

Delhi Development Authority (Recruitment Cell)

Advertisement No. 03/2022/Rectt.Cell./Pers./DDA

Participant ID			
Participant Name			
Test Center Name			
Test Date	01/04/2023		
Test Time	9:00 AM - 11:00 AM		
Subject	Junior Engineer (Civil)	A	

Section	٠	Domair	ı O	uestions
SECTION		POILIGII	ı v	ucolionio

Q.1 As per IS 2386(Part IV)-1963, for the determination of aggregate impact value, the free fall height of metal hammer of weight 13.5 to 14 kg is _____.

Ans

× 1. 250(+/−)5 mm

× 2. 150(+/-)5 mm

× 4. 330(+/−)5 mm

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Question ID : 630680197511 Status : Marked For Review

Chosen Option: 4

Q.2 Identify the INCORRECT statement with respect to the advantages of the aeration technique used in water treatment.

Ans

X 2

It converts iron and manganese from their soluble state to insoluble state.

X 3

It removes the taste and odour caused by gases due to organic decomposition.

★ 4. It decreases the carbon dioxide content of water.

Question ID : 630680197490 Status : Answered Chosen Option : 1

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Q.3 Identify the correct statement with respect to static indeterminacy for the given truss with hinged support at A and roller support at B. Consider that the diagonal members are NOT connected to each other. ★ 1. Statically determinate × 2. Statically indeterminate to degree one X 3. Statically indeterminate to degree three Question ID: 630680197499 Status: Not Answered Chosen Option: -Q.4 Consider the below statements with respect to the triangular weir and identify the correct answer. Statement A: The triangular weir gives less accurate results than a rectangular weir for measuring low discharges. Statement B: In the case of a triangular weir with known values of the angle of weir and co-efficient of discharge, the height of water over the weir is the only data required for the computation of discharge. Ans ★ 1 Both statements are incorrect. ✓ 2. Statement B is correct and A is incorrect. × 3. Both statements are correct. ★ 4. Statement A is correct and B is incorrect. Question ID: 630680197484 Status: Answered Chosen Option: 2 Q.5 For open channel flow with hydraulic radius as characteristic length, the flow is classified as turbulent, if Reynold's Ans X 1. less than 2000 X 3. more than 1000 X 4. less than 500

> Question ID : **630680197483** Status : **Marked For Review**

Q.6 Which of the following structures is classified as a statically indeterminate structure?

Ans

★ 1. Three hinged arch

X 2

Overhanging beam with one hinged support and another roller support

- 3. Propped cantilever beam
- × 4. Cantilever beam

Question ID: 630680197498
Status: Answered
Chosen Option: 3

Q.7 Consider the below statements with respect to cutback bitumen and identify the correct answer.

Statement A: The addition of petroleum hydrocarbon (Kerosene) decreases the viscosity of the bitumen.

Statement B: The addition of petroleum hydrocarbon (Kerosene) increase the penetration of bitumen on the asphalt surface.

Ans

- ✓ 1. Both statements are correct.
- X 2. Statement A is correct and B is incorrect.
- X 3. Statement B is correct and A is incorrect.
- X 4. Both statements are incorrect.

Question ID : 630680197455 Status : Answered

Chosen Option: 1

Q.8 The natural water content, liquid limit, and plastic limit of a clay sample are 22%, 44%, and 19%, respectively. Calculate its consistency index.

Ans

- X 1. 0.65
- √ 2. 0.88
- X 3. 0.76
- **×** 4. 0.97

ENGINEERS

Question ID: 630680197475 Status: Answered Chosen Option: 2

Q.9 Cross sections, which can develop the plastic moment of resistance, but have inadequate plastic hinge rotation capacity for the formation of a plastic mechanism before buckling are classed as:

Ans

- ★ 1 slender sections
- × 2. plastic sections
- ★ 4. semi compact sections

Question ID : **630680197526**

Status: Marked For Review

Q.10 Identify the INCORRECT statement with respect to the influence of compaction on the properties of soil. Ans **X** 1. A well-compacted soil shows reduced compressibility when compared to poorly compacted soil. **X** 2. A well-compacted soil shows increased shear strength when compared to poorly compacted soil. A well-compacted soil shows increased permeability when compared to poorly compacted soil. **X** 4. A well-compacted soil shows increased density when compared to poorly compacted soil. Question ID: 630680197477 Status: Answered Chosen Option: 3 Q.11 are manufactured by using lignocellulose materials, which are agglomerated, formed and pressed together by the use of an organic binder together in the presence of heat, pressure or moisture. Ans ★ 1. Plywood × 2. Veneers X 3. Block boards ✓ 4. Particle boards Question ID: 630680197453 Status: Marked For Review Chosen Option: 2 Q.12 In Tacheometric surveying, the Subtense bar method is also called the ✓ 1 movable hair method × 2. normal chord method X 3. tangential method X 4. fixed hair method Question ID: 630680197468 Status: Marked For Review Chosen Option: 3 Q.13 Pick the odd one out with respect to the type of failure of tension members. Ans 1. Lateral torsional flexural buckling ★ 2. Net section rupture X 3. Gross section yielding × 4. Block shear failure Question ID: 630680197529 Status: Answered Chosen Option: 4

Q.14 Identify the INCORRECT statement with respect to concrete making.

Ans

★ 1. Machine mixing is more efficient than hand mixing

X 2

Weigh batching is more precise compared to volume batching in making concrete

X 3.

The separation of ingredients of concrete is termed as segregation of concrete

4

Bleeding of concrete reduces the possibility of laitance formation on concrete surface

Question ID: 630680197514 Status: Answered Chosen Option: 4

Q.15 In which of the following system is the sewage allowed to sprinkle over a bed of coarse, rough and hard filter media, and it is then collected through the under drainage system?

Ans

- X 1 Contact beds
- × 2. Intermittent sand filters
- X 3. Activated sludge process

4. Trickling filters

Question ID : 630680197494 Status : Marked For Review

Chosen Option: 3

Q.16 Consider the below statements with respect to the turbidity of water and identify the correct answer.

Statement A: Turbidity of water is imparted by the dissolved matter present in water.

