Chhattisgarh Public Service Commission

Notations :

1. Options shown in green color and with ✔ icon are correct.

2. Options shown in red color and with ✖ icon are incorrect.

Question Paper Name:	Civil Engineering 25th February 2018 Shift 2
Subject Name:	Civil Engineering
Duration:	150
Calculator:	None
Magnifying Glass Required?:	No
Ruler Required?:	No
Eraser Required?:	No
Scratch Pad Required?:	No
Rough Sketch/Notepad Required?:	No
Protractor Required?:	No

Civil Engineering

Group Maximum Duration :	0
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Revisit allowed for edit? :	No

Civil Engineering

Section Id :	34753548
Section Number :	1
Section type :	Online
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Display Number Panel:	Yes
Group All Questions:	No

Question Number : 1 Question Id : 3475353552 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A steel bar having cross sectional area of $100 \, \pi \, mm^2$ is subjected to a tensile force of 40 kN. Determine the tensile stress.

Options :

1. ✔ 127.23 MPa

2. ✖ 150 MPa

3. ✖ 175.25 MPa

4. ✖ 200.05 MPa

5. ✖ 160 MPa

Question Number : 2 Question Id : 3475353553 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Moment of inertia of a circle about XX plane:

Options :

1. ✔ $\pi d^4/64$

2. ✖ $bd^4/64$

3. ✖ $bd^3/12$

4. ✖ $bh^4/12$

5. ✖ $bh^4/16$

Question Number : 3 Question Id : 3475353554 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The stress in a steel bar is given as $25,0000 \text{ kN/m}^2$ and length of the bar is 50 mm. Calculate the shortening of the bar if $E = 2.14 \times 10^8 \text{ N/mm}^2$.

Options :

1. ✖ 0.160 mm

2. ✔ 0.0584 mm

3. ✖ 0.250 mm

4. ✖ 0.305 mm

5. ✖ 1.202 mm

Question Number : 4 Question Id : 3475353555 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

According to Mohr's circle, the shear stress is maximum when:

Options :

1. ✔ $\theta = 45°$

2. ✗ $\theta = 90°$

3. ✗ $\theta = 180°$

4. ✗ $\theta = 0°$

5. ✗ $\theta = 120°$

Question Number : 5 Question Id : 3475353556 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

In theories of failure, which theory states that no shearing stresses and shearing strains will be present anywhere in the block but only the volume changes?

Options :

1. ✗ Guest theory

2. ✗ St Venant theory

3. ✗ Prandl's theory

4. ✔ Distortion Energy theory

5. ✗ Bohr's theory

Question Number : 6 Question Id : 3475353557 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A simply supported beam carrying a uniformly distributed load of 8 kN/m per unit over the whole span of 3 m. What will be the maximum bending moment of the beam?

Options :

1. ✗ 8.34 kN-m

2. ✔ 9 kN-m

3. ✗ 12.20 kN-m

4. ✗ 15.17 kN-m

5. ✗ 3 kN-m

Question Number : 7 Question Id : 3475353558 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The power transmitted by the shaft is:

Options :

1. ✔ $P = \dfrac{2\pi NT}{60} \times 1000$

2. ✖ $P = \dfrac{2\pi NT}{30} \times 1000$

3. ✖ $P = \dfrac{2\pi NT}{30}$

4. ✖ $P = \dfrac{2\pi NT}{1000}$

5. ✖ $P = \dfrac{2\pi NT}{2000}$

Question Number : 8 Question Id : 3475353559 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

What will be the Euler buckling load of a column when it is fixed at one and free at other end?

Options :

1. ✖ $\dfrac{\pi^2 EI}{l^2}$

2. ✔ $\dfrac{\pi^2 EI}{4l^2}$

3. ✖ $\dfrac{2\pi^2 EI}{l^2}$

4. ✖ $\dfrac{4\pi^2 EI}{l^2}$

5. ✖ $\dfrac{4\pi^2 EI}{2l^2}$

Question Number : 9 Question Id : 3475353560 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Macaulay's method is also known as:

Options :

1. ✖ slope deflection method

2. ✖ moment distribution method

3. ✔ method of singularity functions

4. ✖ Kani's method

5. ✖ moment area method

Question Number : 10 Question Id : 3475353561 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Conjugate beam method can be directly used only for:

Options :

1. ✖ a cantilever beam

2. ✔ a simply supported beam

3. ✖ a continuous beam

4. ✖ an overhanging beam

5. ✖ either a cantilever beam or a continuous beam

Question Number : 11 Question Id : 3475353562 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A continuous beam has a fixed end at support A and roller support at B and C. What will be the degree of redundancy of the structure?

Options :

1. ✖ 3

2. ✖ 1

3. ✔ 2

4. ✖ 4

5. ✖ 6

Question Number : 12 Question Id : 3475353563 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Stiffness matrix method is also known as:

Options :

1. ✖ flexibility method

2. ✖ force method

3. ✖ compatibility method

4. ✔ equilibrium method

5. ✖ conjugate beam method

Question Number : 13 Question Id : 3475353564 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A beam element which is fixed at support A and roller at Support B. what will be slope defection equation at support A?

Options :

1. ✖
$$M_{AB} = M_{FAB} + \frac{2EI}{l\left[\theta_A + 2\theta_B + \frac{3\delta}{l}\right]}$$

2. ✖
$$M_{AB} = M_{FAB} + \frac{4EI}{l\left[2\theta_A + \theta_B + \frac{3\delta}{l}\right]}$$

3. ✔
$$M_{AB} = M_{FAB} + \frac{2EI}{l\left[2\theta_A + \theta_B + \frac{3\delta}{l}\right]}$$

4. ✖
$$M_{AB} = M_{FAB} + \frac{EI}{l\left[2\theta_A + \theta_B + \frac{3\delta}{l}\right]}$$

5. ✖
$$M_{AB} = M_{FAB} + \frac{EI}{l\left[2\theta_A + \theta_B + \frac{6\delta}{l}\right]}$$

Question Number : 14 Question Id : 3475353565 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A single load of 100 kN rolls along a girder of 20 m span. What will be the maximum positive shear force and bending moment?

Options :

1. ✘ 100 kN, 1,000 kN-m

2. ✘ 200 kN, 800 kN-m

3. ✔ 100 kN, 500 kN-m

4. ✘ 400 kN, 1,200 kN-m

5. ✘ 400 kN, 1,000 kN-m

Question Number : 15   Question Id : 3475353566   Question Type : MCQ   Display Question Number : Yes   Single Line Question Option : No   Option Orientation : Vertical

Correct : 2   Wrong : 0

A portal frame may sway due to:

   a) Eccentric loading on the portal frames.
   b) Non-uniform section of the member.

