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Test Date	04/04/2022
Test Time :	2:00 PM - 5:00 PM
Subject	Junior Engineer (Civil)

Section : General Awareness

Q.1 Who among the following authored the book titled 'The Founders: The Story of Paypal and The Entrepreneurs Who Shaped Silicon Valley'?

Ans
✗ A. Rajiv Bhatia
✓ B. Jimmy Soni
✗ C. Subhash Garg
✗ D. Akash Kansal

Question ID : **1034359008**
Status : **Answered**

Q.2 Who among the following was named as the Brand Ambassador of gaming app A23 in February 2022?

Ans
✗ A. Aamir Khan

✗ B. Saif Ali Khan

✓ C. Shahrukh Khan

✗ D. Salman Khan

Question ID : **1034359006**
Status : **Answered**

Q.3 The first woman to be ordained as a bhikkhuni was _____.

Ans
✓ A. Mahapajapati Gotami

✗ B. Sanghamitta

✗ C. Yasodhara

✗ D. Prajnadhara

Question ID : **1034359002**
Status : **Answered**

Q.4 Who among the following received the Dada Saheb Phalke International Film Festival Award for the best actor in February 2022?

Ans
✗ A. Ayushmann Khurrana

✗ B. Siddharth Malhotra

✗ C. Shahid Kapoor

✓ D. Ranveer Singh

Question ID : **1034359007**
Status : **Answered**

Q.5 In which of the following states is the Victoria Memorial located?

Ans
✗ A. Maharashtra
✗ B. Telangana
✓ C. West Bengal
✗ D. Odisha

Question ID : **1034358988**
Status : **Answered**

Q.6 In February 2022, Finance Minister, Nirmala Sitharaman launched the first colour souvenir coin on _____.

Ans
✗ A. Jataka
✗ B. Ramayana
✗ C. Mahabharata
✓ D. Panchatantra

Question ID : **1034358992**
Status : **Answered**

Q.7 Which of the following contents is NOT found in alluvial soil?

Ans
✗ A. Sand
✗ B. Clay
✗ C. Silt
✓ D. Lava flows

Question ID : **1034359000**
Status : **Answered**

Q.8 Which country is scheduled to host the International Olympic Committee in 2023 (as of February 2022)?

Ans
✗ A. Germany
✓ B. India
✗ C. Norway
✗ D. Japan

Question ID : **1034359014**
Status : **Answered**

Q.9 How many main Banis are there in Bharatanatyam?

Ans
✗ A. 2 to 3
✓ B. 4 to 5
✗ C. 8 or 9
✗ D. 6 to 7

Question ID : **1034358991**
Status : **Answered**

Q.10 The First Amendment Act of the Constitution of India came into force in the year _____.

Ans
✗ A. 1953
✗ B. 1954
✓ C. 1951
✗ D. 1955

Question ID : **1034359012**
Status : **Answered**

Q.11 As of the end of November 2021, India was the _____ largest forex reserves holder in the world, according to the Economic Survey 2021- 2022.

Ans
✗ A. fifth
✗ B. third
✓ C. fourth
✗ D. second

Question ID : **1034358993**
Status : **Answered**

Q.12 Which player among the following became the highest wicket taker in the history of ICC Women's World Cup as on March 2022?

Ans
✗ A. Smriti Mandhana
✗ B. Harmanpreet Kaur
✗ C. Mithali Raj
✓ D. Jhulan Goswami

Question ID : **1034359015**
Status : **Answered**

Q.13 Who among the following became the first player in the history of cricket to score a triple century in a debut first-class match?

Ans
✗ A. Babul Kumar
✗ B. Shashi Shekhar
✓ C. Sakibul Gani
✗ D. Ashutosh Aman

Question ID : **1034359017**
Status : **Answered**

Q.14 The _____ established a Supreme Court at Calcutta.

Ans
✗ A. Charter Act of 1833

✓ B. Regulating Act of 1773

✗ C. Charter Act of 1853

✗ D. Pitt's India Act of 1784

Question ID : **1034359013**
Status : **Answered**

Q.15 Which of the following has the greatest density?

Ans
✗ A. Groundnut oil

✓ B. Mercury

✗ C. Water

✗ D. Glycerin

Question ID : **1034358995**
Status : **Answered**

Q.16 Which two languages got the status of 'Classical' in 2008?

Ans
✗ A. Sanskrit and Malayalam

✗ B. Sanskrit and Tamil

✓ C. Kannada and Telegu

✗ D. Odia and Kannada

Question ID : **1034359010**
Status : **Answered**

Q.17 Who among the following was named as India's first national maritime security coordinator in February 2022?

Ans
✗ A. Robin K Dhowan

✓ B. G Ashok Kumar

✗ C. Karambir Singh

✗ D. Sunil Lanba

Question ID : **1034359009**
Status : **Answered**

Q.18 The 'slash and burn' type of agriculture is known as _____ in the Himalayan belt.

Ans
✗ A. Dahiya

✗ B. Jhumming

✓ C. Khil

✗ D. Kumari

Question ID : **1034359001**
Status : **Answered**

Q.19 Where was Akbar, the greatest of the Mughal rulers, born?

Ans
✗ A. Kalanaur

✗ B. Chunar

✓ C. Umarkot

✗ D. Kandahar

Question ID : **1034359003**
Status : **Answered**

Q.20 Permanent Lok Adalat is organised under which section of the Legal Services Authorities Act, 1987?

Ans
✗ A. Section 22-E
✗ B. Section 22-D
✓ C. Section 22-B
✗ D. Section 22-A

Question ID : **1034359011**
Status : **Answered**

Q.21 The part of Himalayas lying between Indus and _____ are known as Punjab Himalayas.

Ans
✗ A. Jhelum
✗ B. Ravi
✓ C. Sutlej
✗ D. Chenab

Question ID : **1034358999**
Status : **Answered**

Q.22 Madhya Pradesh governor, Mangu Bhai Patel inaugurated the _____ Khajuraho Dance festival in February 2022.

Ans
✗ A. 42th
✗ B. 50th
✗ C. 45th
✓ D. 48th

Question ID : **1034358990**
Status : **Answered**

Q.23 Which of the following is a sporozoan?

Ans
✗ A. Paramoecium
✗ B. Entamoeba
✗ C. Trypanosoma
✓ D. Plasmodium

Question ID : **1034358997**
Status : **Answered**

Q.24 Which of the following states won the Men's title in the Senior National Volleyball Championship 2021-22?

Ans
✗ A. Karnataka
✓ B. Haryana
✗ C. Odisha
✗ D. Telangana

Question ID : **1034359016**
Status : **Answered**

Q.25 As per Budget 2022, how many kilometres of National Highways will be expanded in 2022-23 under the PM Gati Shakti Masterplan for multi-modal connectivity?

Ans
✓ A. 25,000 km
✗ B. 20,000 km
✗ C. 35,000 km
✗ D. 30,000 km

Question ID : **1034358994**
Status : **Answered**

Q.26 According to the Central Pollution Control Board, particulate size of approximately _____ micrometers are responsible for causing the greatest harm to human health.

