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# **PSTCL AE**

**Previous Year Paper  
Civil 2 Aug 2021 Shift 3**



Punjab Government Initiative under Ghar Ghar Rozgar



Participant ID	
Participant Name	
Test Center Name	iON Digital Zone iDZ Bahadurgarh Patiala
Test Date	02/08/2021
Test Time	4:30 PM - 6:30 PM
Subject	Assistant Engineer OT (Civil)

Section : General Knowledge or Awareness

Q.1 Who among the following was elected as the first President of Hockey India from north-east India in November 2020?

- Ans
- ☒ 1. MohdMushtaque Ahmad
  - ☒ 2. Gyanendro Ningombam
  - ☒ 3. Kothajit Singh
  - ☒ 4. Chinglensana Singh

Question ID : 59445945475  
Status : Answered  
Chosen Option : 2

Q.2 Which among the following cell organelles are termed the “powerhouses’ or ‘storage batteries’ of the cell?

- Ans
- ☒ 1. Mitochondria
  - ☒ 2. Lysosome
  - ☒ 3. Nucleus
  - ☒ 4. Golgi apparatus

Question ID : 59445945472  
Status : Answered  
Chosen Option : 1

Q.3 Which of the following cities/towns hosted the 80th All India Presiding Officers' Conference in November 2020?

- Ans ☒ 1. Kevadia  
☒ 2. Haldia  
☒ 3. Jharia  
☒ 4. Bavla

Question ID : 59445945476  
Status : Answered  
Chosen Option : 1

Q.4 The foundations of the present Punjab were laid by\_\_\_\_\_, a hermit who became a military leader and, with his fighting band of Sikhs, temporarily liberated the eastern part of the province from Mughal rule in 1709–1710.

- Ans ☒ 1. Guru Gobind Singh  
☒ 2. Banda Singh Bahadur  
☒ 3. Ranjit Singh  
☒ 4. Guru Tegh Bahadur

Question ID : 59445945474  
Status : Answered  
Chosen Option : 3

Q.5 Which of the following States is the largest producer of diamonds?

- Ans ☒ 1. Madhya Pradesh  
☒ 2. Karnataka  
☒ 3. Andhra Pradesh  
☒ 4. Jharkhand

Question ID : 59445945473  
Status : Answered  
Chosen Option : 1

Section : Reasoning or Numerical ability

Q.1 If every second and fourth Saturdays, and all Sundays are holidays for XYZ bank, then how many working days are there in a 31 days month starting from a Sunday.

- Ans ☒ 1. 24  
☒ 2. 23  
☒ 3. 26  
☒ 4. 25

Question ID : 59445945477  
Status : Answered  
Chosen Option : 1

Q.2 A group of letters is given which are numbered 1 to 6. Four options given below depict combinations of these numbers. Select that combination of numbers so that letters arranged accordingly form a meaningful word.

C	D	Z	A	O	I
1	2	3	4	5	6

- Ans
- ☒ 1. 3, 5, 2, 6, 1, 4
  - ☒ 2. 3, 5, 2, 6, 4, 1
  - ☒ 3. 6, 3, 5, 2, 1, 4
  - ☒ 4. 6, 3, 5, 2, 4, 1

Question ID : 59445945480  
Status : Answered  
Chosen Option : 2

Q.3 Two statements are given followed by two conclusions I and II. You have to consider these statements to be true, even if they seem at variance from commonly known facts. Choose which of the given conclusion(s) logically follow/s from the given statement.

Statements:  
I. All cars are white.  
II.No white is free.

Conclusions:  
I. All cars are free.  
II. Some free are white.

- Ans
- ☒ 1. Only conclusion I follows.
  - ☒ 2. Only conclusion II follows.
  - ☒ 3. Neither conclusion I nor II follows.
  - ☒ 4. Both conclusions I and II follows.

Question ID : 59445945483  
Status : Answered  
Chosen Option : 3

Q.4 A statement is given followed by two conclusions. Without resolving anything yourself, select the conclusion/s which logically follows from the given statement.

Statement:As per recent studies, regular fasting is good for health.

Conclusions: I. All healthy people do regular fasting.  
II. Overeating is harmful for health.

- Ans
- ☒ 1. Neither conclusion I nor II follows.
  - ☒ 2. Only conclusion II follows.
  - ☒ 3. Only conclusion I follows.
  - ☒ 4. Either conclusion I or II follow.

Question ID : 59445945484  
Status : Answered  
Chosen Option : 3

Q.5 A + B means 'A is father of B'  
A – B means 'A is daughter of B'  
A × B means 'A is sister of B'  
If U + V– Q × P, then how is V related to P?

- Ans
- ☒ 1. Niece
  - ☐ 2. Uncle
  - ☐ 3. Nephew
  - ☐ 4. Daughter

Question ID : 59445945482  
Status : Answered  
Chosen Option : 1

Q.6 Jitin, Jack and John, belonged to exactly one of different professions amongst Doctor, Lawyer and Chartered Accountant. Each person always gives two replies to any question asked. Out of these three, exactly one person always speaks the truth, other always lies and another always alternates between truth and lie, in any order. When each was asked " which profession do you belong to?" the following were their replies:

Jitin: I am a doctor. Kunal is a lawyer.  
Kunal: I am a doctor. John is a Chartered Accountant.  
John: Jitin is a Lawyer. Kunal is a doctor.