Select the true statement.

Options :

1. ✔ Both the statements (a) and (b) are true

2. ✘ Statement (a) alone is true

3. ✘ Statement (b) alone is true

4. ✘ Both the statements (a) and (b) is false

5. ✘ Information insufficient

Question Number : 16   Question Id : 3475353567   Question Type : MCQ   Display Question Number : Yes   Single Line Question Option : No   Option Orientation : Vertical

Correct : 2   Wrong : 0

What is the stiffness for a far end fixed beam?

Options :

1. ✘ $K = \dfrac{3EI}{L}$

2. ✔ $K = \dfrac{4EI}{L}$

3. ✘ $K = \dfrac{12EI}{L}$

4. ✖ $K = \dfrac{16\,EI}{L}$

5. ✖ $K = \dfrac{20EI}{L}$

Question Number : 17 Question Id : 3475353568 Question Type : MCQ Display Question Number : Yes Single Line Question
Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

For a two-way simply supported slab of shorter span (upto 3.5 m) with mild steel reinforcement, the span to overall depth is generally taken as:

Options :

1. ✔ 35

2. ✖ 45

3. ✖ 40

4. ✖ 20

5. ✖ 25

Question Number : 18 Question Id : 3475353569 Question Type : MCQ Display Question Number : Yes Single Line Question
Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 456:2000, the cross-sectional area of longitudinal reinforcement shall NOT be:

Options :

1. ✖ less than 1 per cent and more than 7 per cent of the gross sectional area

2. ✔ less than 0.8 per cent and more than 6 per cent of the gross sectional area

3. ✖ less than1.2 per cent and more than 4 per cent of the gross sectional area

4. ✖ less than 2 per cent and more than 8 per cent of the gross sectional area

5. ✖ less than 4 per cent and more than 10 per cent of the gross sectional area

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Question Number : 19 Question Id : 3475353570 Question Type : MCQ Display Question Number : Yes Single Line Question
Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The column strip with negative moment at an interior support shall be designed to resist _____ per cent of the total negative moment in the panel at that support.

Options :

1. ✖ 60

2. ✖ 80

3. ✖ 50

4. ✔ 75

5. ✖ 90

Question Number : 20 Question Id : 3475353571 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

In staircase design for a residential building, the rise may vary between:

Options :

1. ✖ 300 mm to 500 mm

2. ✔ 150 mm to 180 mm

3. ✖ 500 mm to 550 mm

4. ✖ 600 mm to 650 mm

5. ✖ 700 mm to 850 mm

Question Number : 21 Question Id : 3475353572 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

If p is the net downward pressure per unit area, the maximum negative bending moment near counterforts will be:

Options :

1. ✔ $\dfrac{(pl^2)}{12}$

2. ✖ $\dfrac{(pl^2)}{24}$

3. ✖ $\dfrac{(pl^3)}{24}$

4. ✖ $\dfrac{(pl^4)}{8}$

5. ✖ $\dfrac{(pl^3)}{48}$

Question Number : 22 Question Id : 3475353573 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 456:2000, in reinforced and plain concrete footings the thickness at the edge shall NOT be less than _____ for footings.

Options :

1. ✖ 25 cm

2. ✖ 50 cm

3. ✔ 15 cm

4. ✖ 35 cm

5. ✖ 55 cm

Question Number : 23 Question Id : 3475353574 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS code, for pre-tensioning the total residual shrinkage strain is:

Options :

1. ✖ 3×10^{-4}

2. ✔ 2×10^{-4}

3. ✖ 6×10^{-4}

4. ✖ 2.5×10^{-5}

5. ✖ 5.5×10^{-5}

Question Number : 24 Question Id : 3475353575 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The concrete used for post-tensioned system should have a cube strength of:

Options :

1. ✖ $60 \, \text{N/mm}^2$

2. ✖ $10 \, \text{N/mm}^2$

3. ✔ 30 N/mm²

4. ✘ 50 N/mm²

5. ✘ 20 N/mm²

Question Number : 25 Question Id : 3475353576 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 1343:1980, members having no tensile stress permitted under working conditions are known as:

Options :

1. ✘ limited pre-stressed members

2. ✘ partially pre-stressed members

3. ✘ half pre-stressed members

4. ✔ fully pre-stressed members

5. ✘ initially pre-stressed members

Question Number : 26 Question Id : 3475353577 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The minimum clear cover for post-tensioned members as per IS codal recommendations is:

Options :

1. ✔ 30 mm

2. ✘ 20 mm

3. ✘ 50 mm

4. ✘ 15 mm

5. ✘ 75 mm

Question Number : 27 Question Id : 3475353578 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The yield strength range for high strength quenched and tempered steels as per IS:2003 should be:

Options :

1. ✘ 600-650 MPa

2. ✔ 550-700 MPa

3. ✘ 710-820 MPa

4. ✘ 900-950 MPa

5. ✘ 1,000-950 MPa

Question Number : 28 Question Id : 3475353579 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 800 for a nominal diameter of 12 mm bolt, the diameter of the hole provided should be:

Options :

1. ✘ 15 mm

2. ✔ 13 mm

3. ✘ 20 mm

4. ✘ 24 mm

5. ✘ 50 mm

Question Number : 29 Question Id : 3475353580 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 816:1969 the width or diameter of the weld should be:

Options :

1. ✔ less than three times the thickness or 25 mm, whichever is greater

2. ✘ less than five times the thickness or 35 mm, whichever is greater

3. ✘ less than ten times the thickness or 45 mm, whichever is greater

4. ✘ less than two times the thickness or 50 mm, whichever is greater

5. ✘ less than five times the thickness or 70 mm, whichever is greater

Question Number : 30 Question Id : 3475353581 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The maximum effective slenderness ratio for a tension member in which reversal of direct stress occurs due to loads other than wind or seismic force:

Options :

1. ✔ 180

2. ✘ 220

3. ✘ 550

4. ✘ 430

5. ✘ 500

Question Number : 31 Question Id : 3475353582 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The effective length ratio for columns with both ends fixed is:

Options :

1. ✘ 1.2

2. ✘ 2.0

3. ✔ 0.5

4. ✘ 3.0

5. ✘ 4.2

Question Number : 32 Question Id : 3475353583 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A beam supporting floor construction but not a major beam is called as:

Options :

1. ✘ rafter

2. ✘ spandrel

3. ✘ girt

4. ✔ joist

5. ✘ strut

Question Number : 33 Question Id : 3475353584 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 800:2007, the resistance to shear buckling shall be verified when _____ for a unstiffened web.