Ans
✔ A. 2.5
✘ B. 25.3
✘ C. 22.8
✘ D. 32.5

Question ID : **1034358996**
Status : **Answered**

Q.27 People gathered on the banks of which river to hear Mahatma Gandhi's speech before starting out on the Salt March in 1930?

Ans
✘ A. Mahi
✔ B. Sabarmati
✘ C. Tapi
✘ D. Narmada

Question ID : **1034359004**
Status : **Answered**

Q.28 Large rivers such as Mahanadi, Godavari, Krishna and Cauvery have formed large deltas on the _____ coast.

Ans
✘ A. Utkal
✘ B. Malabar
✘ C. Konkan
✔ D. Coromandel

Question ID : **1034358998**
Status : **Answered**

Q.29 Which of the following musicians won the Bharat Ratna in 1999?

Ans ✗ A. Hariprasad Chaurasia

✓ B. Pandit Ravi Shankar

✗ C. Pandit Shivkumar Sharma

✗ D. Ustad Bismillah Khan

Question ID : **1034358989**
Status : **Answered**

Q.30 When did the Santhal revolt take place?

Ans ✗ A. 1875-76

✗ B. 1845-46

✓ C. 1855-56

✗ D. 1865-66

Question ID : **1034359005**
Status : **Answered**

Section : **Reasoning**

Q.1 Select the number from among the given options that can replace the question mark (?) in the following series.
9, 16, 34, 66, 134, ?

Ans ✗ A. 243

✗ B. 246

✓ C. 266

✗ D. 234

Question ID : **1034359035**
Status : **Answered**

Q.2 'Spain' is related to 'Madrid' in the same way as 'Cuba' is related to '_____'.

Ans
✗ A. Oslo

✗ B. Lisbon

✓ C. Havana

✗ D. Thimphu

Question ID : **1034359025**
Status : **Answered**

Q.3 Sarayu departs from her hostel to reach her Institute. She walks 65 m towards North, and then she turns right and walks 30 m. She then turns left and walks 45 m. After that, she turns right and walks 20 m. She finally turns left and walks 10 m and reaches her Institute. What is the shortest distance between Sarayu's hostel and Institute?

Ans
✗ A. 120 m

✗ B. 150 m

✓ C. 130 m

✗ D. 140 m

Question ID : **1034359042**
Status : **Answered**

Q.4 Nitin, Pankaj, Rakul, Dhinesh, Sumit and Viplav are sitting on a bench facing towards the north. Sumit and Viplav are in the centre. Nitin and Pankaj are at the ends. Rakul is sitting to the left of Nitin. Who is sitting to the right of Pankaj?

Ans
✗ A. Sumit

✗ B. Rakul

✗ C. Viplav

✓ D. Dhinesh

Question ID : **1034359029**
Status : **Answered**

Q.5 Select the word-pair in which the two words share a different relationship from that shared by the two words in the rest of the word-pairs.

Ans
✗ A. Decay : Flourish

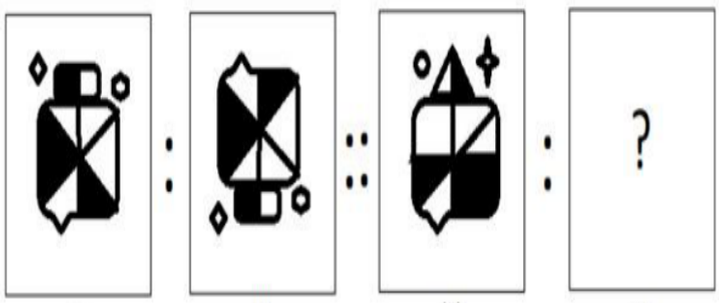
✗ B. Consent : Object

✗ C. Epitome : Expansion

✓ D. Frantic : Violent

Question ID : **1034359023**
Status : **Answered**

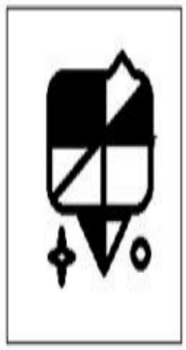
Q.6 Select the option that is related to figure C in the same way as figure B is related to figure A.



(A) (B) (C) (D)

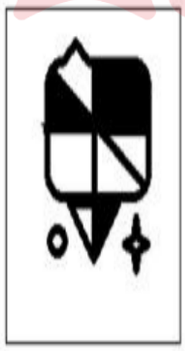
Ans

✗ A.



✗ B.

✓ C.



✗ D. 

Question ID : **1034359045**
Status : **Answered**

Q.7 Four letter-clusters pairs have been given, out of which three are alike in some manner and one is different. Select the one that is different.

Ans
✓ A. WITH : TOWC
✗ B. KITE : TNKZ
✗ C. STOP : OYSK
✗ D. LOCK : CTLF

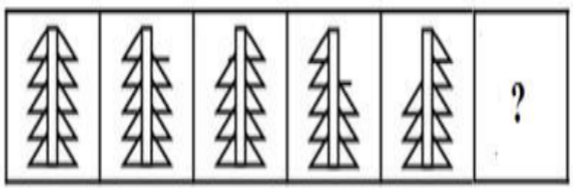
Question ID : **1034359022**
Status : **Answered**

Q.8 There are five friends playing football on the ground. Dilip is to the west of Manoj, Rohit is to the South of Dilip, Krunal is to the east of Rohit, who is to the east of Sravan. Krunal is towards which direction of Dilip?

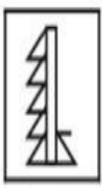
Ans
✗ A. North-East
✗ B. East
✗ C. South
✓ D. South-East

Question ID : **1034359041**
Status : **Answered**

Q.9 Select the figure from among the given options that can replace the question mark (?) in the following series.



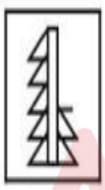
Ans

✗ A. 

✗ B. 

D

✗ C. 

✓ D. 

Question ID : **1034359044**

Status : **Answered**

Q.10 Select the option in which the words share the same relationship as that shared by the given pair of words.
Anemometer :Wind speed

Ans
✗ A. Hydrometer : Humidity

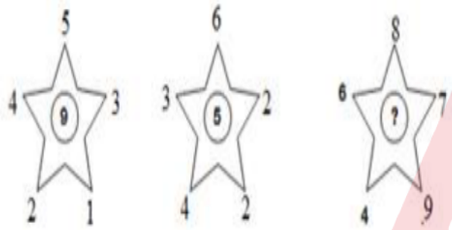
✗ B. Altimeter: Steps

✓ C. Galvanometer : Electricity

✗ D. Photometer : Area

Question ID : **1034359026**
Status : **Answered**

Q.11 Study the given pattern carefully and select the number that can replace the question mark (?) in it.



Ans
✗ A. 7

✗ B. 9

✗ C. 6

✓ D. 8

Question ID : **1034359038**
Status : **Answered**

Q.12 Four words have been given, out of which three are alike in some manner and one is different. Select the one that is different.