Who among the three must be Chartered Accountant?

- Ans
- ☐ 1. Jitin
  - ☐ 2. Cannot be determined
  - ☐ 3. Kunal
  - ☒ 4. John

Question ID : 59445945478  
Status : Answered  
Chosen Option : 4

Q.7 An electronic device rearranges numbers step by step in a particular order according to a set of rules. The device stops when the final result is obtained. In this case the device stops at Step V.

Input : 66 87 95 42 51 25 15 7  
Step I: 7 66 87 95 42 51 25 15  
Step II: 7 15 66 87 95 42 51 25  
Step III: 7 15 25 66 87 95 42 51  
Step IV: 7 15 25 42 66 87 95 51  
Step V: 7 15 25 42 51 66 87 95

Following the same logic of the above example, which of the following will be the final step for the input given below?

Input : 27 86 65 39 45 5 18 96

- Ans
- ☐ 1. Step VI
  - ☐ 2. Step VII
  - ☒ 3. Step V
  - ☐ 4. Step IV

Question ID : 59445945485  
Status : Answered  
Chosen Option : 3

Q.8 Six friends G, H, I, J, K and L are watching cricket match facing North. K is between H and J. G is not at any end. I is at the right end and to immediate right to H. Who is immediate right of G?

- Ans
- ☒ 1. J
  - ☐ 2. K
  - ☐ 3. I
  - ☐ 4. G

Question ID : 59445945479  
Status : Answered  
Chosen Option : 1

Q.9 T and U are married couple. P and Q are brothers. T is the sister of P. How is U related to Q?

- Ans
- ☐ 1. Sister
  - ☒ 2. Brother-in-law
  - ☐ 3. Sister-in-law
  - ☐ 4. Brother

Question ID : 59445945481  
Status : Answered  
Chosen Option : 2

Q.10 Choose the missing set of letters from the given options that will complete the series:

CXB, FSI, INP, LIW, \_\_\_\_

- Ans
- ☐ 1. PDE
  - ☒ 2. ODD
  - ☐ 3. ODE
  - ☐ 4. OED

Question ID : 59445945486  
Status : Answered  
Chosen Option : 2

Q.11 Meetu loses 18 Percent by selling an article for Rs 492. If she sells it for Rs 608.40, then there is a:

- Ans
- ☒ 1. Profit of 1.4 Percent
  - ☐ 2. Loss of 1.4 Percent
  - ☐ 3. Profit of 14 Percent
  - ☐ 4. Loss of 0.14 Percent

Question ID : 59445945491  
Status : Answered  
Chosen Option : 1

Q.12 If the price of a commodity increases by 20 Percent, then by how much percent a person should reduce his consumption so that his expenditure increases by 8 Percent only?

- Ans
- ☒ 1. 8.5 Percent
  - ☒ 2. 10 Percent
  - ☒ 3. 9 Percent
  - ☒ 4. 8 Percent

Question ID : 59445945494

Status : Answered

Chosen Option : 2

Q.13 The value of  $5\frac{1}{2} \div 1\frac{2}{5}$  of  $\frac{15}{28} - \frac{13}{16} \div 6\frac{1}{2} - \left(7\frac{1}{3} - \frac{1}{4}\right)$  is:

- Ans
- ☒ 1.  $\frac{2}{3}$
  - ☒ 2. 1
  - ☒ 3.  $\frac{1}{8}$
  - ☒ 4.  $\frac{1}{2}$

Question ID : 59445945488

Status : Answered

Chosen Option : 3

Q.14 There are three numbers A, B and C. A is 38 Percent greater than C and B is 40 Percent less than the sum of A and C. By what percent is B greater than A? (Correct to one decimal place)

- Ans
- ☒ 1. 3.5 Percent
  - ☒ 2. 4.2 Percent
  - ☒ 3. 3.8 Percent
  - ☒ 4. 4.5 Percent

Question ID : 59445945493

Status : Answered

Chosen Option : 1

Q.15 What is the value of  $(3x - 2y)$  in the following series?

8, 11, 16, 23, x, 43, y, 71

- Ans
- ☒ 1. 9
  - ☒ 2. -9
  - ☒ 3. 12
  - ☒ 4. -16

Question ID : 59445945489

Status : Answered

Chosen Option : 4



Q.16 The value of  $39 - \{25 - (6 - 16) \div 2\} - 112 \div 4$  of  $2 + 7$  is:

- Ans
- ☒ 1. 9
  - ☒ 2. 5
  - ☒ 3. 2
  - ☒ 4. 0

Question ID : 59445945487  
Status : Answered  
Chosen Option : 3

Q.17 A trader bought 1500 kg of rice at Rs 40 per kg. He sold 900 kg of rice at 10 Percent profit, 200 kg of rice at 20 Percent loss and the remaining at 12 Percent profit. What is his overall profit (in Rs) in the whole transaction?