Statement B: Jackson's turbidimeter is a laboratory apparatus which is used to measure the turbidity of water.

Ans

- × 1. Both statements are incorrect.
- ✓ 2. Statement B is correct and A is incorrect.
- X 3. Statement A is correct and B is incorrect.
- X 4. Both statements are correct.

Question ID: 630680197488

Status : **Answered**

-	ollowing the working stress method of design as per IS 456:2000, calculate the modula bjected to compressive stress due to bending, considering the permissible compressive	
	bending as 10 N/mm ² .	
Ans >	^{× 1.} 14.00 N/mm ²	
>	× 2. 16.00 N/mm ²	
•	✓ 3. 9.33 N/mm ²	
7	× 4. 11.25 N/mm ²	
		Question ID : 630680197520
		Status : Answered
		Chosen Option : 3
Q.18 A	A fully saturated soil mass is an example of a	
Ans >	★ 1. four-phase system ———————————————————————————————————	
>	✓ 2. one-phase system	
>	≺ 3. three-phase system	
	✓ 4. two-phase system	
		0 11 ID 400400107440
		Question ID : 630680197469 Status : Answered
		Chosen Option : 4
Q.19 The	ne maximum water content at which reduction in water content will not cause a decreas	e in the volume of a soil mass
_	known as the ≺ 1. liquidity index	
>	× 2. plastic limit	
7	≺ 3. toughness index	
•	✓ 4. shrinkage limit	
		Question ID : 630680197473
		Status : Answered Chosen Option : 4
		Shoodii Option . T
	ne direction of a line AB measured in whole circle bearing system is found to be 105° are in quadrantal bearing system is	30', the direction of the same
Ans >	× 1. N 285°30′ W	
•	✓ 2. S 74°30' E	
>	× 3. S 105°30′ W	
>	× 4. N 15°30' E	
		Question ID : 630680197462
		Status: Answered
		Chosen Option : 2

 $\textbf{Q.21} \quad \text{A bar of length 2.5 m is subjected to an axial pull of 200 kN, if the change in length due to the applied load is 5 mm,}$ calculate the linear strain experienced by the bar in the direction of the applied load. Ans X 1 0.0250 **2** 0.002 **X** 3. 0.25 X 4. 0.00725 Question ID: 630680197496 Status: Answered Chosen Option: 2 Q.22 According to IS 800-2007, the maximum value of effective slenderness ratio for compression flange of a beam against lateral torsional buckling is _ Ans X 1. 200 **2.** 300 X 3. 415 X 4. 280 Question ID: 630680197527 Status: Marked For Review Chosen Option: 2 Q.23 As per IS soil classification, which of the following symbols is used for poorly graded or gravelly sands? Ans ✓ 1. SP X 2. MH X 3. GP X 4. SC Question ID: 630680197474 Status: Answered Chosen Option: 1 $\textbf{Q.24} \quad \text{Two columns C_1 and C_2 spaced 3 m centre to centre, are subjected to axial loads of 600 kN and 800 kN, respectively. If C_2 is a centre to centre, are subjected to axial loads of 600 kN and 800 kN, respectively. If C_2 is a centre to centre, are subjected to axial loads of 600 kN and 800 kN, respectively. If C_2 is a centre to centre, are subjected to axial loads of 600 kN and 800 kN, respectively. If C_2 is a centre to centre, are subjected to axial loads of 600 kN and 800 kN, respectively. If C_2 is a centre to centre, are subjected to axial loads of 600 kN and 800 kN, respectively. If C_2 is a centre to centre, are subjected to axial loads of 600 kN and 800 kN, respectively. If C_2 is a centre to centre, are subjected to axial loads of 600 kN and 800 kN, respectively. If C_2 is a centre to centre, are subjected to axial loads of 600 kN and 800 kN, respectively. If C_2 is a centre to centre, are subjected to axial loads of 600 kN and 800 kN, respectively. If C_2 is a centre to cen$ good soil for the foundation with safe bearing capacity as 200 kN/m 2 , is available at 2 m depth below the ground level, identify the type of foundation which is suitable and economical. Assume the width of footing is restricted to 2 m. Ans ★ 1 Grillage foundation Pile foundation 3. Isolated footing × 4. Mat foundation Question ID: 630680197523 Status: Marked For Review Chosen Option: 4

Q.25 According to IS 10262:2019, the approximate amount of entrapped air to be expected in normal (non-air-entrained) concrete is of volume of concrete, if the nominal maximum size of aggregate used in concrete is 10 mm.

Ans

X 1. 0.50%

X 2. 1%

X 3. 2%

√ 4. 1.50%

Question ID: 630680197515 Status: Answered Chosen Option: 2

Q.26 Identify the direct method of contouring in a survey work.

Ans

- ★ 1. Contouring by squares
- X 2. Contouring by tacheometric method
- ✓ 3. Contouring by vertical and horizontal control

★ 4. Contouring by cross sections

Question ID: 630680197466

Status: Answered

Chosen Option: 2

Q.27 Which of the following tests on workability allows the concrete to fall from a certain height, so that concrete is compacted partially?

Ans

★ 1. Slump test

× 2. Flow test

X 3. Vee Bee consistometer test

4. Compacting factor test

Question ID: 630680197508 Status: Answered

Chosen Option: 4

 $^{\mbox{\scriptsize Q.28}}$ Identify the INCORRECT statement with respect to asbestos material.

Ans

X 1.

Asbestos molecules are strongly bound together only in one direction, whereas the lateral bond with adjacent molecules is quite weak.

X 2.

Asbestos is used to make sheets (A.C. sheets) and boards for roofing.

X 3

Non-acid-resistant asbestos is represented by chrysotile asbestos.

4

When asbestos is heated at 550°C, asbestos loses elasticity and strength, becomes brittle and restores its properties on cooling.

Question ID: 630680197456

Status : **Answered**

Chosen Option : ${\bf 4}$

Q.29 Which of the following laboratory tests is NOT used to determine the shearing resistance of soil?