Ans
✗ A. Rake

✓ B. Peeler

✗ C. Shovel

✗ D. Trowel

Question ID : **1034359021**
Status : **Answered**

Q.13 In a certain code language, 'SCRIPT' is written as 'WMLOFP'. How will 'MANUAL' be written in that language?

Ans
✗ A. PXQRDI

✗ B. ODXKXJ

✓ C. OXXKDJ

✗ D. PQXDRI

Question ID : **1034359027**
Status : **Answered**

Q.14 Pranavi, Vinita, Rupa, Soumya, Bavana, Urmila and Arohi are seven friends sitting in a circle, facing the centre of the circle. Arohi is second to the left of Soumya and is the neighbour of Bavana and Urmila. Soumya is not a neighbour of Rupa or Bavana. Pranavi is a neighbour of Vinita and Rupa. Based on the given information, which of the following statements is correct?

Ans
✗ A. Arohi is sitting between Rupa and Pranavi.

✗ B. Vinita is an immediate neighbour of Bavana and Pranavi.

✓ C. Rupa is sitting between Bavana and Pranavi.

✗ D. Soumya is sitting between Urmila and Arohi.

Question ID : **1034359030**
Status : **Answered**

Q.15 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

Some monomials are binomials.

All expressions are equations.

All binomials are expressions.

Conclusions:

I. Some expressions are monomials.

II. All expressions are binomials.

III. All equations are monomials.

IV. All expressions are monomials.

Ans ✗ A. Neither conclusion I nor II follows.

✗ B. Only conclusion III follows.

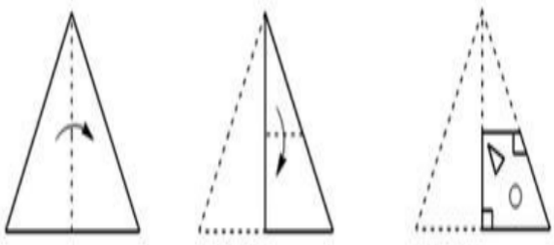
✗ C. Both conclusions II and IV follow.

✓ D. Only conclusion I follows.

Question ID : **1034359034**

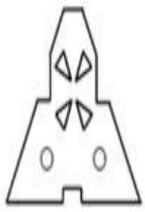
Status : **Answered**

Q.16 The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



Ans

✔ A.



✗ B.

✗ C.

✗ D.

Question ID : **1034359046**

Status : **Answered**

Q.17 Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.
DLJY : AOGB :: QTDW : _____.

Ans
✗ A. NQAT
✗ B. TWGZ
✗ C. NAWZ
✓ D. NWAZ

Question ID : **1034359024**
Status : **Answered**

Q.18 Select the correct mirror image of the given combination when the mirror is placed at line PQ as shown.

Ans
✓ A. SƆITSIGOJ
✗ B. SƆTISIGOJ
✗ C. ΓOGISΓICS
✗ D. ΓOGISΓICS

Question ID : **1034359047**
Status : **Answered**

Q.19 In a queue, Arpita is 19th from the front and Simran is 20th from the back. Shivani who is exactly in the middle of Arpita and Simran is 13th from the back. If Seema is 8th from the front, what is her position from the back of the queue?

Ans
✗ A. 19th

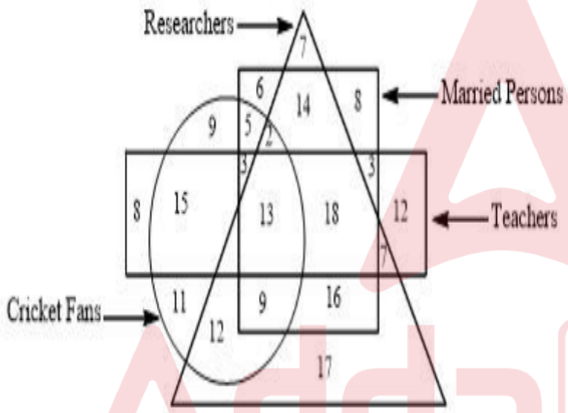
✓ B. 17th

✗ C. 18th

✗ D. 16th

Question ID : **1034359031**
Status : **Answered**

Q.20 In the following diagram, the shapes indicate different categories of persons and the numbers in different segments shows the number of persons.How many married researchers are either cricket fans or teachers but NOT both?



Ans
✓ A. 29

✗ B. 45

✗ C. 40

✗ D. 27

Question ID : **1034359040**
Status : **Answered**

Q.21 In a certain code language, 'LOCKET' is coded as '94'. How will 'EASTERN' be coded in that language?

Ans
✗ A. 103

✗ B. 109

✓ C. 104

✗ D. 107

Question ID : **1034359028**
Status : **Answered**

Q.22 Select the correct option that indicates the arrangement of the given words in the order in which they appear in an English dictionary.

1.Glamour
2.Golden
3.Glucose
4.Gesture
5.Goldsmith

Ans
✗ A. 4, 1, 3, 5, 2

✗ B. 4, 3, 1, 5, 2

✓ C. 4, 1, 3, 2, 5

✗ D. 4, 3, 1, 2, 5

Question ID : **1034359020**
Status : **Answered**

Q.23 Varun's house is 30 m to the left of the Supermarket, which is 40 m to the north of the Coffee Club. One day, Varun starts from his house and takes the road which is parallel to the Supermarket- Coffee club road and walks for 50 m before turning to his right. He further walks for 20 m and reaches the Ground. What is the difference between the straight distance between Varun's house to Coffee club and Supermarket to Ground?

Ans
✓ A. 20.7 m

✗ B. 50 m

✗ C. 37.7 m

✗ D. 70.7 m

Question ID : **1034359043**
Status : **Answered**

Q.24 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.
Statements:
All pens are erasers.
All erasers are sharpeners.
All sharpeners are markers.
Conclusions:
I.All erasers are markers.
II.All erasers are pens.
III.All markers are pens.
IV.All markers are erasers.

Ans
✗ A. Neither conclusion I nor II follows.

✓ B. Only conclusion I follows.

✗ C. Both conclusions II and IV follow.

✗ D. Only conclusion III follows.

Question ID : **1034359032**
Status : **Answered**

Q.25 Identify the letter-cluster that does NOT belong to the following series.
GSND, JQQB, MOTZ, PMWX, SKZU, VICT.

Ans
✗ A. VICT
✗ B. MOTZ
✗ C. PMWX
✓ D. SKZU

Question ID : **1034359019**
Status : **Answered**

Q.26 Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.
MILK, OFHO, QCDS, SZZW, ?

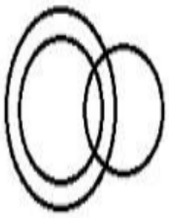
Ans
✓ A. UWVA
✗ B. QDWS
✗ C. UCDA
✗ D. QWDS

Question ID : **1034359018**
Status : **Answered**

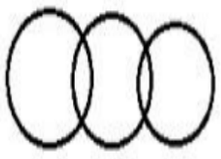
Q.27 Select the Venn diagram that best represents the relationship between the following classes.
Bowlers, Batsmen, Singers

Ans

✔ A. 

✘ B. 

✘ C. 

✘ D. 