- Ans
- ☒ 1. 3880
  - ☒ 2. 3750
  - ☒ 3. 3820
  - ☒ 4. 3920

Question ID : 59445945492  
Status : Answered  
Chosen Option : 4

Q.18 A 250 m long train crosses a pole in 15 seconds. It will cross a 350 m long bridge in:

- Ans
- ☒ 1. 36 seconds
  - ☒ 2. 35 seconds
  - ☒ 3. 40 seconds
  - ☒ 4. 32 seconds

Question ID : 59445945496  
Status : Answered  
Chosen Option : 1

Q.19 What is the missing term (?) in the following series?

A2B, C3E, E5H, G7K, I11N, ?, M17T

- Ans
- ☒ 1. K13P
  - ☒ 2. K13Q
  - ☒ 3. L15Q
  - ☒ 4. J15P

Question ID : 59445945490  
Status : Answered  
Chosen Option : 2

Q.20 A sum of Rs 7080 is divided among A, B and C such that the ratio of shares of C and A is 8:5 and that of B and A is 4:3. What is the difference (in Rs) between the shares of B and C?

- Ans
- ☒ 1. 450
  - ☒ 2. 420
  - ☒ 3. 520
  - ☒ 4. 480

Question ID : 59445945495  
Status : Answered  
Chosen Option : 4

Section : English Language

Q.1 Select the most appropriate word for the following.

The young one of a goat

- Ans
- ☒ 1. lamb
  - ☒ 2. calf
  - ☒ 3. kid
  - ☒ 4. cub

Question ID : 59445945500  
Status : Answered  
Chosen Option : 1

Q.2 Select the most appropriate option to fill in the blank.

They have repaired only a part of \_\_\_\_ wall outside my room.

- Ans
- ☒ 1. a
  - ☒ 2. the
  - ☒ 3. no word required
  - ☒ 4. an

Question ID : 59445945498  
Status : Answered  
Chosen Option : 2

Q.3 Select the most appropriate antonym of the given word.

ZEALOUS

- Ans
- ☒ 1. excited
  - ☒ 2. pathetic
  - ☒ 3. indifferent
  - ☒ 4. enthusiastic

Question ID : 59445945509  
Status : Answered  
Chosen Option : 4

Q.4 Select the most appropriate word for the following.

a doctor who specializes in the treatment of heart diseases

- Ans
- ☒ 1. nephrologist
  - ☒ 2. pathologist
  - ☒ 3. ophthalmologist
  - ☒ 4. cardiologist

Question ID : 59445945501  
Status : Answered  
Chosen Option : 4

Q.5 Select the most appropriate option to correct the underlined part in the given sentence.

If there is no need to correct it, select 'no correction required'. They have a huge mango tree in their garden, have they?

- Ans
- ☒ 1. do they
  - ☒ 2. aren't they
  - ☒ 3. no correction required
  - ☒ 4. haven't they

Question ID : 59445945510  
Status : Answered  
Chosen Option : 4

Q.6 Select the most appropriate synonym of the given word.

AUSTERE

- Ans
- ☒ 1. rich
  - ☒ 2. elaborate
  - ☒ 3. unadorned
  - ☒ 4. luxurious

Question ID : 59445945507  
Status : Answered  
Chosen Option : 4

Q.7 Select the most appropriate option to correct the underlined part in the given sentence.

If there is no need to correct it, select 'no correction required'. The policemen fine the people who are not wearing masks.

- Ans
- ☒ 1. who are not wear
  - ☒ 2. no correction required
  - ☒ 3. who were not wearing
  - ☒ 4. which are not wearing

Question ID : 59445945511  
Status : Answered  
Chosen Option : 3

Q.8 Select the sentence structure that is grammatically correct.

- Ans
- ☒ 1. Green vegetables that the doctor said she must eat.
  - ☒ 2. The doctor said green vegetables must she eat that.
  - ☒ 3. She must eat that the doctors said green vegetables.
  - ☒ 4. The doctor said that she must eat green vegetables.

Question ID : 59445945505  
Status : Answered  
Chosen Option : 4

Q.9 Identify the segment in the sentence, which contains a grammatical error. If there is no error, select 'No error'.

From my opinion she has made a good decision.

- Ans
- ☒ 1. she has made
  - ☒ 2. No error
  - ☒ 3. a good decision
  - ☒ 4. From my opinion

Question ID : 59445945497  
Status : Answered  
Chosen Option : 4

Q.10 Select the most appropriate antonym of the given word.

COMFORTABLE

- Ans
- ☒ 1. troubled
  - ☒ 2. restful
  - ☒ 3. happy
  - ☒ 4. healthy

Question ID : 59445945508  
Status : Answered  
Chosen Option : 1

Q.11 Select the wrongly spelt word.

- Ans
- ☒ 1. blizard
  - ☒ 2. blister
  - ☒ 3. bleak
  - ☒ 4. blithe

Question ID : 59445945503  
Status : Answered  
Chosen Option : 4

Q.12 Select the most appropriate synonym of the given word.

MENACE

- Ans
- ☒ 1. delight
  - ☒ 2. comfort
  - ☒ 3. trouble
  - ☒ 4. surety

Question ID : 59445945506  
Status : Not Answered  
Chosen Option : --

Q.13 Select the most appropriate option to fill in the blank.