Ans

- ✓ 1. Recuperation test
- X 2. Vane shear test
- ★ 3. Unconfined compression test
- × 4. Direct shear test

Question ID: 630680197476 Status: Answered

Chosen Option : 1

Q.30 As per IS 456: 2000, to ensure the lateral stability in a cantilever beam, the clear distance from the free end of the cantilever to the lateral restraint shall not exceed ______; where b is the breadth of the compression face midway between the lateral restraints.

Ans

- X 1. 60 b
- X 2. 75 b
- √ 3. 25 b
- X 4. 40 b

Question ID: 630680197522

Status : **Answered**

Chosen Option: 2

Q.31 Consider the below statements with respect to the design of RCC beams and identify the correct answer.

Statement A: Spacing of shear reinforcement in a simply supported RCC rectangular beam shall be reduced at the middle portion along the length of the beam when compared to a portion of the beam near the supports.

Statement B: The position of longitudinal reinforcement shall be above the neutral axis in case of a cantilever beam subjected to uniformly distributed load directed towards down.

Ans

- X 1. Both statements are incorrect.
- X 2. Statement A is correct and B is incorrect.
- X 3. Both statements are correct.
- ✓ 4. Statement B is correct and A is incorrect.

Question ID: 630680197519

Status : **Answered**

Q.32 Consider the below statements with respect to plate girders and identify the correct answer.

Statement A: The intermediate transverse stiffener increases the buckling resistance of the web caused by shear.

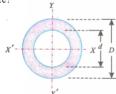
Statement B: When the computed shear stress in the web of a plate girder is less than the critical shear stress, intermediate stiffeners are theoretically not required.

Ans

- ★ 1 Statement B is correct and A is incorrect.
- × 2. Both statements are incorrect.
- × 4. Statement A is correct and B is incorrect.

Question ID: 630680197530 Status: Answered Chosen Option: 3

Q.33 Which of the following expressions is correct to compute the moment of inertia (I_{yy}) of a hollow section shown in the figure?



Ans

$$\times$$
 1. $\frac{\pi}{16}$ (D⁴-d⁴)

$$\times$$
 2. $\frac{\pi}{32}$ (D⁴-d⁴)

$$\times$$
 3. $\frac{\pi}{8}$ (D⁴-d⁴)

$$\checkmark$$
 4. $\frac{\pi}{64}$ (D⁴-d⁴)

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Question ID: 630680197502 Status: Answered

Chosen Option: 4

Q.34 Which of the following type of vibrators is suitable for compacting screed concrete layer laid on existing floors with a thickness of less than 20 cm?

Ans

- ★ 1. Form vibrators
- × 2. Vibrating tables
- ✓ 3. Surface vibrators
- X 4. Internal vibrator

Question ID: 630680197513

Status : **Answered**

A soil sample has a porosity of 25%, calculate its void ratio. Ans X 1. 0.67 **√** 2. **0.33 X** 3. 0.25 **X** 4. 0.50 Question ID: 630680197470 Status: Answered Chosen Option: 2 Q.36 Identify the INCORRECT statement with respect to the wastewater carriage system. Ans The load on the treatment plant is less in the combined system when compared to a separate system. The sewage in the separate system will be of more uniform character, and so will lend itself more easily to putrification. The large size of sewers is required in the combined system when compared to a separate system. **X** 4. Chances of chocking are less in the combined system when compared to a separate system. Question ID: 630680197495 Status: Answered Chosen Option: 1 Q.37 Calculate the target mean compressive strength at 28 days for M25 grade concrete, if the assumed standard deviation is 4 N/mm^2 . Ans × 1. 25.00 N/mm² × 2. 38.25 N/mm² × 3. 42.25 N/mm² √ 4. 31.60 N/mm² Question ID: 630680197516 Status: Answered Chosen Option: 4 Q.38 As per IS 1130:1969, marble slabs shall be supplied with the thickness that ranges between _ Ans X 1. 5 and 50 mm × 2. 15 and 75 mm × 3. 50 and 200 mm 4. 20 and 150 mm Question ID: 630680197451 Status: Not Answered Chosen Option: -

Q.39 At the time of grinding of cement clinker, a small quantity of Gypsum is added to the clinker ______.

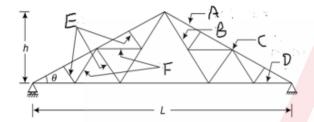
Ans

- X 1. to reduce the amount of sulphates in cement
- × 2. to reduce the shrinkage of cement
- × 4. to increase the rate of hardening of cement

Question ID : 630680197509 Status : Answered

Chosen Option : 3

Q.40 Identify the member 'A' used in the truss shown in the figure.



Ans

- ★ 1. Principal tie
- 2. Principal rafter
- X 3. Purlin
- X 4. Side bracing

Question ID: 630680197528 Status: Marked For Review

Chosen Option: 1

Q.41 For open channel flow with hydraulic radius as characteristic length, the flow is classified as laminar, if Reynold's number of the flow is _____.

Ans

- × 1. less than 1000
- X 2. between 500 to 2000
- × 4. more than 1000

Question ID: 630680197480

Status : **Answered**

Chosen Option : ${\bf 3}$

Q.42 Find the surface tension in a soap bubble of 80 mm diameter, having an internal pressure 3 N/m^2 in excess of the outside pressure.

Ans

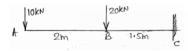
- √ 1. 0.03 N/m
- × 2. 0.08 N/m
- X 3. 0.01 N/m
- X 4. 0.24 N/m

Question ID: 630680197479

Status : Answered

Chosen Option: 1

Q.43 A cantilever beam of span 3.5 m is subjected to 2 point load shown in the figure. Calculate the slope at point A. Take EI as constant throughout its length.



Ans

$$\times$$
 1. - $\frac{156.5}{EI}$

$$\times$$
 2. - $\frac{120}{EI}$

$$\times$$
 4. - $\frac{56.25}{EI}$

Question ID: 630680197504

Status: Answered

Chosen Option: 3

Q.44 As per IS 10262: 2019, the required water content per cubic metre of concrete for the nominal maximum size of aggregate for the desired workability (other than 50 mm slump) may be increased or decreased by about ______ for each increase or decrease of 25 mm slump.

Ans

Question ID: 630680197512

Status : **Answered**

Chosen Option : $\boldsymbol{2}$

Q.45 According to the Ministry of Environment, forest and climate change Government of India, which of the following classes of water can be used for the propagation of wildlife and fisheries?