Options :

1. ✔ $\dfrac{d}{t_w} > 67\varepsilon$

2. ✖ $\dfrac{d}{t_w} > 80\varepsilon$

3. ✖ $\dfrac{d}{t_w} > 75\varepsilon$

4. ✖ $\dfrac{d}{t_w} > 90\varepsilon$

5. ✖ $\dfrac{d}{t_w} > 100\varepsilon$

Question Number : 34 Question Id : 3475353585 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The maximum lateral deflection of a gantry girder between rails is:

Options :

1. ✔ L/400

2. ✖ L/500

3. ✖ L/700

4. ✖ L/600

5. ✖ L/800

Question Number : 35 Question Id : 3475353586 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Cross sections which can develop their plastic moment resistance, but have inadequate plastic hinge rotation capacity because of local buckling, are called as:

Options :

1. ✖ plastic sections

2. ✔ compact sections

3. ✖ semi-compact sections

4. ✖ slender sections

5. ✖ long sections

Question Number : 36 Question Id : 3475353587 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The pitch normally provided for corrugated galvanised iron (GI) sheets is:

Options :

1. ✖ 1/24 to 1/12

2. ✖ 1/48 to 1/12

3. ✔ 1/3 to 1/6

4. ✖ 1/10 to 1/15

5. ✖ 1/12 to 1/16

Question Number : 37 Question Id : 3475353588 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

In Bouge compounds, the main characteristics role of C2S is:

Options :

1. ✖ high heat of hydration

2. ✔ low heat of hydration

3. ✖ initial setting of cement

4. ✖ final setting of cement

5. ✖ early strength development

Question Number : 38 Question Id : 3475353589 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The aggregate crushing value for concrete as per Indian conditions varies from:

Options :

1. ✔ 30-45 percent

2. ✖ 18-27 percent

3. ✖ 50-65 percent

4. ✖ 5-10 percent

5. ✖ 15-20 percent

Question Number : 39 Question Id : 3475353590 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

What is the effective length of the wall when the wall is supported by a buttress or cross-wall?

Options :

1. ✔ 1.0 L

2. ✖ 0.5 L

3. ✖ 2.0 L

4. ✖ 2.5 L

5. ✖ 5.0 L

Question Number : 40 Question Id : 3475353591 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The PVCN range of paint for prime coat on metals is:

Options :

1. ✖ 55-60

2. ✔ 25-40

3. ✖ 10-15

4. ✖ 50-70

5. ✖ 75-90

Question Number : 41 Question Id : 3475353592 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 4031-1988, the heat of hydration of low-heat Portland cement for 7 days should not be more than _____ calories per gram.
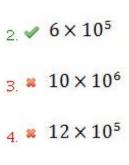
Options :

1. ✖ 90

2. ✖ 100

3. ✔ 65

4. ✖ 120

5. ✖ 160

Question Number : 42 Question Id : 3475353593 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Compaction of granular soils are generally done by:

Options :

1. ✔ vibratory rollers

2. ✖ trenching machine

3. ✖ grader

4. ✖ clamshell

5. ✖ grinder

Question Number : 43 Question Id : 3475353594 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A real fluid in which the shear stress is directly proportional to the rate of shear strain is known as:

Options :

1. ✖ ideal plastic fluid

2. ✖ ideal fluid

3. ✖ non-Newtonian fluid

4. ✔ Newtonian fluid

5. ✖ non-ideal fluid

Question Number : 44 Question Id : 3475353595 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Pressure of a fluid is measured by a:

Options :

1. ✖ barometer

2. ✔ manometer

3. ✖ thermometer

4. ✖ lactometer

5. ✖ pivot tube

Question Number : 45 Question Id : 3475353596 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A point through which the force of buoyancy is supposed to act is called:

Options :

1. ✖ buoyancy

2. ✔ centre of buoyancy

3. ✖ metacentre

4. ✖ metacentric height

5. ✖ submerged height

Question Number : 46 Question Id : 3475353597 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

_____ is a device used for measuring the rate of flow in a fluid flowing through a pipe.

Options :

1. ✖ Speedometer

2. ✖ Odometer

3. ✔ Venturimeter

4. ✖ Barometer

5. ✖ Lactometer

Question Number : 47 Question Id : 3475353598 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Water is flowing through a pipe of diameter 200 mm with a velocity 3 m/s. Find the Reynold's number if the kinematic viscosity of water is 0.01 stoke.

Options :

1. ✖ 3×10^6

2. ✔ 6×10^5

3. ✖ 10×10^6

4. ✖ 12×10^5

5. ✖ 15×10^5

Question Number : 48 Question Id : 3475353599 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The dimensional constant for discharge is:

Options :

1. ✖ T^{-1}

2. ✖ $L^2 T^{-1}$

3. ✔ $L^3 T^{-1}$

4. ✖ ML^{-3}

5. ✖ ML^{-4}

Question Number : 49 Question Id : 3475353600 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

When the Froude number is greater than one, the type of flow is known as:

Options :

1. ✔ shooting flow

2. ✖ tranquil flow

3. ✖ critical flow

4. ✖ ideal flow

5. ✖ either tranquil flow or ideal flow

Question Number : 50 Question Id : 3475353601 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Select the true statement.

   i.   Hydraulic jump occurs when a supercritical stream meets a subcritical stream of sufficient depth.
   ii.   Hydraulic jump occurs when a supercritical stream meets a critical stream of sufficient depth.

Options :

1. ✖ Both the statements (i) and (ii) are true

2. ✖ Statement (ii) alone is true

3. ✔ Statement (i) alone is true

4. ✖ Both the statements (i) and (ii) is false

5. ✖ Information insufficient

Question Number : 51 Question Id : 3475353602 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A turbine develops 500 kW power under a head of 100 m at 200 rpm. What would be its normal speed under a head of 81 m?

Options :

1. ✖ 250 rpm

2. ✖ 550 rpm

3. ✔ 180 rpm

4. ✖ 670 rpm

5. ✖ 900 rpm

Question Number : 52 Question Id : 3475353603 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The gross commanded area for a distributary area is 10,000 hectare, 75% of which can be irrigated. The intensity of irrigation for the Rabi season is 60%. If the average duty at the head of the distributary is 2,500 hectares per cumec for the Rabi season, determine the discharge required at the head of distributary from average demand consideration.