I read the autobiography of a Swami \_\_\_\_\_ my vacation.

- Ans
- ☒ 1. while
  - ☒ 2. within
  - ☒ 3. during
  - ☒ 4. into

Question ID : 59445945499  
Status : Answered  
Chosen Option : 3

Q.14 Select the sentence structure that is grammatically correct.

- Ans
- ☒ 1. Last month they very hard studied.
  - ☒ 2. They very hard last month studied.
  - ☒ 3. Studied they last month very hard.
  - ☒ 4. They studied very hard last month.

Question ID : 59445945504  
Status : Answered  
Chosen Option : 4

Q.15 Select the correctly spelt word.

- Ans
- ☒ 1. inference
  - ☒ 2. inference
  - ☒ 3. inference
  - ☒ 4. inference

Question ID : 59445945502  
Status : Answered  
Chosen Option : 1

Q.1 The centre to centre spacing of steel bolts in a row measured along the direction of loads is called:

- Ans
- ☒ 1. Staggered distance
  - ☒ 2. Edge distance
  - ☒ 3. Pitch of the bolt
  - ☒ 4. Gauge distance

Question ID : 59445945569  
Status : Answered  
Chosen Option : 3

Q.2 Secondary treatment of sewage is caused by:

- Ans
- ☒ 1. Algae
  - ☒ 2. Coagulants
  - ☒ 3. Bacteria
  - ☒ 4. Zooplankton

Question ID : 59445945537  
Status : Answered  
Chosen Option : 3

Q.3 Which of the following method of quarrying is suitable for costly, soft and stratified rocks such as sandstone, limestone, laterite, marble and slate?

- Ans
- ☒ 1. Heating
  - ☒ 2. Blasting
  - ☒ 3. Wedging
  - ☒ 4. Excavating

Question ID : 59445945515  
Status : Answered  
Chosen Option : 3

Q.4 Find the magnetic declination at a place if the magnetic bearing of the sun at noon is 350 degrees 20 minutes?

- Ans
- ☒ 1.  $9^{\circ}40'N$
  - ☒ 2.  $9^{\circ}40'W$
  - ☒ 3.  $9^{\circ}40'E$
  - ☒ 4.  $9^{\circ}40'S$

Question ID : 59445945525  
Status : Answered  
Chosen Option : 3

Q.5 What is the maximum slenderness ration for the members always under tension other than pre-tensioned members in design of steel structures?

- Ans
- ☒ 1. 400
  - ☐ 2. 350
  - ☐ 3. No limit
  - ☐ 4. 180

Question ID : 59445945571  
Status : Answered  
Chosen Option : 1

Q.6 Moment of inertia of triangle with base (b) and height (h) about the centroid is given by:

- Ans
- ☐ 1.  $\frac{hb^3}{36}$
  - ☒ 2.  $\frac{bh^3}{36}$
  - ☐ 3.  $\frac{bh^3}{12}$
  - ☐ 4.  $\frac{hb^3}{12}$

Question ID : 59445945555  
Status : Answered  
Chosen Option : 2

Q.7 Which is the most commonly used method for computation of bending moments in the limit state of collapse method in two way slabs suggested by IS 456-2000?

- Ans
- ☒ 1. Johansen's yield line theory
  - ☐ 2. Rankine's Theory
  - ☐ 3. Wester-guard's theory
  - ☐ 4. Euler's theory

Question ID : 59445945562  
Status : Answered  
Chosen Option : 3

Q.8 To meet the durability of reinforced concrete member which is severely exposed condition, the nominal concrete cover provided as per IS 456-2000 is not less than:

- Ans
- ☒ 1. 50 mm
  - ☐ 2. 30 mm
  - ☐ 3. 75 mm
  - ☐ 4. 45 mm

Question ID : 59445945561  
Status : Answered  
Chosen Option : 4

Q.9 Chutes are generally provided for:

- Ans ☒ 1. Transporting concrete from ground level to a lower level.
- ☐ 2. Transporting concrete during construction of multi-storey structures
- ☐ 3. Transporting concrete from ground level to a higher level.
- ☐ 4. Transporting concrete from ground level to the same ground level.

Question ID : 59445945545  
Status : Answered  
Chosen Option : 1

Q.10 If E- Young's modulus, K- Bulk modulus and G-rigidity modulus, then the relation between elastic constants E, G, and K is given by:

- Ans ☐ 1.  $E = \frac{KG}{K + G}$
- ☐ 2.  $E = \frac{KG}{3K + G}$
- ☒ 3.  $E = \frac{9KG}{3K + G}$
- ☐ 4.  $E = \frac{K + G}{9K}$

Question ID : 59445945554  
Status : Answered  
Chosen Option : 3

Q.11 What is the percentage air voids of a soil if degree of saturation and void ratio are 50% and 50% respectively?

- Ans ☐ 1. 19%
- ☒ 2. 17%
- ☐ 3. 21%
- ☐ 4. 15%

Question ID : 59445945533  
Status : Answered  
Chosen Option : 2

Q.12 What is the approximate average percentage of bound water and gel water by weight of cement required for complete hydration of Portland cement?