Ans

X 1. Class B

✓ 2. Class D

X 3. Class C

X 4. Class A

Question ID : **630680197487** Status : **Answered**

Chosen Option : 1

Q.46 Consider the below statements with respect to principles of surveying and identify the correct answer.

Statement A: Locate the position of a point on the ground by measurement from two reference points.

Statement B: Work from part to whole to prevent the undue accumulation of errors and thereby control and localize the minor errors.

Ans

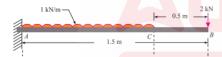
- ★ 1. Both statements are incorrect.
- ✓ 2. Statement A is correct and B is incorrect.
- X 3. Statement B is correct and A is incorrect.
- × 4. Both statements are correct.

Question ID: 630680197460

Status: Answered

Chosen Option: 2

Q.47 A cantilever beam is subjected to a point load and uniformly distributed load with intensity 1 kN/m shown in the figure, calculate the shear force at point C.



Ans

X 1. 1.5 kN

X 2. 1 kN

X 3. 3 kN

√ 4. 2kN

Question ID: 630680197501

Status : **Answered**

Chosen Option : ${\bf 4}$

Q.48 Which of the following is NOT a dissolved impurity present in water?

Ans

X 1. Hydrogen sulphide

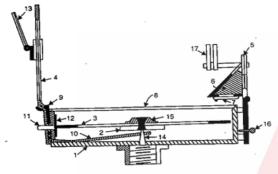
✓ 2. Silt

X 3. Salts

X 4. Nitrates

Question ID: 630680197486 Status: Answered Chosen Option: 1

 $\textbf{Q.49} \quad \text{The cross section of a prismatic compass is shown in figure, identify the part numbered as } 13.$



★ 1. Prism cap

× 2. Lifting lever

★ 3. Focusing stud

✓ 4. Mirror

Question ID: 630680197461

Status: Answered

Chosen Option: 4

Q.50 Which of the following minor losses in pipe flow is taken as $\frac{v^2}{2g}$? Where V is the velocity of liquid in a pipe.

Ans

X 1. Loss of head due to obstruction in a pipe

X 2. Loss of head due to friction

3. Loss of head at the exit of the pipe

X 4.

Loss of head at the entrance of a pipe with sharp cornered entrance

Question ID: 630680197482 Status: Answered

Q.51 Consider the below statements with respect to Sewer appurtenances used in the sewerage system and identify the

Statement A: Lamphole may be located when there is a change in the direction or gradient of the sewer in between two closely spaced manholes.

Statement B: Flushing tanks shall be constructed when there is a steeper downward gradient along the alignment of the sewer line.

Ans

- X 1. Statement B is correct and A is incorrect.
- × 2. Both statements are incorrect.
- × 4. Both statements are correct.

Question ID: 630680197493 Status: Answered Chosen Option: 4

Q.52 Consider the below statements with respect to characteristics of the bending moment diagram (BMD) for beam and identify the correct answer.

Statement A: If a beam is subjected to a uniformly distributed load throughout its span, the shape of BMD will be a cubic parabolic curve.

Statement B: If a cantilever beam is subjected to a uniformly varying load (UVL) throughout its span the maximum value of bending moment will be at a distance of $2/3^{rd}$ of the span measured from zero intensity of UVL.

Ans

- ✓ 1. Both statements are incorrect.
- × 2. Both statements are correct.
- X 3. Statement B is correct and A is incorrect.
- X 4. Statement A is correct and B is incorrect.

Question ID: 630680197500 Status: Answered Chosen Option: 1

Q.53 The specific surface of cement is a property cement used to know the _____.

Ans

- × 1. soundness of cement
- X 2. specific gravity of cement
- **×** 3. strength of cement

Question ID: 630680197458 Status: Answered

Status . Allsweieu

Q.54 Which of the following component of oil paint is used to thin the paint, increases the spread, and is also known as Ans ★ 1. Adulterant × 2. Vehicle × 3. Pigment Question ID: 630680197459 Status: Answered Chosen Option: 2 Q.55 The water content in a natural soil deposit is found to be 15%, calculate the degree of saturation if its void ratio is 0.50. Consider that the specific gravity of soil is 2.7. Ans X 1. 75% X 2. 92% X 3. 98% 4. 81% Question ID: 630680197471 Status: Answered Chosen Option: 4 Q.56 A Pelton wheel turbine is a _ Ans ★ 1 tangential flow reaction turbine 2. tangential flow impulse turbine × 3. radial flow reaction turbine × 4. radial flow impulse turbine Question ID: 630680197485 Status: Not Answered Chosen Option: -Q.57 Calculate the bulk modulus of an alloy body if its modulus of elasticity is found to be 180 Gpa. Consider that the Poisson's ratio of tested material is 0.25. Ans X 1. 100GPa √ 2. 120GPa X 3. 150GPa X 4. 180GPa Ouestion ID: 630680197497 Status: Answered Chosen Option: 2

Q.58 Which of the following is NOT the effect of cold weather concreting? Ans ★ 1. Delayed hardening of concrete × 2. Freezing of water contained in the plastic concrete X 3. Reduced rate of hydration of cement Increased heat of hydration due to rapid hardening of cement Question ID: 630680197517 Status: Answered Chosen Option: 4 Q.59 As per IS 456:2000, The cross-sectional area of longitudinal reinforcement shall be not less than cross-sectional area of the column and the diameter of these bars shall not be less than ______, respectively. X 1. 0.8%, 10 mm × 2. 4.0%, 10 mm × 4. 4.0%, 12 mm Question ID: 630680197518 Status: Answered Chosen Option : 3 Q.60 Bernoulli's equation is not applicable when the Ans ✓ 1. flow is rotational × 2. flow is incompressible X 3. fluid is ideal X 4. flow is steady Question ID: 630680197481 Status: Answered Chosen Option: 1 Q.61 In a traverse surveying, the direction of a line PQ of length 320 m measured in the whole circle bearing system is found to be 30°00'. Calculate its departure. Ans X 1. 125.27 √ 2. 160 m X 3. 277.12 m X 4. 320 m Question ID: 630680197463 Status: Answered Chosen Option : 2

Q.62 Consider the below statements with respect to unit operations employed in water treatment and identify the correct

Statement A: Objectionable gases such as carbon dioxide, hydrogen sulphide and other volatile odorous substances present in water can be removed by the bubble aeration technique.