Options :

1. ✖ 5 cumec

2. ✔ 1.8 cumec

3.   * 10 cumec

4.   * 25 cumec

5.   * 34 cumec

Question Number : 53 Question Id : 3475353604 Question Type : MCQ Display Question Number : Yes Single Line Question
Option : No Option Orientation : Vertical
Correct : 2 Wrong : 0
The temperature at which the air mass just becomes saturated if cooled at a constant pressure with moisture neither added nor removed is called the:
Options :

1.   * mean daily temperature

2.   ✔ dew point

3.   * degree day

4.   * normal daily temperature

5.   * average daily temperature

Question Number : 54 Question Id : 3475353605 Question Type : MCQ Display Question Number : Yes Single Line Question
Option : No Option Orientation : Vertical
Correct : 2 Wrong : 0
_____ is a non-automatic type rain gauge used by the Meteorological Department of the Government of India.
Options :

1.   ✔ Symon's rain gauge

2.   * Weighing bucket rain gauge

3.   * Tipping bucket type rain gauge

4.   * Float type rain gauge

5.   * Inglis type rain gauge

Question Number : 55 Question Id : 3475353606 Question Type : MCQ Display Question Number : Yes Single Line Question
Option : No Option Orientation : Vertical
Correct : 2 Wrong : 0
The Inglis formula for calculating flood discharge is normally suited for:
Options :

1. ✖ Madras catchments

2. ✖ old Hyderabad catchments

3. ✔ former Bombay catchments

4. ✖ American catchments

5. ✖ Arctic catchments

Question Number : 56 Question Id : 3475353607 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

_____ springs are formed when the downward passage of ground water in a permeable deposit is hindered by an underlying impervious layer.

Options :

1. ✖ Valley

2. ✔ Stratum

3. ✖ Artesian

4. ✖ Fault

5. ✖ Both valley and fault

Question Number : 57 Question Id : 3475353608 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Select the correct option considering the following statements.

a) The effective rainfall is uniformly distributed within its duration of specified period of time.
b) The effective rainfall is distributed throughout the whole area of the drainage basin.

Options :

1. ✖ Statement (a) alone is true

2. ✖ Statement (b) alone is true

3. ✖ Both the statements (a) and (b) are false

4. ✔ Both the statements (a) and (b) are true

5. ✖ Information insufficient

Question Number : 58 Question Id : 3475353609 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

In a _____ dam, the external forces are resisted by the weight of the dam.

Options :

1. ✔ gravity

2. ✘ rigid

3. ✘ arch

4. ✘ earth

5. ✘ buttress

Question Number : 59 Question Id : 3475353610 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

What is the normal range of moderate intensity rainfall?

Options :

1. ✘ 7.5 mm/hr – 10.5 mm/hr

2. ✘ 1.0 mm/hr – 1.5 mm/hr

3. ✔ 2.5 mm/hr – 7.5 mm/hr

4. ✘ 8 mm/hr – 10 mm/hr

5. ✘ 12 mm/hr – 15 mm/hr

Question Number : 60 Question Id : 3475353611 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Which type of drainage system consists of laterals and sub-mains in which laterals are provided only one side of a sub-main?

Options :

1. ✘ Double main system

2. ✔ Grid iron layout

3. ✘ Herring bone pattern

4. ✘ Natural system

5. ✖ Radial system

Question Number : 61 Question Id : 3475353612 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The maximum scour depth for a severe bend is:

Options :

1. ✖ 2.0 R

2. ✔ 1.70 R

3. ✖ 5.0 R

4. ✖ 8.5 R

5. ✖ 13.1 R

Question Number : 62 Question Id : 3475353613 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Fire hydrants are usually fitted in the water mains about _____ apart.

Options :

1. ✖ 50-60 m

2. ✖ 25-40 m

3. ✖ 150-200 m

4. ✔ 100-150 m

5. ✖ 160-200 m

Question Number : 63 Question Id : 3475353614 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

For disinfection of water with ultraviolet rays, the turbidity should not exceed:

Options :

1. ✔ 15 mg/l

2. ✖ 25 mg/l

3. ✖ 50 mg/l

4. ✖ 75 mg/l

5. ✖ 85 mg/l

Question Number : 64 Question Id : 3475353615 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

_____ valve is used to remove the entire water within a pipe after closing the supply.

Options :

1. ✖ Sluice

2. ✔ Scour

3. ✖ Reflux

4. ✖ Air

5. ✖ Pressure release

Question Number : 65 Question Id : 3475353616 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Out of the following distribution systems, which have the least number of cut-off valves?

Options :

1. ✖ Ring system

2. ✖ Radial system

3. ✔ Dead end system

4. ✖ Grid iron system

5. ✖ Rectangular system

Question Number : 66 Question Id : 3475353617 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The permissible pH limit of industrial effluent discharges into inland surface water as per IS 2490 (1974) is:

Options :

1. ✖ $10 - 15$

2. ✔ $5.5 - 9.0$

3. ✖ $22 - 25$

4. ✖ $15 - 20$

5. ✖ $25 - 30$

Question Number : 67 Question Id : 3475353618 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The efficiency of biochemical oxygen demand (BOD) removal in trickling filter is:

Options :

1. ✔ 98%

2. ✖ 75%

3. ✖ 56%

4. ✖ 65%

5. ✖ 82%

Question Number : 68 Question Id : 3475353619 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The minimum moisture content usually recommended for high rate composting of municipal solid waste management is:

Options :

1. ✖ $65 - 70\%$

2. ✖ $80 - 85\%$

3. ✔ $50 - 55\%$

4. ✖ $25 - 30\%$

5. ✖ $15 - 20\%$

Question Number : 69 Question Id : 3475353620 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Tropical grasslands receive _____ cm of annual precipitation.

Options :

1. ✖ $25 - 100$

2. ✖ $30 - 45$

3. ✔ upto 150

4. ✘ 200 – 210

5. ✘ upto 200

Question Number : 70 Question Id : 3475353621 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct : 2 Wrong : 0

Activated sludge process is an example of _____ growth process.

Options :

1. ✘ anaerobic suspended

2. ✔ aerobic suspended

3. ✘ aerobic attached

4. ✘ anaerobic attached

5. ✘ facultative attached

Question Number : 71 Question Id : 3475353622 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct : 2 Wrong : 0

Which of the following is a secondary air pollutant?