- Ans ☐ 1. 15% and 23 %
- ☐ 2. 20 % and 10 %
- ☐ 3. 30 % and 20 %
- ☒ 4. 23 % and 15 %

Question ID : 59445945514  
Status : Answered  
Chosen Option : 4



**Q.13** What is the effective length of compression member shown below which is restrained for both translation and rotation at one end and free at the other end, where L-unsupported length of compression member?



- Ans ☒ 1. 2.0 L
- ☒ 2. 0.65 L
- ☒ 3. 1.2 L
- ☒ 4. 1.0 L

Question ID : 59445945568  
Status : Answered  
Chosen Option : 1

**Q.14** The material selected for sewer should have:

- Ans ☒ 1. Low Manning's constant N
- ☒ 2. Manning's constant is not required to be considered
- ☒ 3. Any value of Manning's constant N
- ☒ 4. High Manning's constant N

Question ID : 59445945539  
Status : Answered  
Chosen Option : 1

**Q.15** If the permissible compressive stress of concrete in bending is 10 MPa for M30 grade of concrete, then what is the modular ratio?

- Ans ☒ 1. 10.96
- ☒ 2. 9.33
- ☒ 3. 7.98
- ☒ 4. 5.83

Question ID : 59445945557  
Status : Answered  
Chosen Option : 2

**Q.16** Which of the following is a characteristic of Hoffman's kiln type of brick manufacture?

- Ans ☒ 1. The kiln is constructed over ground and circular in shape consists of 12 sections
- ☒ 2. The kiln is either rectangular, circular or oval in shape constructed fully underground or partly projecting above ground consisting 6 sections
- ☒ 3. The kiln is in the form of tunnel which may be circular, oval or straight in shape contains stationary zone of fire
- ☒ 4. The kiln is constructed underground and rectangular in shape consists of 12 sections

Question ID : 59445945517  
Status : Answered  
Chosen Option : 2

Q.17 In a particle size distribution curve, a steep curve of shape S represents a soil:

- Ans
- ☒ 1. Gap graded soils
  - ☒ 2. Coarse grained soils
  - ☒ 3. Fine grained soils
  - ☒ 4. Uniform soils

Question ID : 59445945528  
Status : Answered  
Chosen Option : 4

Q.18 The apparatus generally used for measuring the specific surface of the cement is:

- Ans
- ☒ 1. Lea and Nurse Air Permeability
  - ☒ 2. Vibrating Machine
  - ☒ 3. Lea
  - ☒ 4. Vicat instrument

Question ID : 59445945544  
Status : Answered  
Chosen Option : 1

Q.19 The combined correction for curvature and refraction for a distance 3000 m is given by:

- Ans
- ☒ 1. 0.10 m
  - ☒ 2. 0.42 m
  - ☒ 3. 0.61 m
  - ☒ 4. 0.71 m

Question ID : 59445945524  
Status : Answered  
Chosen Option : 3

Q.20 The rock in which the principal constituent present is clay (Al<sub>2</sub>O<sub>3</sub>) and they are hard, and brittle is called:

- Ans
- ☒ 1. Igneous rocks
  - ☒ 2. Argillaceous Rocks
  - ☒ 3. Calcareous rocks
  - ☒ 4. Siliceous rocks

Question ID : 59445945513  
Status : Answered  
Chosen Option : 2

Q.21 What is the approximate radius of a reinforced concrete spherical dome used for storage of water if diameter of spherical dome is 10 m?

- Ans
- ☒ 1. 5 m
  - ☒ 2. 7 m
  - ☒ 3. 9 m
  - ☒ 4. 2 m

Question ID : 59445945566  
Status : Answered  
Chosen Option : 1

Q.22 When compression reinforcement is provided in addition to tension reinforcement in beams, such beams are termed as:

- Ans
- ☒ 1. Doubly reinforced beams
  - ☒ 2. Under reinforced beam
  - ☒ 3. Over reinforced beam
  - ☒ 4. Singly reinforced beams

Question ID : 59445945558  
Status : Answered  
Chosen Option : 1

Q.23 The following statements pertain to bolted connection and select the correct option.

Statement-1: the two plates to be connected overlap each other are called lap joint  
Statement-2: the two main plates about each other with help of cover plate is called Butt joint

- Ans
- ☒ 1. Both statements are correct
  - ☒ 2. Statement-1 is correct and statement-2 is incorrect
  - ☒ 3. Both statements are incorrect
  - ☒ 4. Statement-1 is incorrect and statement-2 is correct

Question ID : 59445945570  
Status : Answered  
Chosen Option : 1

Q.24 Which of the following construction material is an example of Pozzolanic material?

- Ans
- ☒ 1. Surkhi
  - ☒ 2. Rice husk ash
  - ☒ 3. Ground Granulated Blast furnace Slag
  - ☒ 4. Fly ash

Question ID : 59445945546  
Status : Answered  
Chosen Option : 3

Q.25 The following statements pertain to effective stress in a soil mass under hydrostatic condition and select the correct option.

Statement 1: the effective stress at any section goes on increasing as the water table goes down.

Statement 2: the effective stress depends upon the bulk unit weight above the groundwater table and submerged unit weight below the water table.