Statement B: Chemical coagulation technique removes the suspended and colloidal impurities present in water.

Ans

- ★ 1. Statement A is correct and B is incorrect.
- X 2. Statement B is correct and A is incorrect.
- ✓ 3. Both statements are correct.
- × 4. Both statements are incorrect.

Question ID: 630680197489

Status: Answered

Chosen Option: 3

Q.63 Consider the below statements with respect to retaining walls subjected to earth pressure and identify the correct answer. (Assume identical conditions for the soil)

Statement A: Active earth pressure is developed when the wall moves away from the backfill.

Statement B: The active earth pressure is greater than the earth pressure at rest.

Ans X 1 Statement B is correct and A is incorrect.

× 2. Both statements are correct.

3. Statement A is correct and B is incorrect.

× 4. Both statements are incorrect.

Question ID: 630680197524

Status : Answered

Chosen Option: 3

Q.64 The self-cleansing velocity of a sewer with a diameter of 30 cm to 60 cm is:

Ans

- √ 1. 75 cm/sec
- × 2. 65 cm/sec
- X 3. 55 cm/sec
- X 4. 45 cm/sec

Question ID: 630680197492 Status: Not Answered

Chosen Option : -

Q.65 As per IS 456: 2000, nominal cover to reinforcement in reinforced concrete structures, to meet the durability requirements in extreme exposure conditions shall not be less than _____.

Ans

- X 1 50 mm
- √ 2. 75 mm
- X 3. 25 mm
- X 4. 15 mm

Question ID: 630680197521

Status : **Answered**

Chosen Option : $\boldsymbol{2}$

Q.66 A circular shaft of 40 mm diameter is required to transmit torque from one shaft to another. Find the safe torque, which the shaft can transmit if the shear stress is not to exceed 32Mpa.

Ans

- ✓ 1. 1.28 π × 10⁵ N-mm
- \times 2. 2.25 $\pi \times 10^5$ N-mm
- \times 3. 0.75 $\pi \times 10^5$ N-mm
- \times 4. 2.56 $\pi \times 10^5$ N-mm

Question ID: 630680197507 Status: Not Answered

Chosen Option: -

Q.67 French polish is a type of _____ used to hide the grain defects on hardwood substances.

Ans

- ✓ 1. spirit varnish
- X 2. asphalt varnish
- X 3. flat varnish
- X 4. water varnish

Question ID: 630680197457

Status: Answered

Chosen Option: 2

 $\textbf{Q.68} \quad \text{Calculate the specific gravity of a liquid if its density is 830 kg/m}^3. \text{ Take density of water as } 1000 \text{ kg/m}^3.$

Ans

- √ 1. 0.830
- × 2. 1.320
- X 3. 1.200

× 4. 0.814

Question ID: 63068

Question ID : 630680197478
Status : Answered
Chosen Option : 1

Q.69 Which of the following is NOT a grading characteristic estimated from the particle size distribution curve of a soil?

Ans

- ★ 1. Uniformity coefficient
- ✓ 2. Coefficient of compressibility
- X 3. Effective size
- X 4. Coefficient of curvature

Question ID: 630680197472

Status : Answered

Q.70 According to IS 12269:2013, insoluble residues in OPC 53 grade cement shall not be greater than _____ by mass. Ans X 1. 3% X 2. 2% X 3. 1.5% √ 4. 4% Question ID: 630680197454 Status: Answered Chosen Option: 3 Q.71 Which of the following statements is INCORRECT with respect to the water distribution system? Ans Less number of cut-off valves are necessary in the case of a circular distribution system when compared to dead end system. **X** 2. Sediments accumulate due to stagnation and can cause bacterial growth in the dead-end system. In case of repair or break down in a pipe, the area connected to that pipe will continue to receive water from another side in the grid iron system. Water available for firefighting will be limited since it is being supplied by only one water main in the dead-end system. Question ID: 630680197491 Status: Answered Chosen Option: 3 Q.72 Calculate the modulus of rigidity for an alloy body if its modulus of elasticity is found to be 200 Gpa. Consider that the Poisson's ratio of tested material is 0.25. Ans √ 1. 80 GPa X 2. 120 GPa X 3. 600 GPa X 4. 100 GPa Question ID: 630680197505 Status: Answered Chosen Option: 1 Q.73 According to IS 1121 (Part I):1974, the diameter or lateral dimension (distance between opposite vertical faces) of a test piece of stone used for finding its compressive strength shall not be less than _ Ans X 1. 75 mm √ 2. 50 mm X 3. 100 mm X 4. 25 mm Question ID: 630680197452 Status: Answered Chosen Option: 3

Q.74 Which of the following is NOT the role expected by fine aggregate in concrete?

Ans

- ★ 1. Fill the voids between coarse aggregates
- × 2. Make the concretes stiff and dense
- × 4. Improve workability of concrete

Question ID : 630680197510

Status : Answered

Chosen Option: 3

Q.75 Which of the following expressions is correct to calculate the correction for curvature (C_c) in levelling? Where, d is the distance sighted (measured in km).

Ans

- \times 1. $C_c = 0.5459d^2 m$
- \checkmark 2. $C_c = 0.07849d^2 m$
- \times 3. $C_c = 0.6782d^2 \text{ m}$
- \times 4. $C_c = 0.02498d^2 m$

Question ID: 630680197464

Status: Answered

Chosen Option: 2

Q.76 The inverted staff reading (back sight) taken at the soffit of a cantilever beam point A is 2.065m. The staff reading at point B (fore sight) with normally held staff is 1.250 m. The RL of point B is _______.

Take reduced level at point A as 100 m.

Ans

- ✓ 1. 96.685 m
- × 2. 100.815 m
- X 3. 97.935 m
- X 4. 99.185 m

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Question ID: 630680197465 Status: Answered

Chosen Option: 1

Q.77 As per IS 456:2000, the maximum area of tension reinforcement shall not exceed ______ of the gross cross sectional area of the beam.