Question ID : **1034359039**
Status : **Answered**

Q.28 Four number triads have been given, out of which three are alike in some manner and one is different. Select the one that is different.

Ans

✘ A. (8, 13, 22)

✘ B. (5, 7, 10)

✘ C. (4, 5, 6)

✔ D. (7, 11, 26)

Question ID : **1034359037**
Status : **Answered**

Q.29 Identify the number that does NOT belong to the following series.
17, 24, 32, 48, 91, 198, 403.

Ans
✗ A. 198

✗ B. 48

✓ C. 403

✗ D. 91

Question ID : **1034359036**
Status : **Answered**

Q.30 A statement is followed by three courses of action numbered I, II and III. Assuming everything in the statement to be true, decide which of the suggested courses of action (a decision to be taken for follow up /improvement in regard to the problem) logically follow for pursuing.
Statement:
A major drain in the city is getting dirty and polluted as the residents are dumping garbage into the drain over so many years.
Courses of Action:
I. The municipal authorities should employ security personnel to guard the drain so that people cannot dump any more garbage.
II. The authorities should clear the drain and make alternative arrangements for people to dump their garbage.
III.All those who are dumping garbage into the drain should be penalized.

Ans
✗ A. Only II follows.

✗ B. Both I and II follow.

✓ C. Both II and III follow.

✗ D. I, II and III follow.

Question ID : **1034359033**
Status : **Answered**

Section : **General Engineering**

Q.1 What will be the equation of 50 Hz voltage sine wave having the RMS value of 100V?

Ans
✗ A. 100 sin 50t

✗ B. 100 sin 314t

✗ C. 50 sin 100t

✓ D. 141.4 sin 314t

Question ID : **1034359062**
Status : **Answered**

Q.2 Calculate the resistance of the coil of an electric lamp rated at 200V, 2000 watt.

Ans
✓ A. 20 Ω

✗ B. 50 Ω

✗ C. 10 Ω

✗ D. 40 Ω

Question ID : **1034359058**
Status : **Answered**

Q.3 Which of the following is the type of soil deposit formed due to transportation of soil particles by wind?

Ans
✗ A. Colluvial soil

✗ B. Glacial soil

✗ C. Marine soil

✓ D. Aeolian soil

Question ID : **1034359051**
Status : **Answered**

Q.4 Which of the following methods of irrigation practice makes use of corrugations (channels of small cross-sections) having continuous and almost uniform slope in the direction of water flow?

Ans
✗ A. Sprinkler method
✗ B. Basin method
✓ C. Furrow method
✗ D. Wild flooding method

Question ID : **1034359053**
Status : **Answered**

Q.5 A Pelton wheel is required to develop a shaft power of 6 MW when working under a head of 400 m. Total discharge through the wheel is 2 m^3/s. What will be the overall efficiency of the Pelton wheel? [Density of water = 1000 kg/m^3, Acceleration due to gravity = 10 m/s^2]

Ans
✓ A. 75%
✗ B. 70%
✗ C. 80%
✗ D. 85%

Question ID : **1034359076**
Status : **Not Answered**
Chosen Option : **--**

Q.6 Three 1 ohm resistance are connected in delta form. What will be the resistance of each branch for equivalent star conversion?

Ans
✗ A. 3
✗ B. 1.5
✗ C. 1
✓ D. 1/3

Question ID : **1034359059**
Status : **Answered**

Q.7 Which of the following instruments is NOT used in chain surveying?

Ans
✔ A. Trough compass
✗ B. Ranging rod
✗ C. Plumb bob
✗ D. Arrow

Question ID : **1034359050**
Status : **Answered**

Q.8 A refrigeration plant works on an ideal vapour-compression refrigeration cycle with refrigerant as R-12 and develops a refrigeration capacity of 10 TR. If the refrigeration effect produced is 100 kJ/kg, what will be the mass flow rate of the refrigerant? [Assuming, 1 TR = 3.5 kW]

Ans
✔ A. 0.35 kg/s
✗ B. 0.247 kg/s
✗ C. 0.525 kg/s
✗ D. 0.7 kg/s

Question ID : **1034359072**
Status : **Not Answered**
Chosen Option : **--**

Q.9 Following data refers to the system operated on an ideal vapour-compression refrigeration cycle:

Refrigeration capacity of the system = 7 kW

Power input to the system = 3.5 kW

Which of the following is true?

Ans ✗ A.
The rate of heat rejection from the condenser of the system is 3.5 kW.

✗ B. The coefficient of performance of the system is 0.5.

✓ C.
The rate of heat rejection from the condenser of the system is 10.5 kW.

✗ D. The coefficient of performance of the system is 1.5.

Question ID : **1034359073**
Status : **Not Answered**
Chosen Option : **--**

Q.10 **As per IS 10500 : 2012 (drinking water specifications), the acceptable limit for total dissolved solids in water is _____.**

Ans ✓ A. 500 mg/l

✗ B. 750 mg/l

✗ C. 1000 mg/l

✗ D. 1500 mg/l

Question ID : **1034359055**
Status : **Answered**

Q.11 Calculate the energy stored in a coil if the coil carries a current of 10 A and the inductance of the coil is 80 mH.

Ans
✗ A. 8 J
✓ B. 4 J
✗ C. 2 J
✗ D. 12 J

Question ID : **1034359060**
Status : **Answered**

Q.12 What will be the specific enthalpy of the steam at 80°C and having a dryness fraction of 0.9? [Given: specific enthalpy of saturated liquid water at 80°C = 335 kJ/kg; specific enthalpy of vaporization of water at 80°C = 2300 kJ/kg]

Ans
✗ A. 2371.5 kJ/kg
✗ B. 2070 kJ/kg
✓ C. 2405 kJ/kg
✗ D. 2635 kJ/kg

Question ID : **1034359069**
Status : **Answered**

Q.13 Find out the correct relation.

Ans
✗ A. Mean spherical candle power = 1/(Mean Horizontal candle power * Reduction factor)
✗ B. Reduction factor = Mean Horizontal candle power * Mean spherical candle power
✗ C. Mean spherical candle power = Mean Horizontal candle power / Reduction factor
✓ D. Mean spherical candle power = Mean Horizontal candle power * Reduction factor

Question ID : **1034359066**
Status : **Answered**

Q.14 A mass of 5 kg steam at 400 kPa and 200°C is heated at constant pressure until the temperature reaches to 250°C. What will be the work done by the steam during this process?

[Given: Specific volume of steam at 400 kPa and 200°C = 0.55 m^3/kg; Specific volume of steam at 400 kPa and 250°C = 0.6 m^3/kg]

Ans

✗ A. 10 kJ

✗ B. 1 kJ

✓ C. 100 kJ

✗ D. 1000 kJ

Question ID : **1034359070**
Status : **Not Answered**
Chosen Option : **--**

Q.15 The coefficient of performance of Carnot refrigerator is given by: [T_L = Absolute temperature of low-temperature reservoir; T_H = Absolute temperature of high-temperature reservoir]

Ans

✓ A. $\frac{T_L}{T_H - T_L}$

✗ B. $\frac{T_L}{T_H + T_L}$

✗ C. $\frac{T_H}{T_H - T_L}$

✗ D. $\frac{T_H}{T_H + T_L}$

Question ID : **1034359071**
Status : **Answered**

Q.16 Consider the following statements with respect to the properties of fluids and select the correct answer.
Statement A: The viscosity of gases decreases with the increase of temperature.
Statement B: Gas possesses no definite volume and is compressible in nature.