- Ans
- ☒ 1. Both Statements incorrect
  - ☒ 2. Statement 1 is correct and statement 2 is incorrect
  - ☒ 3. Statement 1 is incorrect and statement 2 is correct
  - ☒ 4. Both Statements correct

Question ID : 59445945534  
Status : Answered  
Chosen Option : 4

Q.26 A solid shaft of 0.2 m diameter is used to transmit a torque. What is the maximum torque transmitted by the shaft if maximum shear stress induced to the shaft is 48 N/ Sq. mm?

- Ans
- ☒ 1.  $0.6\pi$  N-m
  - ☒ 2.  $0.024\pi$  N-m
  - ☒ 3.  $0.12\pi$  N-m
  - ☒ 4.  $0.05\pi$  N-m

Question ID : 59445945556  
Status : Answered  
Chosen Option : 3

Q.27 Read the Following statements pertain to RCC design and select the correct option:

Statement-1: under reinforced section' is one in which the area of tension steel is such that as the ultimate limit state is approached, the yield strain is reached in the steel before the ultimate compressive strain is reached in the extreme fibre of the concrete

Statement-2: An over-reinforced section is one in which the area of tension steel is such that at the ultimate limit state, the ultimate compressive strain in concrete is reached, however the tensile strain in the reinforcing steel is less than the yield strain

- Ans
- ☒ 1. Statement-1 is incorrect and statement -2 is correct
  - ☒ 2. Statement-1 is correct and statement -2 is incorrect
  - ☒ 3. Both statements are correct
  - ☒ 4. Both statements are incorrect

Question ID : 59445945563  
Status : Answered  
Chosen Option : 3

Q.28 If the sewage contains greasy and fatty oils, they are removed in:

- Ans
- ☒ 1. Grit Chamber
  - ☒ 2. Detritus Tank
  - ☒ 3. Sedimentation Tank
  - ☒ 4. Skimming Tank

Question ID : 59445945540  
Status : Answered  
Chosen Option : 4

Q.29 Water supply projects are generally designed for:

- Ans
- ☒ 1. 20 to 40 years
  - ☐ 2. 150 years
  - ☐ 3. 40 to 60 years
  - ☐ 4. 100 years

Question ID : 59445945538  
Status : Answered  
Chosen Option : 3

Q.30 Which of the following arch is an example of determinate structure?

- Ans
- ☐ 1. Fixed arch
  - ☐ 2. Four hinged arch
  - ☐ 3. Two hinged arch
  - ☒ 4. Three hinged arch

Question ID : 59445945552  
Status : Answered  
Chosen Option : 4

Q.31 Identify the following cement generally used in the manufacture of a concrete sleeper for the Indian Railways.

- Ans
- ☐ 1. High Alumina Cement
  - ☒ 2. IRS-T 40 Special Grade Cement
  - ☐ 3. Rediset Cement
  - ☐ 4. High strength cement

Question ID : 59445945543  
Status : Answered  
Chosen Option : 2

Q.32 The following statements pertain to paints.

Statement A: a base forms bulk of paint and imparts durability to the surface which is painted  
Statement A: Linseed oil acts as a vehicle in paint

- Ans
- ☐ 1. Both statements are incorrect
  - ☒ 2. Both statements are correct
  - ☐ 3. Statement A is incorrect and B is correct
  - ☐ 4. Statement A is correct and B is incorrect

Question ID : 59445945521  
Status : Answered  
Chosen Option : 2

Q.33 Which of the Bureau of Indian Standards (IS) recommended a set of procedure for the design of concrete mix?

- Ans
- ☒ 1. IS 1077-1997
  - ☒ 2. IS 10262 – 1982
  - ☒ 3. IS 10500 – 2012
  - ☒ 4. IS 456 – 2000

Question ID : 59445945547  
Status : Answered  
Chosen Option : 2

Q.34 The decrease in void ratio per unit increase in effective stress is called:

- Ans
- ☒ 1. Coefficient of volume change
  - ☒ 2. Expansion index
  - ☒ 3. Coefficient of compressibility
  - ☒ 4. Compression index

Question ID : 59445945532  
Status : Answered  
Chosen Option : 3

Q.35 Which of the following Bougue compound of cement forms slowly and responsible for giving progressive strength to cement?

- Ans
- ☒ 1. Tricalcium silicate
  - ☒ 2. Tetra-calcium alumino-ferrite
  - ☒ 3. Dicalcium silicate
  - ☒ 4. Tricalcium Aluminate

Question ID : 59445945520  
Status : Answered  
Chosen Option : 3

Q.36 According IS 456-2000, the basic values of span to effective depth ratios for spans up to 10m in the case of cantilever beam is:

- Ans
- ☒ 1. 7
  - ☒ 2. 35
  - ☒ 3. 26
  - ☒ 4. 20

Question ID : 59445945559  
Status : Answered  
Chosen Option : 1

Q.37 The formation of cement paste at the surface due to the process of \_\_\_\_\_ concrete is known as Laitance.