Ans

- √ 1. 4.0%
- × 2. 0.8%
- X 3. 6.0%
- X 4. 2.5%

Question ID: 630680197525

Status : **Answered**

Q.78 A block levelling data is presented in the below figure, starting with point A at one corner and ending with T in the diagonally opposite corner. If all the grids are spaced 10 m apart in both directions, determine the position (measured from point G) of the contour line with RL 91.5 m which intersects line GH.

P.	B	R	S	
90-105	91.050	90.005	92-255	93.000
K	LL	M	N	
91-125	90-230	91,150	92.250	9 3.325
F	Gi	Н	I	J
90.075	91-125	92.310	92.350	92.725
20.00	. 0. 047	2000	100	
91.105	92.803	92.905	93-150	93-235
A	B	C	D	E

Ans X 1. 4.984 m

X 2. 2.593 m

X 3. 6.897 m

√ 4. 3.164 m

Question ID: 630680197467

Status: Answered

Chosen Option: 4

Q.79 Calculate the crippling load of a strut of effective length 4 m according to Euler's theory for long columns, take the modulus of elasticity material used in strut section as 'E' N/mm² and moment of inertia of strut as 'I' mm⁴. Consider that one end of the strut is fixed and another end is free.

Ans

$$✓$$
 1. 6.25 Π ²EI × 10⁻⁸ N

$$\times$$
 2. 1.25 Π^2 EI × 10⁻⁸ N

$$\times$$
 3. 2.50 Π^2 EI × 10⁻⁸ N

$$\times$$
 4. 5.00Π²EI × 10⁻⁸ N

Question ID: 630680197506

Status: Marked For Review

Chosen Option: 2

Q.80 The average shear stress in a rectangular wooden beam 100 mm wide, 250 mm deep and 3 m long carrying a uniformly distributed load with an intensity of 40 kN/m is found to be 2.4 Mpa, calculate the maximum shear stress.

Ans

X 1. 4.8 MPa

× 2. 5.2 MPa

X 3. 2.4 MPa

Question ID: 630680197503

Status : Not Attempted and Marked For Review

Chosen Option: -

Section: Reasoning

Q.1 In a certain code language, 'PENCIL' is coded as 'NKEPGR' and 'ERASER' is coded as 'TGUCTG'. How will 'CUTTER' be coded in that language?

Ans X 1. EWVVGT

X 2. TGVVXF

X 3. EWVWGT

Question ID: 630680197533 Status: Answered Chosen Option: 4

Q.2 Eight toddlers, C, P, D, R, E, T, U and F, are sitting around a square table, facing the centre of the table. Four of them are sitting at the corners, while four are sitting at the exact centre of the sides. U is sitting at the immediate right of P. P and E are sitting diagonally opposite to each other. R and C are sitting diagonally opposite to each other. F is sitting to the immediate right of C. P is sitting second to the left of C. T is sitting exactly between R and P. Which toddler is sitting at the immediate left of E?

Ans

X 1. D

√ 2. F

X 3. C

X 4. U

Question ID: 630680197531

Status: Answered

Chosen Option: 2

Q.3 If

'QfR' means 'Q is the daughter of R',

'Q+R' means 'Q is the son of R',

'Q % R' means 'Q is the wife of R',

'Q @ R' means 'Q is the brother of the wife of R' and

'Q µ R' means 'Q is the father of R',

then how is N related to K in the following expression?

M µ NfOfP+K

Ans X 1. Son of daughter's son

✓ 2. Daughter of son's daughter

× 3. Daughter

★ 4. Son's daughter

Question ID: 630680197534

Status: Answered

Q.4 Select the correct mirror image of the given figure when the mirror is placed at the right side. Ans Question ID: 630680197537 Status: Answered Chosen Option: 1 Q.5 Select the option that is related to the third term in the same way as the second term is related to the first term. (The words must be considered as meaningful English words and must not be related to each other based on the number of letters/number of consonants/vowels in the word.) GREECE : ATHENS :: NORWAY : ? Ans ✓ 1. OSLO X 2. MADRID X 3. TOKYO X 4. NAIROBI Question ID: 630680197535

Status: Marked For Review

 $\textbf{Q.6} \quad \text{Select correct combination of mathematical signs that can sequentially replace the $\%$ signs and balance the given the sequential of the sequen$ equation.

35 % 15 % 16 % 4 % 3 % 5 % 9

- Ans \times 1. -, +, \div , \times , =, +

Question ID: 630680197540

Status: Answered

Chosen Option : ${\bf 3}$

 $\textbf{Q.7} \quad \text{Select the figure from among the given options that can replace the question mark (?) in the following series.}$









Ans









Question ID: 630680197536

Status: Answered

 $\textbf{Q.8} \quad \text{Select the number from among the given options that can replace the question mark (?) in the following series.}$

15, 22, 31, 42, 55, ?

Ans 🗙 1. 71

X 2. 68

3. 70

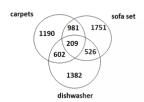
X 4. 72

Question ID: 630680197538

Status: Answered

Chosen Option: 3

Q.9 Study the given diagram carefully and answer the question that follows. The numbers in different sections indicate the numbers of people with different favourite household items.



How many people's favourite household items are either only carpets or only sofa set or both?

Ans

√ 1. 4131

X 2. 5259

X 3. 1870

X 4. 3922

Question ID: 630680197532

Status: Answered

Chosen Option: 1

Q.10 If '+' means 'division', '-' means 'addition', 'x' means 'subtraction' and '+' means 'multiplication', what will be the value of the following expression?

$$[\{(17 \times 12) - (3 \div 3)\} + (3 - 4)] \div 5$$

Ans 🔀 1. 5

X 2. 15

X 3. 1

4. 10

Question ID: 630680197539

Status: Answered

Chosen Option: 4

Section : Quantitative Aptitude

Convert $0.3\overline{44} + 0.4\overline{53} - 0.6\overline{8}$ into a vulgar fraction.