Ans
✓ A. Statement B is correct and statement A is incorrect

✗ B. Both statements A and B are incorrect

✗ C. Both statements A and B are correct

✗ D. Statement A is correct and statement B is incorrect

Question ID : **1034359052**
Status : **Answered**

Q.17 Which of the following is true?

Ans
✗ A.
The percentage of carbon content in high carbon steel is always greater than 5%.

✓ B. The symbol used for 'Killed steel' is 'K'.

✗ C.
The percentage of carbon content in cast iron is less than the percentage of carbon content in mild steel.

✗ D.
The percentage of carbon content in cast iron is always less than 0.1%.

Question ID : **1034359077**
Status : **Answered**

Q.18 _____ can never have a load factor of 1p.u.

Ans
✗ A. Hydroelectric plant

✓ B. Peak load plant

✗ C. Nuclear power plant

✗ D. Base load plant

Question ID : **1034359065**
Status : **Answered**

Q.19 As per IRC, the minimum desirable width of medians shall be _____ in case of rural highways.

Ans
✓ A. 5.0 m

✗ B. 2.5 m

✗ C. 3.0 m

✗ D. 1 m

Question ID : **1034359054**
Status : **Answered**

Q.20 If current 'I' is flowing through the coil of a moving iron instrument, then the deflecting angle of the pointer is proportional to:

Ans
✗ A. $\sqrt{I}$

✓ B. I^2

✗ C. I^3

✗ D. I

Question ID : **1034359063**
Status : **Answered**

Q.21 The velocity of the steam at the nozzle exit (V) can be expressed as:

[Where: V_1 = Inlet velocity of the steam in the nozzle (m/s), h_1 = Specific enthalpy of steam at nozzle entrance (J/kg),

h_2 = Specific enthalpy of steam at nozzle exit (J/kg)]

Ans

✗ A. $V = V_1 + 2(h_1 - h_2)$

✗ B. $V = \sqrt{V_1 + 2(h_1 - h_2)}$

✗ C. $V = \sqrt{V_1^2 + 2000(h_1 - h_2)}$

✓ D. $V = \sqrt{V_1^2 + 2(h_1 - h_2)}$

Question ID : **1034359074**
Status : **Answered**

Q.22 Which of the following is NOT a grade of cement as per IS classification?

Ans

✓ A. Ordinary Portland cement (OPC) 23

✗ B. Ordinary Portland cement (OPC) 53

✗ C. Ordinary Portland cement (OPC) 33

✗ D. Ordinary Portland cement (OPC) 43

Question ID : **1034359056**
Status : **Answered**

Q.23 Identify the type of staircase that has two flights in it.

Ans

✗ A. Open well staircase

✗ B. One way staircase

✓ C. Dog legged staircase

✗ D. Helical staircase

Question ID : **1034359057**
Status : **Answered**

Q.24 Which of the following types of rocks exhibits greatest crushing strength when compared to the other mentioned type of rocks?

Ans
✗ A. Sandstone
✗ B. Laterite
✗ C. Shale
✓ D. Trap

Question ID : **1034359048**
Status : **Answered**

Q.25 Calculate the value of β of a transistor when the 'α' value is 0.75.

Ans
✗ A. 0.25
✗ B. 0.75
✓ C. 3
✗ D. 4

Question ID : **1034359067**
Status : **Answered**

Q.26 At resonance condition in any R-L-C series circuit, the power factor will be:

Ans
✗ A. 0
✓ B. unity
✗ C. 0.5 lagging
✗ D. 0.5 leading

Question ID : **1034359061**
Status : **Answered**

Q.27 Which of the following is the correct unit of measurement for an item of work 'cement mortar plastering'?

Ans
✗ A. Running metre
✗ B. Cubic metre
✓ C. Square metre
✗ D. Tonnes

Question ID : **1034359049**
Status : **Answered**

Q.28 Which of the following is correct?

Ans
✗ A. 1.0 Poise = 100.0 N-s/m^2
✓ B. Dimension of 'kinematic viscosity' is given by $L^2 T^{-1}$
✗ C. 1.0 stoke = 0.1 m^2/s
✗ D. Dimension of 'kinematic viscosity' is given by $L T^{-2}$

Question ID : **1034359075**
Status : **Answered**

Q.29 In order to achieve speed above the full load speed of a DC shunt motor, which of the following method is correct?

Ans
✗ A. Increasing the field current
✗ B. Decreasing the armature current
✓ C. Decreasing the field current
✗ D. Increasing the armature current

Question ID : **1034359064**
Status : **Answered**

Q.30 Which of the following is the correct relation? [G = Modulus of rigidity, K = Bulk modulus, E = Modulus of elasticity, ν = Poisson's ratio]

Ans

✗ A. $E = 3K(1+2\nu)$

✓ B. $E = 2G(1+\nu)$

✗ C. $E = 2G(1-2\nu)$

✗ D. $E = 9KG(3K+2G)$

Question ID : **1034359068**
Status : **Answered**

Section : **Domain Knowledge**

Q.1 **According to IS 4954-1968, the acceptable indoor noise level for a conference room is:**

Ans

✗ A. 25 to 30 dB

✗ B. 30 to35 dB

✓ C. 35 to 40 dB

✗ D. 45 to 50 dB

Question ID : **1034359151**
Status : **Answered**

Q.2 Select the correct option related to valuation from the following statements.
1. The value fixed by the purchaser is called market value.
2. The value fixed by the rate of depreciation is called book value.

Ans
✗ A. Statement 2 is true and 1 is false.

✗ B. Statement 1 is true and 2 is false.

✓ C. Both the statements are true.

✗ D. Both the statements are false.

Question ID : **1034359092**
Status : **Answered**

Q.3 Which of the following is a primary air pollutant?

Ans
✗ A. Formaldehyde

✗ B. Sulphuric acid

✓ C. Carbon monoxide

✗ D. Ozone

Question ID : **1034359152**
Status : **Answered**

Q.4 In order to classify the timber based on durability, test specimens of size 600 × 50 × 50 mm are buried in the ground to half their lengths, for a particular time period, and the condition of the specimen at various intervals of time are noted, and their average life is computed. In order to classify the timber as high durable, the average life shall be at least:

Ans
✓ A. 120 months and above

✗ B. greater than 30 months and less than 60 months

✗ C. less than 30 months

✗ D. less than 120 months but of 60 months or more

Question ID : **1034359081**
Status : **Not Answered**
Chosen Option : **--**

Q.5 Air entrainment in concrete increases its _____.

Ans ✓ A. workability

✗ B. segregation

✗ C. strength

✗ D. permeability

Question ID : **1034359176**
Status : **Answered**

Q.6 In modified proctor test, what is the mass and free drop of rammer used?

