  - B. Frictional resistance between retaining wall and retained material is neglected.
  - C. The soil element is in state of plastic equilibrium, i.e. on the verge of failure.
  - D. Soil retained by the wall is cohesive in nature.

Question ID : 276494936  
Status : Not Answered  
Chosen Option : --

**Q.120** According to IS 10262 : 2009, the maximum water content per cubic metre of concrete for nominal maximum size of aggregate = 20 mm is:

- Ans
- A. 165 kg
  - B. 186 kg
  - C. 208 kg
  - D. 128 kg

Question ID : 276494942  
Status : Not Answered  
Chosen Option : --

# झारखण्ड कर्मचारी चयन आयोग

चाय बगान, कालीनगर, नामकोम, राँची-834010.

## झारखण्ड डिप्लोमा स्तर संयुक्त प्रतियोगिता परीक्षा

### आवश्यक सूचना

दिनांक-09.12.2022

झारखण्ड कर्मचारी चयन आयोग के विज्ञापन संख्या 06/2021 (नियमित रिक्ति) एवं 02/2022 (बैकलॉग रिक्ति) के आलोक में दिनांक 23.10.2022 से दिनांक 07.11.2022 तक सम्पन्न झारखण्ड डिप्लोमा स्तर संयुक्त प्रतियोगिता परीक्षा-2021 के अधीन सभी विषयों की औपबंधिक उत्तर कुंजी दिनांक 11.11.2022 को प्रकाशित की गई थी। औपबंधिक उत्तर कुंजी के विरुद्ध दिनांक 12.11.2022 से दिनांक 18.11.2022 बजे तक ऑन लाईन आपत्तियाँ प्राप्त की गईं।

2. औपबंधिक उत्तर कुंजी पर अभ्यर्थियों से प्राप्त आपत्तियों पर विशेषज्ञों की समिति द्वारा सम्यक विचारोपरान्त उक्त परीक्षा के अधीन निम्नलिखित प्रश्नों के उत्तर को संशोधित करते हुए अंतिम उत्तर कुंजी प्रकाशित की जाती है:-

क्रमांक	Question Id	औपबंधिक उत्तर	अंतिम उत्तर
1	2	3	4
Subject/ Post : Mechanical Engineering			
1	2764942767	23.5 N/mm <sup>2</sup>	X
2	2764942779	16%	4%
3	2764942875	-40°C, 357°C	X
4	2764941598	For same maximum pressure and temperature the cycle efficiency of Diesel cycle is more than Otto cycle	For same maximum pressure and temperature the heat supplied in Otto cycle is more than Diesel cycle
5	2764941602	The MEP can be used as parameter to compare the performance of reciprocating engines of equal size	X
6	2764941608	The mechanical efficiency increase	X
7	2764941658	to increase the effective head of water	X
Subject/ Post : Electrical Engineering			
1	2764942615	1.25 m	3.75
2	2764941104	7.95	X

क्रमांक	Question Id	औपबधिक उत्तर	अंतिम उत्तर
1	2	3	4
Subject/ Post : Civil Engineering			
1	2764941997	Ground level ozone	X
2	276494853	300	X
3	276494904	S 49°E	S 55°E
4	276494933	E = 2C (1+ $\mu$ )	X
5	2764941820	30.04 cm	X
6	2764941849	Vertical Fall	X
7	2764941892	Maximum free moment ordinate for AB= 170 kNm and BC= 330 kNm	Maximum free moment ordinate for AB=180 kNm and BC=320 kNm
8	2764941898	5 mm	X
9	2764941907	160mm	X
Subject/ Post : General Engineering and General Studies			
1	276494156	0.125 W	X
2	276494166	Super heater	X
3	276494225	A	X
4	2764942489	Binod Bihari Mahto	X
5	2764942508	Its radius increase	X
6	2764941712	1.5 A	X
7	2764941715	I= 5 ang (90°)	I= 5 ang (60°)
8	2764941725	very high	very small

क्रमांक	Question Id	औपबंधिक उत्तर	अंतिम उत्तर
1	2	3	4
9	2764941733	Negatively charge	electrically neutral
10	2764941736	saturated vapour state	X
11	2764941745	penetration	X
12	2764941777	Floor 5	
13	27649410	Compactive effort	Temperature
14	27649475	Otto cycle	X

3. उक्त प्रश्नों के अतिरिक्त अन्य सभी प्रश्नों की उत्तर कुंजी वही होगी जो औपबंधिक उत्तर कुंजी के माध्यम से संसूचित है।
4. स्तम्भ- 4 में जिन प्रश्नों के विरुद्ध X अंकित हैं, ऐसे प्रश्न रद्द प्रश्न हैं जिसमें उस विषय की परीक्षा में सम्मिलित अभ्यर्थियों को पूर्ण अंक प्रदान किये जायेंगे।
5. उक्त अंतिम उत्तर कुंजी के विरुद्ध किसी तरह की आपत्ति/ अभ्यावेदन मान्य नहीं होगा।

ह. / -  
परीक्षा नियंत्रक।