Options :

1. ✘ Carbon monoxide

2. ✘ Sulphur dioxide

3. ✔ Ozone

4. ✘ Carbon dioxide

5. ✘ Sulphur trioxide

Question Number : 72 Question Id : 3475353623 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct : 2 Wrong : 0

Bulk unit weight is the:

Options :

1. ✔ the total weight of a soil mass per unit of its total volume

2. ✖ weight of solids per unit of its total volume of the soil mass

3. ✖ unit weight of soil solids per unit volume of solids

4. ✖ mass of solids per unit of total volume of the soil mass

5. ✖ mass of dry solids per unit of total volume of the soil mass

Question Number : 73 Question Id : 3475353624 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The minimum quantity of soil specimen to be taken for testing water content by oven drying method for 2 mm IS sieve:

Options :

1. ✖ 200 g

2. ✖ 1,000 g

3. ✔ 50 g

4. ✖ 100 g

5. ✖ 120 g

Question Number : 74 Question Id : 3475353625 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The coefficient of permeability of silt is:

Options :

1. ✖ 1×10^{-6} cm/s and smaller

2. ✔ 5×10^{-4} cm/s $- 1 \times 10^{-5}$ cm/s

3. ✖ 1.0 cm/s and greater

4. ✖ $1.0 - 1 \times 10^{-2}$ cm/s

5. ✖ $1.5 - 2 \times 10^{-2}$ cm/s

Question Number : 75 Question Id : 3475353626 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

_____ failure is a mode of failure in a very deep footing in dense sand.

Options :

1. ✔ Punching shear

2. ✘ General shear

3. ✘ Local shear

4. ✘ Buckling

5. ✘ Twisting

Question Number : 76 Question Id : 3475353627 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Dynamic formulae are best suited for:

Options :

1. ✘ silt

2. ✔ coarse grained soils

3. ✘ clayey soil

4. ✘ fine grained soil

5. ✘ alluvial soil

Question Number : 77 Question Id : 3475353628 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A wooden pile is being driven with a drop hammer weighing 20 kN and having a free fall of 1.0 m. The penetration in the last blow is 5 mm. Determine the load bearing capacity of the pile according to the Engineering News formula.

Options :

1. ✘ 220 kN

2. ✘ 500.04 kN

3. ✘ 756 .20 kN

4. ✔ 111.11 kN

5. ✘ 52.67 kN

Question Number : 78 Question Id : 3475353629 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Determine the value of critical hydraulic gradient for a loose deposit of sand having a void ratio of 0.67 and specific gravity of 2.67.

Options :

1. ✖ 5

2. ✔ 1

3. ✖ 10

4. ✖ 2

5. ✖ 12

Question Number : 79 Question Id : 3475353630 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS:2974 Part I, the size of the foundation block (in plan) should be larger than the bed plate of the machine with a minimum all-round clearance of:

Options :

1. ✖ 70 cm

2. ✖ 110 cm

3. ✔ 15 cm

4. ✖ 25 cm

5. ✖ 10 cm

Question Number : 80 Question Id : 3475353631 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 8009 Part I:1976, the influence factor for rigid square footing is:

Options :

1. ✔ 0.82

2. ✖ 1.00

3. ✖ 1.56

4. ✖ 2.20

5. ✖ 5.62

Question Number : 81   Question Id : 3475353632   Question Type : MCQ   Display Question Number : Yes   Single Line Question Option : No   Option Orientation : Vertical

Correct : 2   Wrong : 0

In any case, to get a well-proportioned or well-shaped triangle, no angle should be less than:

Options :

1. ✖ 20°

2. ✔ 30°

3. ✖ 45°

4. ✖ 90°

5. ✖ 180°

Question Number : 82   Question Id : 3475353633   Question Type : MCQ   Display Question Number : Yes   Single Line Question Option : No   Option Orientation : Vertical

Correct : 2   Wrong : 0

The magnetic bearing of a line AB is S 48°24'. Calculate the true bearing if the magnetic declination is E 5°38'.

Options :

1. ✖ 42°44'

2. ✖ 20°56'

3. ✔ 54°02'

4. ✖ 53°98'

5. ✖ 59°28'

Question Number : 83   Question Id : 3475353634   Question Type : MCQ   Display Question Number : Yes   Single Line Question Option : No   Option Orientation : Vertical

Correct : 2   Wrong : 0

The line passing through the intersection of the horizontal and vertical cross hairs and optical centre of the object glass and its continuation is called:

Options :

1. ✖ the line of sight

2. ✖ the line of collimation

3. ✔ the line of sight as well as the line of collimation

4. ✖ the axis of level tube

5. ✖ the centre line

Question Number : 84 Question Id : 3475353635 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A surveyor measured the distance between two points on the plan drawn to a scale 1 cm = 40 m and the result was 468 m. Later however, he discovered that he had used a scale of 1 cm = 20 m. Find the true distance between the two points.

Options :

1. ✖ 1023 m

2. ✖ 451 m

3. ✖ 220 m

4. ✔ 936 m

5. ✖ 810 m

Question Number : 85 Question Id : 3475353636 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The process of determining the differences of elevations of stations from observed vertical angles and known distances is known as:

Options :

1. ✔ trigonometrical levelling

2. ✖ radiation method

3. ✖ resection method

4. ✖ intersection method

5. ✖ tacheometric levelling

Question Number : 86 Question Id : 3475353637 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Instrument used for ocean sounding where the depth of water is too much, and to make a continuous and accurate record of the depth of water below the boat or ship at which it is installed, is called as:

Options :

1. ✖ Sounding machine

2. ✔ Fathometer

3. ✖ Barometer

4. ✖ Lactometer

5. ✖ Pycnometer

Question Number : 87 Question Id : 3475353638 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The point on the upper portion of the celestial sphere marked by the plumb line above the observer is called the:

Options :

1. ✖ celestial sphere

2. ✖ terrestrial pole

3. ✔ zenith

4. ✖ sensible horizon

5. ✖ celestial square

Question Number : 88 Question Id : 3475353639 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

_____ is the process of rephotographing an aerial photograph so that the effects of tilt are eliminated.

Options :

1. ✔ Rectification

2. ✖ Reflection

3. ✖ Radiation

4. ✖ Refraction

5. ✖ Diffraction

Question Number : 89 Question Id : 3475353640 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A flagpole appears in two successive photographs taken at an altitude of 2,000 m above datum. The focal length of the camera is 120 mm and the length of the air base is 200 m. The parallax for the top of the pole is 52.52 mm and for the bottom is 48.27 mm. Find the difference in elevation between the top and the bottom of the pole.