Ans ✗ A. 2.60 kg and 310 mm

✗ B. 3.85 kg and 350 mm

✓ C. 4.90 kg and 450 mm

✗ D. 4.25 kg and 425 mm

Question ID : **1034359116**
Status : **Answered**

Q.7 Select the INCORRECT objective of seasoning of timber.

Ans ✗ A. Reduce the shrinkage and warping after placement in structure

✗ B. Increase strength, durability and workability

✗ C. Reduce its tendency to split and decay

✓ D. Increase its weight

Question ID : **1034359082**
Status : **Answered**

Q.8 The sum of interior angles of a closed traverse is _____, where n is the number of sides of traverse.

Ans
✔ A. $(2n - 4) \times 90^{o}$
✗ B. $(n - 4) \times 90^{o}$
✗ C. $(n + 4) \times 90^{o}$
✗ D. $(2n + 4) \times 90^{o}$

Question ID : **1034359103**
Status : **Answered**

Q.9 What is the specific weight for a liquid having a volume of 8 m^3 and weight of 4 kN?

Ans
✔ A. 0.5 kN/m^3
✗ B. 1 kN/m^3
✗ C. 2.5 kN/m^3
✗ D. 2 kN/m^3

Question ID : **1034359118**
Status : **Answered**

Q.10 Select the correct statement from the following:
1. Mineral tar is obtained by the distillation of bituminous shales.
2. Wood tar is obtained by the destructive distillation of resinous wood.

Ans
✗ A. Both the statements are false.
✗ B. Statement 1 is true and 2 is false.
✗ C. Statement 1 is false and 2 is true.
✔ D. Both the statements are true.

Question ID : **1034359084**
Status : **Answered**

Q.11 What is the width of intermediate carriage way as per Indian Road Congress?

Ans
✗ A. 7.5 m

✗ B. 7.0 m

✗ C. 3.75 m

✓ D. 5.5 m

Question ID : **1034359138**
Status : **Answered**

Q.12 The following data were obtained from levelling for a point A which happens to be the benchmark:
The elevation of Benchmark. = 210.852 m
Back Sight = 2.324 m
Fore Sight= 1.836 m
What is the elevation of Point B?

Ans
✓ A. 211.340 m

✗ B. 208.528 m

✗ C. 212.688 m

✗ D. 213.176 m

Question ID : **1034359105**
Status : **Not Answered**
Chosen Option : **--**

Q.13 What is the name given by Le-Chatelier to one of the Bogue compounds 'Tricalcium silicate', which is formed during clinkering process?

Ans
✗ A. Celite

✓ B. Alite

✗ C. Belite

✗ D. Felite

Question ID : **1034359086**
Status : **Answered**

Q.14 Liquid limit of the soil is determined in laboratory using _____.

Ans
✗ A. slump test method

✗ B. hydrometer method

✗ C. unconfined compression test method

✓ D. cone penetration method

Question ID : **1034359110**
Status : **Answered**

Q.15 Match the following elastic constants with their definitions.

Elastic constants	Definitions
1. Young's modulus of elasticity	A. $\frac{\text{Shear stress}}{\text{Shear strain}}$
2. Modulus of rigidity	B. $\frac{\text{Volumetric stress}}{\text{Volumetric strain}}$
3. Bulk modulus	C. $\frac{\text{Lateral strain}}{\text{Longitudinal strain}}$
4. Poisson's ratio	D. $\frac{\text{Compressive stress}}{\text{Compressive strain}}$

Ans
✗ A. 1-D, 2-B, 3-A, 4-C

✗ B. 1-D, 2-C, 3-B, 4-A

✗ C. 1-B, 2-A, 3-D, 4-C

✓ D. 1-D, 2-A, 3-B, 4-C

Question ID : **1034359165**
Status : **Answered**

Q.16 In which of the following cross-drainage works is the HFL of the drain sufficiently below the bottom of the canal, so that the drainage water flows freely under gravity?

Ans
✗ A. Inlet outlets
✗ B. Level crossing
✗ C. Super passage
✓ D. Aqueduct

Question ID : **1034359137**
Status : **Answered**

Q.17 What is the chemical name for bleaching powder used in treating drinking water?

Ans
✗ A. Potassium aluminium sulphate
✗ B. Calcium carbonate
✗ C. Dichloramine
✓ D. Calcium hypochlorite

Question ID : **1034359154**
Status : **Answered**

Q.18 Skimming tanks in waste water treatment is to:

Ans
✗ A. remove odour and colour of the waste water
✗ B. separate very fine sand particles in the waste water
✗ C. remove turbidity present in the waste water
✓ D. remove oil and grease present in the waste water

Question ID : **1034359155**
Status : **Answered**

Q.19 A clayey soil has saturated moisture content of 20% and specific gravity of 2.5. If its saturation percentage is 70%, then the void ratio is:

Ans
✗ A. 0.76
✗ B. 0.68
✗ C. 0.82
✓ D. 0.71

Question ID : **1034359112**
Status : **Answered**

Q.20 Workability of concrete is measured using:

Ans
✗ A. Vicat apparatus
✗ B. Vane shear apparatus
✓ C. Slump cone apparatus
✗ D. Blane's air permeability apparatus

Question ID : **1034359170**
Status : **Answered**

Q.21 According to IS: 4111 (Part 1) - 1986, for sewers that are to be cleaned manually and which cannot be entered for cleaning or inspection, the maximum distance between manholes should be:

Ans
✗ A. 40 m
✓ B. 30 m.
✗ C. 50 m
✗ D. 20 m

Question ID : **1034359149**
Status : **Answered**

Q.22 If the departure and latitude of a line are +78.0 m and –135.1 m, respectively, the whole circle bearing of the line is:

Ans
✗ A. 60°

✗ B. 30°

✓ C. 150°

✗ D. 120°

Question ID : **1034359100**
Status : **Not Answered**
Chosen Option : **--**

Q.23 The failure plane behind a vertical wall in the passive pressure case is inclined to the horizontal at _____,
where φ is the angle of shearing resistance.

Ans
✓ A. $45^\circ - \frac{\phi}{2}$

✗ B. $45^\circ + \frac{\phi}{2}$

✗ C. $45^\circ - \phi$

✗ D. $45^\circ + \phi$

Question ID : **1034359117**
Status : **Answered**

Q.24 Which of the following is correct regarding autogenous healing of concrete?

Ans
✗ A. It is an artificial process of crack repair occurring applying water.

✗ B. It cannot take place in continuous saturation.

✓ C. It is a natural process of crack repair occurring in the presence of moisture.

✗ D. It is particularly effective in cycles of drying and re-immersion.

Question ID : **1034359177**
Status : **Answered**

Q.25 _____ is an example of the practical application of Bernoulli's theorem

Ans
✗ A. Viscosity meter

✓ B. Pitot tube

✗ C. Manometer

✗ D. Impact of jet on vanes

Question ID : **1034359124**
Status : **Answered**

Q.26 The flakiness index test is NOT applicable to the aggregate sizes smaller than _____.