Ans

- X 2. $\frac{13}{55}$
- **X** 3. $\frac{9}{55}$
- X 4. $\frac{12}{55}$

Question ID: 630680197542

Status: Not Answered

Chosen Option: -

Q.2 If A and B can complete a piece of work in 40 days, B and C can complete it in 60 days, A and C can complete it in 50 days. In how many days can B alone complete it (correct to one decimal place)?

Ans

- √ 1. 92.3
- × 2. 75.5
- X 3. 90.4
- X 4. 85.6

Question ID: 630680197548

Status : Not Attempted and Marked For Review

Chosen Option: -

Q.3 What is the area (in cm²) of the shaded region in the given figure, if PR = 35 cm, PQ = 12 cm and O is the centre of the circle (use $\pi = 3.14$)?



Ans

- X 1. 330.0125
- × 2. 328.4525
- √ 3. 327.3325
- X 4. 329.1725

Question ID: 630680197549

Status: Answered

7.4 The expenditure of a person is 70% of his income. His income increased by 12% and he increased his expenditure by 7.5%. What is the percentage increase in his savings?

Ans

X 1. 21.5%

× 2. 24.5%

√ 3. 22.5%

X 4. 23.5%

Question ID: 630680197545 Status: Answered

Chosen Option : 3

Q.5 $(9)^{3/2} \div (8)^{-2/3} + 3 \div 10 \times 2$ is equal to:

Ans

√ 1. 108.6

X 2. 106.6

× 3. 107.6

X 4. 109.6

Question ID: 630680197541

Status : **Answered**

Chosen Option: 1

Q.6 The average of the first 15 multiples of 15 is:

Ans

√ 1. 120

X 2. 130

X 3. 140

X 4. 110

Adda[24]7

Question ID : 630680197543
Status : Answered
Chosen Option : 1

Q.7 A car travels the first one-fourth distance at a speed 40 km/h, the second one-fourth distance at a speed of 50 km/h, the third one-fourth distance at a speed of 60 km/h and the last one-fourth distance at a speed of 70 km/h. The average speed (in km/h) of the car for the whole journey is (correct to two decimal places):

Ans

X 1. 55.32

X 2. 54.33

X 3. 53.12

√ 4. 52.66

Question ID : 630680197547

Status : Not Attempted and Marked For Review

Q.8 Greeshma bought 10 kg pasta for $\stackrel{7}{\sim}50$ per kg, x kg pasta for $\stackrel{7}{\sim}60$ per kg and (x-3) kg pasta for $\stackrel{7}{\sim}65$ per kg. She mixed all the types of pasta together and the average cost price of 1 kg pasta was ₹57.20. What is the quantity of pasta (in kg) that was bought at ₹65 per kg? X 1. 9 **X** 2. **7 3**. 6 **X** 4. 8 Question ID: 630680197544 Status : **Not Attempted and Marked For Review** Chosen Option: -Q.9 The base area of a cone is 186.34 cm². If the height of the cone is nine-sevenths of its radius, then its volume (in cm³) Ans X 1. 611.657 × 2. 612.754 √ 3. 614.922 X 4. 613.841 Question ID: 630680197550 Status: Not Answered Chosen Option : -Q.10 The manufacturer of a certain item can sell all he can produce at the selling price of ₹80 each. It costs him ₹60 in materials and labour to produce each item and he has overhead expenses of ₹5,000 per week in order to operate the plant. The number of units he should produce and sell in order to make a profit of at least ₹15,000 per week is: Ans X 1. 1100 **2.** 1000 X 3. 1150 X 4. 1050 Question ID: 630680197546 Status: Not Answered Chosen Option: -Section: General Awareness Q.1 Who has been appointed as the Vice Chief of Air Staff as of February 2023?

Ans X 1. Air Marshal BK Khanna

× 2. Air Vice Marshal Satyendra Jaytee

X 3. Air Marshal Deshmukh SK

4. Air Marshal AP Singh

Question ID: 630680197551 Status: Not Answered

On the basis of the presence of major pigments, the algae are mainly divided into three classes, which are green algae, brown algae and Ans X 1. black algae 🥓 2. red algae 🗙 3. grey algae X 4. white algae Question ID: 630680197557 Status: Answered Chosen Option : 2 Q.3 Certain goods like national defence, roads and government administration are referred to as Ans X 1. foreign goods 2. public goods X 3. stored goods 🗙 4. private goods Question ID: 630680197554 Status: Answered Chosen Option: 2 Q.4 Who is the author of a unique Buddhist text, which is a section of the Sutta Pitaka and is a compilation of verses that shed light on women's social and spiritual experiences? Ans X 1. Varundata 🗶 2. Brahman X 3. Devta 4. Bhikkhunis Question ID: 630680197553 Status: Answered Chosen Option: 4 In the context of demonetisation by the Government of India in November 2016, till which Q.5 date were old currency notes acceptable as legal tender at petrol pumps, government hospitals and payment of government dues, like taxes, power bills? Ans X 1. 1st December 2016 X 2. 31st December 2016 3. 12th December 2016 X 4. 31st March 2017 Question ID: 630680197555 Status: Answered Chosen Option: 2

Which Article of the Constitution explicitly clarifies that a policy like reservation will NOT be seen as a violation of right to equality? Ans 1. Article 16 [4] X 2. Article 17 X 3. Article 22 [2] X 4. Article 12 Question ID: 630680197558 Status: Not Answered Chosen Option: -Q.7 According to Koeppen climate types, which group has the characteristics of winter dry season, no dry season and monsoonal, short dry season with letter codes Aw, Af and Am, respectively? Ans X 1. Cold Snow-forest Climates X 2. Cold Climates 🗙 3. Dry Climate 4. Tropical Humid Climate Question ID: 630680197556 Status: Answered Chosen Option: 4 Q.8 'Pullela Gopichand', an Indian sportsperson, belongs to which game? Ans X 1. Basketball 2. Badminton X 3. Athletics X 4. Football Question ID: 630680197560 Status: Answered Chosen Option: 3 Who was the chairperson of Second Backward Classes Commission that was assigned by Q.9 the government in 1979? Ans X 1. CP Mandal X 2. Jayakishore Akrudi 3. BP Mandal X 4. Rajashekharan Reddy Question ID: 630680197559 Status: Answered Chosen Option: 4