Options :

1. ✖ 55 m

2. ✔ 44.2 m

3. ✖ 67 m

4. ✖ 30 m

5. ✖ 50 m

Question Number : 90 Question Id : 3475353641 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

According to the Indian Roads Congress (IRC) Standards, the length of the horizontal transition curve for a plain and rolling terrain is given by the expression:

Options :

1. ✔ $L_S = 2.7\dfrac{V^2}{R}$

2. ✖ $L_S = 3.7\dfrac{V^4}{R}$

3. ✖ $L_S = 5.7\dfrac{V^2}{R}$

4. ✖ $L_S = 7.7\dfrac{V^3}{R}$

5. ✖ $L_S = 8.2\dfrac{V^4}{R}$

Question Number : 91 Question Id : 3475353642 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The minimum width of carriageway for a single lane as per the Indian Roads Congress (IRC) is:

Options :

1. ✖ 5.5 m

2. ✔ 3.75 m

3. ✖ 7.5 m

4. ✖ 7.0 m

5. ✖ 8.25 m

Question Number : 92 Question Id : 3475353643 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per the Indian Roads Congress (IRC), intermediate sight distance is:

Options :

1. ✖ thrice the headlight sight distance

2. ✔ twice the stopping sight distance

3. ✖ twice the headlight sight distance

4. ✖ equal to headlight sight distance

5. ✖ half the headlight sight distance

Question Number : 93 Question Id : 3475353644 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per the Indian Roads Congress (IRC), the passenger car unit values (PCU) value for motorcycles and scooters is:

Options :

1. ✖ 4

2. ✖ 0.50

3. ✔ 0.75

4. ✖ 1

5. ✖ 1.5

Question Number : 94 Question Id : 3475353645 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

What is the coefficient of friction on rail surface in a very wet condition?

Options :

1. ✔ 0.25

2. ✖ 1.25

3. ✖ 3.20

4. ✖ 4.0

5. ✖ 4.5

Question Number : 95 Question Id : 3475353646 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The minimum gauge width of a feeder track gauge as per Indian conditions is:

Options :

1. ✖ 1.0 m

2. ✖ 0.762 m

3. ✖ 1.67 m

4. ✔ 0.610 m

5. ✖ 1.047 m

Question Number : 96 Question Id : 3475353647 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The range of heel clearance for broad gauge for Indian conditions is:

Options :

1. ✖ 9.8 to 10.4 cm

2. ✔ 13.7 to 13.3 cm

3. ✖ 20.5 to 21 cm

4. ✖ 15.6 to 16.1 cm

5. ✖ 21.5 to 24.2 cm

Question Number : 97 Question Id : 3475353648 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

When a branch line from the main line or a loop line terminates at a dead end with a buffer stop, it is known as a:

Options :

1. ✖ loop

2. ✖ trailing turnout

3. ✔ siding

4. ✖ split turnout

5. ✖ crosscut

Question Number : 98 Question Id : 3475353649 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Semaphore-type signals are used when the maintenance or repair work is more than:

Options :

1. ✖ 4 days

2. ✖ 1 week

3. ✖ 2 days

4. ✔ 3 days

5. ✖ 15 days

Question Number : 99 Question Id : 3475353650 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A flow in which fluid moves rapidly inwards towards a point where it disappears at a constant rate, is called as:

Options :

1. ✔ Sink flow

2. ✖ Compressible flow

3. ✖ Incompressible flow

4. ✖ Steady flow

5. ✖ Non laminar flow

Question Number : 100 Question Id : 3475353651 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A small-sized curved pipe made of flexible material, about $75\ cm$ in length, and forming a flexible connection between water min and the service pipe is called a:

Options :

1. ✖ ferrule

2. ✔ goose neck

3. ✖ water meter

4. ✖ stop cock

5. ✖ bib cock

Question Number : 101 Question Id : 3475353652 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The Environment Protection Act came into effect in the year:

Options :

1. ✖ 1990

2. ✖ 1972

3. ✖ 1981

4. ✔ 1986

5. ✖ 2001

Question Number : 102 Question Id : 3475353653 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 10500, the maximum allowable concentration of fluorides in drinking water is:

Options :

1. ✔ 1.50 mg/l

2. ✖ 9.10 mg/l

3. ✖ 4.50 mg/l

4. ✖ 11.30 mg/l

5. ✖ 15.00 mg/l

Question Number : 103 Question Id : 3475353654 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Peak lag in reservoir planning denotes:

Options :

1. ✔ time for maximum inflow – time for maximum outflow

2. ✖ time for maximum outflow – time for maximum inflow

3. ✖ time for minimum inflow – time for maximum outflow

4. ✖ time for maximum outflow – time for minimum outflow

5. ✖ time form minimum outflow – time for maximum outflow

Question Number : 104 Question Id : 3475353655 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Time-dependent strain is termed as:

Options :

1. ✖ elastic strain

2. ✖ ultimate creep strain

3. ✔ creep

4. ✖ shrinkage

5. ✖ plastic shrinkage

Question Number : 105 Question Id : 3475353656 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The creep coefficient at 28 days loading is:

Options :

1. ✖ 2.2

2. ✖ 1.1

3. ✔ 1.6

4. ✖ 3.2

5. ✖ 5.7

Question Number : 106 Question Id : 3475353657 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A bulkhead may also serve as a:

Options :

1. ✖ beam

2. ✖ slab

3. ✔ pier

4. ✖ footing

5. ✖ wall

Question Number : 107 Question Id : 3475353658 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 456:2000, the flexural strength of concrete at 28 days of ageing is related to compressive strength by the equation:

Options :

1. ✔ $0.7\sqrt{fck}$

2. ✖ $0.50\sqrt{fck}$

3. ✖ $1.25\sqrt{fck}$

4. ✖ $1.55\sqrt{fck}$

5. ✖ $2.75\sqrt{fck}$

Question Number : 108 Question Id : 3475353659 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The thermal coefficient of concrete is:

Options :

1. ✖ $0.5 \times 10^{-6}/^{\circ}C - 1 \times 10^{-6}/^{\circ}C$

2. ✔ $8 \times 10^{-6}/^{\circ}C - 10 \times 10^{-6}/^{\circ}C$

3. ✖ $25 \times 10^{-6}/^{\circ}C - 20 \times 10^{-6}/^{\circ}C$

4. ✖ $4.5 \times 10^{-6}/^{\circ}C - 2.5 \times 10^{-6}/^{\circ}C$

5. ✖ $30 \times 10^{-6}/^{\circ}C - 35 \times 10^{-6}/^{\circ}C$

Question Number : 109 Question Id : 3475353660 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A square steel rod 20 mm × 20 mm in section is to carry an axial load of 100 kN. Calculate the stress.

Options :

1. ✔ $2,50,000 \, kN/m^2$

2. ✖ $1,50,000 \, kN/m^2$

3. ✖ $3,50,000 \, kN/m^2$

4. ✖ $4,50,000 \, kN/m^2$

5. ✖ $6,50,000 \, kN/m^2$

Question Number : 110 Question Id : 3475353661 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The plane which pass through the point in such a manner that the resultant stress across them is totally a normal stress is called:

Options :

1. ✖ Minor axis plane

2. ✔ Principle plane

3. ✖ Major stress plane

4. ✖ Major axis plane

5. ✖ All of the other options

Question Number : 111 Question Id : 3475353662 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

What is the bending moment at the mid span of a simply supported beam carrying a uniformly varying beam?