Ans
✗ A. 10 mm

✗ B. 7.7 mm

✗ C. 5.5 mm

✓ D. 6.3 mm

Question ID : **1034359168**
Status : **Answered**

Q.27 Which of the following rain gauges do NOT provide the intensity of rainfall?

Ans ✔ A. Symon's rain gauge

✗ B. Weighing bucket rain gauge

✗ C. Tipping bucket rain gauge

✗ D. Float type rain gauge

Question ID : **1034359131**
Status : **Answered**

Q.28 In California Bearing Ratio (CBR) test, a standard piston, having an area of _____ diameter, is used to penetrate the soil at a standard rate of _____.

Ans ✗ A. 40 mm; 1.0 mm/minute

✗ B. 30 mm; 1.75 mm/minute

✗ C. 60 mm; 1.5 mm/minute

✔ D. 50 mm; 1.25 mm/minute

Question ID : **1034359143**
Status : **Answered**

Q.29 Which of the following is a characteristic of rapid sand filters in drinking water treatment?

Ans ✔ A. Backwashing by water and compressed air for cleaning

✗ B. The effective size of fine sand of 0.2 to 0.35 mm with uniformity coefficient of 2 to 2.75

✗ C. Requiring large area

✗ D. Highly efficient in removing bacteria

Question ID : **1034359157**
Status : **Answered**

Q.30 Select the correct option related to valuation from the following statements.
1. The physical loss in the value of the property due to wear, tear, decay, etc., is called depreciation.
2. The loss in the value of the property due to change in design, fashion, structure, utility or demand is called obsolescence.

Ans
✗ A. Both the statements are false.
✓ B. Both the statements are true.
✗ C. Statement 1 is true and 2 is false.
✗ D. Statement 2 is true and 1 is false.

Question ID : **1034359093**
Status : **Answered**

Q.31 In air pollution, looping plume refers to:

Ans
✗ A. when there exists a strong super adiabatic lapse rate above a surface inversion
✗ B. a plume occurring under sub-adiabatic conditions which produces slightly stable environment
✗ C. when an inversion layer occurs at a short distance above the top of the stack, and super adiabatic conditions prevail below the stack
✓ D. a plume having a wavy character and occurring in super-adiabatic environment which produces highly unstable environment

Question ID : **1034359156**
Status : **Answered**

Q.32 The upper plate of the levelling screws in the Dumpy level is called the _____.

Ans
✓ A. tribrach
✗ B. trivet
✗ C. tripod
✗ D. levelling head

Question ID : **1034359099**
Status : **Answered**

Q.33 Select the correct option from the following statements.
Statement 1. Concretes cured at higher temperatures initially leads to lower early strengths.
Statement 2. Curing is a process that facilitates (eases) hydration.

Ans
✔ A. Statement 1 is false and statement 2 is true

✗ B. Statement 1 is true and statement 2 is false

✗ C. Both statements are false

✗ D. Both statements are true

Question ID : **1034359174**
Status : **Answered**

Q.34 For the purpose of measuring the stopping sight distance or visibility ahead, IRC has suggested the height of eye level of driver as _____ and the height of the object as _____ above the road surface.

Ans
✗ A. 1.5 m; 0.25 m

✗ B. 1.7 m; 0.35 m

✔ C. 1.2 m; 0.15 m

✗ D. 1.0 m; 0.5 m

Question ID : **1034359142**
Status : **Answered**

Q.35 What is the expression for crippling load P when one end of the column is fixed and the other end is free?
E - Young's modulus of elasticity, I - moment of inertia, l - length of the column.

Ans

✗ A. $\frac{\pi^2 EI}{8l^2}$

✓ B. $\frac{\pi^2 EI}{4l^2}$

✗ C. $\frac{2\pi^2 EI}{l^2}$

✗ D. $\frac{\pi^2 EI}{l^2}$

Question ID : **1034359163**
Status : **Answered**

Q.36 In a soil sample, the ratio of the volume of water to the volume of voids is known as:

Ans

✗ A. percentage of air voids

✓ B. degree of saturation

✗ C. degree of compaction

✗ D. degree of consolidation

Question ID : **1034359109**
Status : **Answered**

Q.37 The quantity of cement required for one cubic metre of concrete mix (1 : 2 : 4) is:

Ans
✗ A. 0.15 m^3
✗ B. 0.19 m^3
✗ C. 0.25 m^3
✓ D. 0.22 m^3

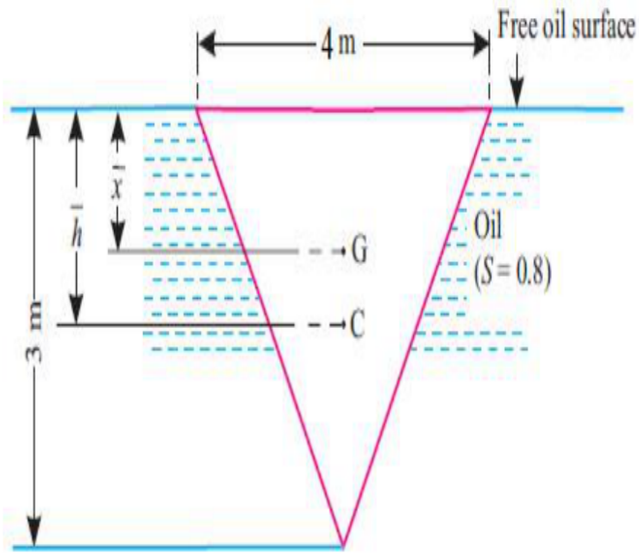
Question ID : **1034359096**
Status : **Answered**

Q.38 Which of the following is NOT a method used for assessing rateable value of the property?

Ans
✗ A. Capital value method
✗ B. Rental method
✓ C. Depreciation method
✗ D. Comparison method

Question ID : **1034359097**
Status : **Answered**

Q.39 An isosceles triangular plate of base 4 m and altitude 3 m is immersed vertically in an oil of specific gravity 0.8 as shown in the following figure. What is the total pressure on the plate? Take acceleration due to gravity g = 10 m/s^2.



Ans
✔ A. 48 kN

✗ B. 68 kN

✗ C. 96 kN

✗ D. 35 kN

Question ID : **1034359125**

Status : **Not Answered**

Chosen Option : **--**

Q.40 Which of the following is defined as the volume occupied in millilitre by 1 gram of solids in the mixed liquor after settling for 30 minutes?

Ans
✗ A. Sludge recycle

✔ B. Sludge volume index

✗ C. Rate of return sludge

✗ D. Volumetric BOD loading

Question ID : **1034359153**

Status : **Answered**

Q.41 A 50 mm x 8 mm steel tie bar is to carry a load of 80 kN. A specimen of the same quality steel of cross-sectional area 250 mm^2 was tested in the laboratory. The maximum load carried by the specimen was 125 kN. What is the factor of safety?