- Ans
- ☐ 1. Segregation
  - ☐ 2. Batching
  - ☐ 3. Curing
  - ☒ 4. Bleeding

Question ID : 59445945548  
Status : Answered  
Chosen Option : 4

Q.38 Terra-cotta is a kind of \_\_\_\_\_ building material.

- Ans
- ☐ 1. plastic ware
  - ☒ 2. Earthenware
  - ☐ 3. Metal ware
  - ☐ 4. Glassware

Question ID : 59445945516  
Status : Answered  
Chosen Option : 4

Q.39 During level surveying, the following readings were taken:  
the elevation of bench mark at A is 310.852 m,  
back sight is 2.856 m,  
fore sight is 1.836 m,  
then the elevation of point B is

- Ans
- ☐ 1. 312.688 m
  - ☐ 2. 313.708 m
  - ☒ 3. 311.872 m
  - ☐ 4. 315.544 m

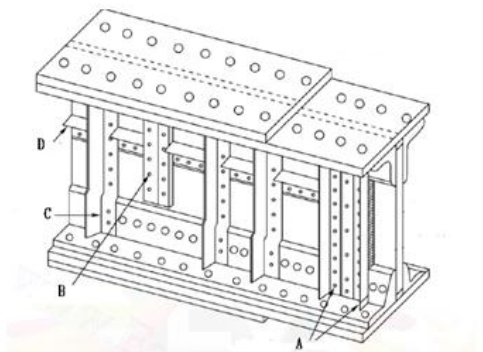
Question ID : 59445945522  
Status : Answered  
Chosen Option : 3

Q.40 What the degree of indeterminacy for the beam which is fixed at one end and hinged at other end?

- Ans
- ☐ 1. 1
  - ☒ 2. 2
  - ☐ 3. 3
  - ☐ 4. 4

Question ID : 59445945553  
Status : Answered  
Chosen Option : 2

Q.41 Name the elements of plate girder marked A, B, C, D shown in the following figure.



- Ans
- ☒ 1. A-Horizontal stiffener; B-Web splice; C-Vertical stiffener; D-Bearing stiffener
  - ☒ 2. A-Vertical stiffener; B-Web splice; C-Bearing stiffener; D-Horizontal stiffener
  - ☒ 3. A-Bearing stiffener; B-Web splice; C-Vertical stiffener; D-Horizontal stiffener
  - ☒ 4. A-BEARING stiffener; B-Horizontal stiffener; C-Vertical stiffener; D-Web splice

Question ID : 59445945567  
Status : Answered  
Chosen Option : 3

Q.42 The cement used For grouting operations in large structure is:

- Ans
- ☒ 1. Quick Setting Cement
  - ☒ 2. Portland Pozzolana Cement
  - ☒ 3. Low Heat Cement
  - ☒ 4. Super Sulphated Cement

Question ID : 59445945542  
Status : Answered  
Chosen Option : 3

Q.43 Which of the following type of air entraining agent is not used for making air entrained concrete?

- Ans
- ☒ 1. Animal and vegetable fats and oils
  - ☒ 2. Water soluble soaps of resin acids
  - ☒ 3. Triethenolamine chlorides and calcium nutritre,
  - ☒ 4. Natural wood resins

Question ID : 59445945551  
Status : Answered  
Chosen Option : 2



Q.44 Match the composition of good brick earth from the following list:

List-A (Ingredients)	List -B (Percentage range)
1. Alumina	A. 50-60%
2. Silica	B. < 10%
3. Oxides of iron	C. 20-30 %
4. Alkalis	D. 5-6%

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

Question ID : 59445945519  
Status : Answered  
Chosen Option : 3

Q.45 What is the standard size of a slump cone used for measuring workability of concrete?

- Ans
- ☒ 1. Cone of 10 cm top diameter, 20 cm bottom diameter and 30 cm height
  - ☒ 2. Cone of 15 cm top diameter, 20 cm bottom diameter and 25 cm height
  - ☒ 3. Cone of 20 cm top diameter, 25 cm bottom diameter and 30 cm height
  - ☒ 4. Cone of 10 cm top diameter, 25 cm bottom diameter and 25 cm height

Question ID : 59445945550  
Status : Answered  
Chosen Option : 1

Q.46 Shear keys are generally provided in which of the following reinforced concrete structures?

- Ans
- ☒ 1. Footings
  - ☒ 2. Retaining walls
  - ☒ 3. Beams
  - ☒ 4. Water tanks

Question ID : 59445945565  
Status : Answered  
Chosen Option : 2

Q.47 Which of the following is a field method of measuring shear strength of soft clays soil?

- Ans
- ☒ 1. Triaxial shear test
  - ☒ 2. Unconfined compression test
  - ☒ 3. Shear vane test
  - ☒ 4. Direct shear test

Question ID : 59445945536  
Status : Answered  
Chosen Option : 1

Q.48 the mathematical expression shown below represents which of the following population forecasting method:  
 $P_n = P + nI + \frac{n(n-1)}{2}r$  Where, P = present population, I = average increase per decade, r = average incremental increase,  
n = no. of decades

- Ans
- ✓ 1. Incremental increase method
  - ✗ 2. Geometrical increase method
  - ✗ 3. Arithmetical increase method
  - ✗ 4. Logistic Method

Question ID : 59445945541  
Status : Answered  
Chosen Option : 1

Q.49 The minimum eccentricity for rectangular reinforced concrete column should be taken as \_\_\_\_\_.