Options :

1. ✖ $\dfrac{Wl^3}{8}$

2. ✖ $\dfrac{Wl^3}{16}$

3. ✖ $\dfrac{Wl^4}{48}$

4. ✔ $\dfrac{Wl^2}{12}$

5. ✖ $\dfrac{Wl^2}{24}$

Question Number : 112 Question Id : 3475353663 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

In thick cylinders, the circumferential stress:

Options :

1. ✖ is zero

2. ✔ varies along the thickness

3. ✖ does not vary along the thickness

4. ✖ is maximum at the centre

5. ✖ is related to none of the other options

Question Number : 113 Question Id : 3475353664 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Ordinary moment resisting frames should not be used in seismic:

Options :

1. ✔ zones IV, V

2. ✖ zone II

3. ✖ zone III with importance factor greater than 1

4. ✖ zone II, III

5. ✖ can used in all 5 zones

Question Number : 114 Question Id : 3475353665 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 800:2007 the size of a fillet weld should not be less than _____ mm nor more than the thickness of the thinner part.

Options :

1. ✖ 2

2. ✖ 5

3. ✔ 3

4. ✖ 10

5. ✖ 12

Question Number : 115 Question Id : 3475353666 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The shape factor for a rectangular section is:

Options :

1. ✔ 1.50

2. ✖ 2.0

3. ✖ 2.34

4. ✖ 1.22

5. ✖ 1.8

Question Number : 116 Question Id : 3475353667 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The maximum slenderness ratio of a compression member carrying loads resulting from dead loads and superimposed loads is:

Options :

1. ✖ 250

2. ✔ 180

3. ✖ 50

4. ✖ 350

5. ✖ 145

Question Number : 117 Question Id : 3475353668 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The main role of dicalcium silicate compound in cement is:

Options :

1. ✖ for flash set

2. ✖ to retard the flash setting of cement

3. ✔ to provide ultimate later-age strength

4. ✖ to provide colour effect in cement

5. ✖ both, for flash set and to provide ultimate later-age strength

Question Number : 118 Question Id : 3475353669 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The required workability of concrete in terms of slump for an ordinary reinforced cement concrete (RCC) work for beams and slabs is:

Options :

1. ✖ 25 – 30 mm

2. ✖ 40 – 45 mm

3. ✔ 50 – 100 mm

4. ✖ 120 – 150 mm

5. ✖ more than 150 mm

Question Number : 119 Question Id : 3475353670 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 456:2000, the maximum shear stress for M20 grade of concrete is:

Options :

1. ✖ 1.0 N/mm^2

2. ✔ 2.8 N/mm^2

3. ✖ 1.8 N/mm^2

4. ✖ 3.8 N/mm^2

5. ✖ 3.3 N/mm^2

Question Number : 120 Question Id : 3475353671 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

For beams the maximum area of tension reinforcement with HYSD bars shall not exceed:

Options :

1. ✔ 0.04 bD

2. ✖ 0.12 bD

3. ✖ 0.06 bD

4. ✖ 0.015 bD

5. ✖ 0.22 bD

Question Number : 121 Question Id : 3475353672 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

For a column member, as per IS: 456:2000 the cross-sectional area of longitudinal reinforcement should not be more than:

Options :

1. ✖ 8 percent of the gross sectional area

2. ✖ 12 percent of the gross sectional area

3. ✔ 6 percent of the gross sectional area

4. ✖ 10 percent of the gross sectional area

5. ✖ 9 percent of the gross sectional area

Question Number : 122 Question Id : 3475353673 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

In residential buildings, the rise may vary between:

Options :

1. ✔ 150 to 180 mm

2. ✖ 200 to 250 mm

3. ✖ 50 to 75 mm

4. ✖ 100 to 120 mm

5. ✖ 275 to 300 mm

Question Number : 123 Question Id : 3475353674 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A pycnometer is used to determine the:

Options :

1. ✖ liquid index of soil

2. ✖ plastic index of soil

3. ✖ shrinkage in soil

4. ✔ specific gravity of soil

5. ✖ voids present in soil

Question Number : 124 Question Id : 3475353675 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The coefficient of permeability of a fine sand is

Options :

1. ✖ $5 \times 10^{-4} - 1 \times 10^{-5}$ cm/sec

2. ✖ $1 \times 10^{-4} - 2.5 \times 10^{-5}$ cm/sec

3. ✔ $5 \times 10^{-2} - 1 \times 10^{-3}$ m/sec

4. ✖ $6.5 \times 10^{-3} - 1.2 \times 10^{-5}$ cm/sec

5. ✖ $6.2 \times 10^{-4} - 7 \times 10^{-5}$ cm/sec

Question Number : 125 Question Id : 3475353676 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Piles, which are used to protect waterfront structures against the impact from ships and other floating objects, are called:

Options :

1. ✔ fender piles

2. ✖ anchor piles

3. ✖ friction piles

4. ✖ end-bearing piles

5. ✖ compaction piles

Question Number : 126 Question Id : 3475353677 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per the National Building Code of India 2016, the safe bearing capacity of a cohesion less fine loose dry sand is:

Options :

1. ✖ $440 \ kN/m^2$

2. ✖ $300 \ kN/m^2$

3. ✔ $100 \ kN/m^2$

4. ✖ $500 \ kN/m^2$

5. ✖ $550 \ kN/m^2$

Question Number : 127 Question Id : 3475353678 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Choose the correct statement.

   a) The strength of fully compacted concrete is inversely proportional to the water cement ratio.
   b) The strength of fully compacted concrete is directly proportional to the water cement ratio.

Options :

1. ✔ Statement (a) is true

2. ✖ Statement (b) is true

3. ✖ Both the statements (a) and (b) are true

4. ✖ Both the statements (a) and (b) are false

5. ✖ Information insufficient

Question Number : 128 Question Id : 3475353679 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Fineness of cement can be found using:

Options :

1. ✖ Le Chatelier apparatus

2. ✔ Blaine's air permeability method

3. ✖ Vicat mould

4. ✖ Autoclave test

5. ✖ L-box test

Question Number : 129 Question Id : 3475353680 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A long-sawn timber piece with parallel sides having its thickness less than 50 mm and width more than 50 mm is called a/an:

Options :

1. ✖ board

2. ✖ end

3. ✖ scantling

4. ✔ plank

5. ✖ log

Question Number : 130 Question Id : 3475353681 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The range of PVCN for paints on exterior surface of buildings is:

Options :

1. ✔ 28-40

2. ✖ 12-20

3. ✖ 45-55

4. ✖ 5-15

5. ✖ 60-70

Question Number : 131 Question Id : 3475353682 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A fluid which is incompressible and has no viscosity is known as a/an:

Options :

1. ✖ Newtonian fluid

2. ✖ non-Newtonian fluid

3. ✔ ideal fluid

4. ✖ ideal plastic fluid

5. ✖ real fluid

Question Number : 132 Question Id : 3475353683 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

_____ pressure is measured with the help of a pressure measuring instrument in which the atmospheric pressure is taken as datum.