Q.10 From which year is each district having a criminal court and a civil court in the system of justice, which was established in the new administration formation? Ans **X** 1. 1771 **X** 2. 1770 **3**. 1772 **X** 4. 1773 Question ID: 630680197552 Status: Not Answered Chosen Option: -Section: English Language Q.1 Select the most appropriate meaning of the given idiom. Nip in the bud Ans X 1. Punish the opposition X 2. Fight with someone younger 3. Suppress something at an early stage X 4. Hide a secret Question ID: 630680197565 Status: Answered Chosen Option : 3 Q.2 Select the most appropriate option to fill in the blank. Avika helped her sister ____ __ a cardboard house for her school project. X 1. made Ans 🗶 2. has made √ 3. make 🗙 4. makes Question ID: 630680197562 Status: Answered Chosen Option: 3 Q.3 Select the most appropriate synonym of the word given in brackets to fill in the blank. He returned from America when he heard that his father was ____ (indisposed) and wanted to see him. X 1. healthy Ans 🚀 2. ailing X 3. willing 🗙 4. merry Question ID: 630680197563 Status: Answered Chosen Option: 2

Q.4 The following sentence has been divided into parts. One of them may contain a spelling error. Select the part that contains the error from the given options. If you don't find any error, mark 'No error' as your answer.

The octogenarian king / passed on the mantle of athaority / to his eldest son.

Ans X 1. to his eldest son

🗶 2. The octogenarian king

X 3. No error

4. passed on the mantle of athaority

Question ID: 630680197564 Status: Answered

Chosen Option: 4

Q.5 Select the most appropriate meaning of the given idiom.

To flog a dead horse

Ano

√ 1. To waste energy on a lost cause

X 2. To exhibit one's anger on something

X 3. To undertake a foolish activity

X 4. To beat a horse and cause it to die

Question ID: 630680197566 Status: Answered

Chosen Option: 1

Q.6 Select the most appropriate option to fill in the blank

They went to Ramnagar _____boat and stayed there for the weekend.

Ans

1. by

X 2. from

💢 3. in

🗙 4. with

Question ID : 630680197561
Status : Answered

Chosen Option: 1

- Q.7 Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.
 - A. So Magpie got them all together and began to show them how to do it.
 - B. "Ah ha!" said Thrush, and away she flew, so Thrush still builds her nest out of mud.C. Long ago, all the birds came to Magpie and asked her to teach them how to build nests.
 - D. First, she took some mud and patted it into the shape of a pancake.

Ans

✓ 1. CADB

X 2. ACDB

X 3. CBAD

X 4. BDCA

Question ID: 630680197567

Status : **Answered**

Comprehension:

Read the given passage and answer the questions that follow.

When the first episode of 'Homicide: Life on the Street' aired on US network NBC on 31st January 1993, the crime drama looked like very little on TV at the time. The series was based on David Simon's book 'Homicide: A Year on the Killing Streets', which documented his time spent with the homicide unit of Baltimore Police Department; Simon would go on to create The Wire, still regarded as one of the best TV dramas ever made, but having started his career as a reporter, he made his name with this vividly written account of his time shadowing a shift of homicide detectives in 1988 as they investigated murders. As with his book, the show captured the day-to-day reality and often grim humour of a group of people whose job puts them in regular proximity with death.

Homicide strove to be authentic. It was shot on location in Baltimore and the city, its harbour, rowhouses and corners would become an integral part of the show. The detectives in Simon's book were on-hand to provide advice. "We learned a lot from those fellows," says Melissa Leo, who played detective Kay Howard, and would later win an Oscar for her role in David O'Russell's The Fighter. Early on Simon took the cast to visit various drug hangouts around the city, recalls Kyle Secor, who played rookie detective Tim Bayliss. Even the filing cabinets in the squad room were filled with old police reports. The police department was being computerized, so the set designer was able to acquire them.

SubQuestion No:8

Q.8 Who played the role of Kay Howard in Homicide?

Ans

1. Melissa Leo

X 2. David O'Russell

X 3. Kyle Secor

X 4. Tim Bayliss

Question ID: 630680197570 Status: Answered

Chosen Option: 1

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Comprehension:

Read the given passage and answer the questions that follow.

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SubQuestion No:9

Q.9 Which statement is NOT true according to the passage?

Ans X 1. The cabinets in the squad room shown in the TV series had real police reports.

★ 2. The real detectives were there to advise the actors when the TV series was being shot.

X 3. The locations of the TV series Homicide were all real locations in The city of Baltimore.

✓ 4. The crime drama dominated the American TV before the Homicide was aired.

Question ID: 630680197571

Status: Answered

Chosen Option: 4

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Comprehension:

Read the given passage and answer the questions that follow.

When the first episode of 'Homicide: Life on the Street' aired on US network NBC on 31st January 1993, the crime drama looked like very little on TV at the time. The series was based on David Simon's book 'Homicide: A Year on the Killing Streets', which documented his time spent with the homicide unit of Baltimore Police Department; Simon would go on to create The Wire, still regarded as one of the best TV dramas ever made, but having started his career as a reporter, he made his name with this vividly written account of his time shadowing a shift of homicide detectives in 1988 as they investigated murders. As with his book, the show captured the day-to-day reality and often grim humour of a group of people whose job puts them in regular proximity with death.

Homicide strove to be authentic. It was shot on location in Baltimore and the city, its harbour, rowhouses and corners would become an integral part of the show. The detectives in Simon's book were on-hand to provide advice. "We learned a lot from those fellows," says Melissa Leo, who played detective Kay Howard, and would later win an Oscar for her role in David O'Russell's The Fighter. Early on Simon took the cast to visit various drug hangouts around the city, recalls Kyle Secor, who played rookie detective Tim Bayliss. Even the filing cabinets in the squad room were filled with old police reports. The police department was being computerized, so the set designer was able to acquire them.

SubQuestion No: 10

Q.10 The passage is mainly about:

Ans

1. the book 'Homicide: A Year on the Killing Streets'

🗶 2. The Wire – the best TV drama

X 3. David Simon, the author

✓ 4. the TV show 'Homicide: Life on the Street'

Question ID: 630680197569 Status: Answered