- Ans
- ✓ 1. unsupported length/500 + (Lateral dimension/30)
  - ✗ 2. unsupported length/450 + (Lateral dimension/25)
  - ✗ 3. unsupported length/500 - (Lateral dimension/30)
  - ✗ 4. unsupported length/400 + (Lateral dimension/20)

Question ID : 59445945564  
Status : Answered  
Chosen Option : 1

Q.50 If  $\phi$  = nominal diameter of the bar,  $\sigma_s$  = stress in bar at the section considered at design load, and  $\tau_{hd}$  = design bond stress, Then development length ( $L_d$ ) is given by:

- Ans
- ✗ 1.  $L_d = \frac{\phi \tau_s}{4 \sigma_s}$
  - ✗ 2.  $L_d = \frac{\sigma_s}{4 \phi \tau_{hd}}$
  - ✓ 3.  $L_d = \frac{\phi \sigma_s}{4 \tau_{hd}}$
  - ✗ 4.  $L_d = \frac{\phi \sigma_s}{\tau_{hd}}$

Question ID : 59445945560  
Status : Answered  
Chosen Option : 3

Q.51 Decay of bricks caused due to the excess of:

- Ans
- ✓ 1. Magnesia
  - ✗ 2. Alkalies
  - ✗ 3. Oxides of iron
  - ✗ 4. Lime

Question ID : 59445945512  
Status : Answered  
Chosen Option : 1

**Q.52** The longitudinal separations in the wood between the annual rings is a type of wood defect and reduces the allowable shear strength without much effect on compressive and tensile values. What is that defect?

- Ans
- ☒ 1. Rindgall
  - ☒ 2. Shakes
  - ☒ 3. Knots
  - ☒ 4. Checks

Question ID : 59445945518  
Status : Answered  
Chosen Option : 2

**Q.53** In a particle size distribution curve, a steep curve of shape S represents a soil containing:

- Ans
- ☒ 1. Gap graded soils
  - ☒ 2. Coarse grained soils
  - ☒ 3. Fine grained soils
  - ☒ 4. Uniform soils

Question ID : 59445945529  
Status : Answered  
Chosen Option : 4

**Q.54** Which of the following scale is used to measure meters, decimeters and centimeters?

- Ans
- ☒ 1. Scale of chords
  - ☒ 2. Vernier
  - ☒ 3. Plain scale
  - ☒ 4. Diagonal scale

Question ID : 59445945523  
Status : Answered  
Chosen Option : 4

**Q.55** The size of the silt particles varies from:

- Ans
- ☒ 1. 0.002 mm to 0.075 mm
  - ☒ 2. Greater than 4.75 mm
  - ☒ 3. Less than 0.002 mm
  - ☒ 4. 0.075 mm to 4.75 mm

Question ID : 59445945527  
Status : Answered  
Chosen Option : 1

Q.56 Pycnometer method is used to determine\_\_\_\_\_ property of soil.

- Ans
- ☒ 1. Mass density
  - ☒ 2. Porosity
  - ☒ 3. Specific gravity
  - ☒ 4. Particle size

Question ID : 59445945530  
Status : Answered  
Chosen Option : 3

Q.57 Compression of soil can occur in one or more of the following and select the correct option:

- 1. compression of solid particles and water in the voids
- 2. compression and expulsion of air in the voids
- 3. expulsion of water in the voids

- Ans
- ☒ 1. 2 and 3 only
  - ☒ 2. 1 only
  - ☒ 3. 1 and 3 only
  - ☒ 4. All 1,2,3

Question ID : 59445945535  
Status : Answered  
Chosen Option : 4

Q.58 The effective size and the particle size corresponding to 60% finer for the well graded soils are respectively 0.004 mm and 0.08 mm obtained from particle size distribution curve. The cumulative uniformity coefficient for this soil is:

- Ans
- ☒ 1. 20
  - ☒ 2. 30
  - ☒ 3. 10
  - ☒ 4. 15

Question ID : 59445945531  
Status : Answered  
Chosen Option : 1

Q.59 What is the proportion of concrete mix (Cement : Fine aggregate: Coarse aggregate) with a 12 mm to 20 mm size aggregate used in heavily loaded RCC columns and RCC arches of long span?

- Ans
- ☒ 1. 1:2:2
  - ☒ 2. 1:4:8
  - ☒ 3. 1:2:4
  - ☒ 4. 1:1:2

Question ID : 59445945549  
Status : Answered  
Chosen Option : 4

Q.60 What the rule for reduced bearing (R.B) when converting whole circle bearing (W.C.B) between 180 degrees to 270 degrees?

Ans



1.  $R.B = W.C.B$ ; N-E quadrant



2.  $R.B = W.C.B - 180$  degree; S – E quadrant



3.  $R.B = 180$  degree –  $W.C.B$ ; S – E quadrant



4.  $R.B = 360$  degree –  $W.C.B$ ; N - W quadrant

Question ID : 59445945526

Status : Answered

Chosen Option : 2



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