Options :

1. ✖ Absolute

2. ✔ Gauge

3. ✖ Vacuum

4. ✖ Negative

5. ✖ Positive

Question Number : 133 Question Id : 3475353684 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A venturimeter is a device used for measuring the:

Options :

1. ✖ pressure developed inside the pipe

2. ✖ head loss in a piping system

3. ✔ rate of flow of fluid flowing through a pipe

4. ✖ efficiency of the pumping system

5. ✖ friction loss in a pipe system

Question Number : 134 Question Id : 3475353685 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

_____ is a tangential-flow impulse turbine.

Options :

1. ✔ Pelton wheel turbine

2. ✖ Kaplan turbine

3. ✖ Francis turbine

4. ✖ Propeller turbine

5. ✖ Draft tube

Question Number : 135 Question Id : 3475353686 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

As per IS 1536, what is the working pressure of a Class A pipe of increasing thickness for the same diameter?

Options :

1. ✖ $2,000 \ kN/m^2$

2. ✔ $1,800 \ kN/m^2$

3. ✖ $1,000 \ kN/m^2$

4. ✖ $2,400 \ kN/m^2$

5. ✖ $5,000 \ kN/m^2$

Question Number : 136 Question Id : 3475353687 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The amount of potassium permanganate required for disinfection purpose is:

Options :

1. ✔ $1 - 2 \ mg/l$

2. ✖ $5 - 7 \ mg/l$

3. ✖ $0.1 - 05 \ mg/l$

4. ✖ $10 - 12 \ mg/l$

5. ✖ $20 - 25 \ mg/l$

Question Number : 137 Question Id : 3475353688 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Choose the correct statement.

    a) Distribution reservoir absorbs the hourly variations in demand.
    b) They help in maintaining constant pressure in the distribution mains.

Options :

1. ✖ Statement (a) alone is true

2. ✖ Statement (b) alone is true

3. ✔ Both the statements (a) and (b) are true

4. ✖ Both the statements (a) and (b) are false

5. ✖ Information insufficient

Question Number : 138 Question Id : 3475353689 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct : 2 Wrong : 0

The design period recommended for water treatment units by the Government of India Manual On Water Supply And Treatment Systems is _____ years.

Options :

1. ✖ 50

2. ✔ 15

3. ✖ 100

4. ✖ 30

5. ✖ 20

Question Number : 139 Question Id : 3475353690 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct : 2 Wrong : 0

Convert 327°24' whole circle bearing to quadrantal bearing. Select the correct option.

Options :

1. ✖ E 32°36' W

2. ✖ N 12°36' E

3. ✖ S 48°12' E

4. ✔ N 32°36' W

5. ✖ S 32°36' E

Question Number : 140 Question Id : 3475353691 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Choose the correct statement.

a) The sum of the measured interior angles should be equal $(2N - 4)$ right angles.
b) If the exterior angles are measured, their sum should be equal to $(2N + 4)$ right angle. Where N is the number of sides of the traverse.

Options :

1. ✔ Both the statements (a) and (b) are true

2. ✖ Statement (a) alone is true

3. ✖ Statement (b) alone is true

4. ✖ Both the statements (a) and (b) are false

5. ✖ Information insufficient

Question Number : 141 Question Id : 3475353692 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A point on which both minus sight and plus sight are taken on a line of direct levels is called:

Options :

1. ✔ the change point

2. ✖ the intermediate station

3. ✖ foresight

4. ✖ backsight

5. ✖ the height of the instrument

Question Number : 142 Question Id : 3475353693 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The beginning of the curve where the alignment changes from a tangent to a curve is called as the:

Options :

1. ✖ point of tangency

2. ✔ point of curve

3. ✘ intersection angle

4. ✘ back tangent

5. ✘ tangent distance

Question Number : 143 Question Id : 3475353694 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The _____ is where the plumb line dropped from the nodal point pierces the photograph.

Options :

1. ✘ principal point

2. ✘ flight line

3. ✔ nadir point

4. ✘ flying height

5. ✘ tilt

Question Number : 144 Question Id : 3475353695 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The second twenty year road plan is also called as:

Options :

1. ✘ Madras road plan

2. ✘ Lucknow road plan

3. ✔ Bombay road plan

4. ✘ Delhi road plan

5. ✘ Calcutta road plan

Question Number : 145 Question Id : 3475353696 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

In India, compensation for curvature for broad gauge is:

Options :

1. ✖ 0.1% per degree of curve

2. ✖ 0.25% per degree of curve

3. ✖ 0.6% per degree of curve

4. ✔ 0.04% per degree of curve

5. ✖ 0.3% per degree of curve

Question Number : 146 Question Id : 3475353697 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

Unit of measurement of rock excavation is:

Options :

1. ✔ m^3

2. ✖ m^2

3. ✖ cm

4. ✖ ft^2

5. ✖ m

Question Number : 147 Question Id : 3475353698 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

A detailed estimate, which is prepared to maintain the structure or work in proper order and safe condition, is called a/an:

Options :

1. ✖ supplementary estimate

2. ✔ annual repair estimate

3. ✖ revised estimate

4. ✖ detailed estimate

5. ✖ item rate estimate

Question Number : 148 Question Id : 3475353699 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The thickness of the damp proof course applied at the plinth level for a fourth class building will be:

Options :

1. ✖ 3.5 cm

2. ✖ 1.2 cm

3. ✔ 2.5 cm

4. ✖ 4.0 cm

5. ✖ 0.5 cm

Question Number : 149 Question Id : 3475353700 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

The minimum floor area of a living room is:

Options :

1. ✔ 10 m^2

2. ✖ 15 m^2

3. ✖ 20 m^2

4. ✖ 25 m^2

5. ✖ 50 m^2

Question Number : 150 Question Id : 3475353701 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct : 2 Wrong : 0

For a modern road, the subgrade shall be well consolidated and compacted with a camber of:

Options :

1. ✖ 1 vertical in 20 horizontal

2. ✖ 1 vertical to 30 horizontal

3. ✔ 1 vertical to 50 horizontal

4. ✖ 1 vertical to 75 horizontal

5. ✖ 1 vertical to 10 horizontal