Ans
✗ A. 1.5
✓ B. 2.5
✗ C. 0.4
✗ D. 2.0

Question ID : **1034359182**
Status : **Not Answered**
Chosen Option : **--**

Q.42 In the design of alluvial canal, if the mean particle size of silt (in mm units) is m_r, then the silt factor f calculated by Lacy's equation is:

Ans
✗ A. $0.76\sqrt{m_r}$
✗ B. $2.76\sqrt{m_r}$
✗ C. $1.76\sqrt{m_r^2}$
✓ D. $1.76\sqrt{m_r}$

Question ID : **1034359134**
Status : **Not Answered**
Chosen Option : **--**

Q.43 Which of the following is a type of clay with a very high percentage of clay mineral montmorillonite?

Ans
✗ A. Humus
✗ B. Laterite
✗ C. Kankar
✓ D. Bentonite

Question ID : **1034359108**
Status : **Answered**

Q.44 Which of the following statements is valid for the general specification of first class building?

Ans
✓ A. Damp Proof Course shall be of 2.5 cm thick cement concrete with 5% pudlo by weight of cement or any other specified water proof material.
✗ B. Damp Proof course of 2 cm thick shall be of Portland cement concrete (1 : 2 : 4) with one coat of bitumen laid hot.
✗ C. Interior and exterior surface of the walls shall be cement plastered lime or cement mortar; inside shall be three coats of white wash and outside with one coat of white wash.
✗ D. Interior surface of the walls shall be mud plastered and covered with three coats of white wash, and exterior surface shall be flush lime pointed.

Question ID : **1034359095**
Status : **Not Answered**
Chosen Option : **--**

Q.45 According to IS 456-2000, the permissible limit of chlorides present in water used for making concrete without embedded steel is:

Ans
✗ A. 1000 mg/l
✗ B. 500 mg/l
✗ C. 200 mg/l
✓ D. 2000 mg/l

Question ID : **1034359169**
Status : **Answered**

Q.46 The minimum grade of concrete used for moderate exposure condition of plain cement concrete as per IS 456-2000 is:

Ans
✓ A. M15

✗ B. M30

✗ C. M25

✗ D. M20

Question ID : **1034359184**
Status : **Answered**

Q.47 As per Is 456:2000, reinforced cement concrete compression member shall be considered as a short column when slenderness ratios are less than or equal to:

Ans
✗ A. 16

✗ B. 10

✗ C. 8

✓ D. 12

Question ID : **1034359187**
Status : **Answered**

Q.48 Identify the statically indeterminate beam from the following.

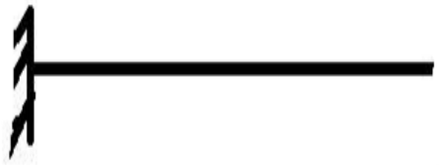
Ans

✗ A.

✗ B.

✓ C.

✗ D.



Question ID : **1034359159**

Status : **Answered**

Q.49 Which of the following is NOT a function of admixture used in concrete?

Ans ✗ A. To increase the durability of concrete

✗ B. To increase the strength of the concrete by reducing water content

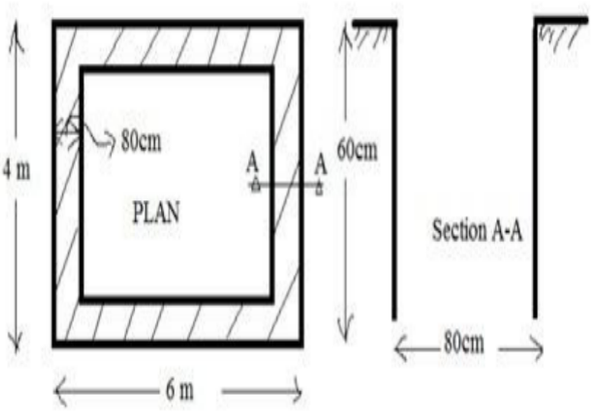
✓ C. To increase the heat of hydration

✗ D. To enhance the workability

Question ID : **1034359172**

Status : **Answered**

Q.50 The following plan and section represents a trench that is 80 cm wide and 60 cm deep.
The required volume of the earthwork for the trench using centre line method is:



Ans
✗ A. 10.5 m^3

✓ B. 8.064 m^3

✗ C. 9.68 m^3

✗ D. 6.54 m^3

Question ID : **1034359094**
Status : **Not Answered**
Chosen Option : **--**

Q.51 Pascal's law states that:

Ans
✗ A. the weight of the body is equal to the volume of fluid displaced

✗ B. the total pressure in a fluid at a given point is constant

✗ C. the total energy at a given point in the fluid is constant

✓ D. the pressure intensity at any point in a liquid at rest is the same in all directions

Question ID : **1034359119**
Status : **Answered**

Q.52 Which of the following assumptions is NOT applicable in Rankine's theory of earth pressure?

Ans ✗ A. The frictional resistance between the retaining wall and the retained material is neglected.

✗ B. The failure of the retained material takes place along a plane known as rupture plane.

✓ C. The earth or soil retained by a retaining wall is cohesive.

✗ D. The earth or soil retained by a retaining wall is cohesionless.

Question ID : **1034359164**
Status : **Answered**

Q.53 Contour lines of different elevations can intersect only in the case of:

Ans ✗ A. steep slope

✗ B. valley

✗ C. ridge

✓ D. overhanging cliff

Question ID : **1034359102**
Status : **Answered**

Q.54 The canal lining is known as _____ when the cement mortar is applied on sub-grade by cement gun.

Ans ✗ A. bentonite lining

✗ B. boulder lining

✗ C. asphalt lining

✓ D. shotcrete lining

Question ID : **1034359133**
Status : **Answered**

Q.55 Match the following constituents of paint with example.

Constituents of paint	Example
1. Base	A. Linseed oil
2. Vehicle	B.Lithophone
3. Pigment	C. White lead
4. Drier	D. Litharge

Ans
✗ A. 1-D; 2-A; 3-B; 4-C

✗ B. 1-C; 2-D; 3-B; 4-A

✗ C. 1-B; 2-A; 3-C; 4-D

✓ D. 1-C; 2-A; 3-B; 4-D

Question ID : **1034359087**
Status : **Answered**

Q.56 Select the correct option related to centrifugal pumps from the following statements.
1. If a high head is to be developed, the impellers are connected in series.
.2. For discharging large quantity of fluid, the impellers are to be connected in parallel.

Ans
✗ A. Both the statements are false.

✓ B. Both the statements are true.

✗ C. Statement 2 is true and 1 is false.

✗ D. Statement 1 is true and 2 is false.

Question ID : **1034359123**
Status : **Answered**

Q.57 Which of the following IS codes provides general guidelines for steel construction and design?

Ans
✗ A. IS 10500-2012
✗ B. IS 456-2000
✓ C. IS 800-2007
✗ D. IS 1077-1992

Question ID : **1034359178**
Status : **Answered**

Q.58 Vane shear test is used to determine the _____.

Ans
✗ A. earth pressure in the field
✗ B. bearing strength of soils in the laboratory
✓ C. shear strength of soft clayey soils in the field
✗ D. compressive strength of soil in the field

Question ID : **1034359114**
Status : **Answered**

Q.59 The gross command area of an irrigation project is 1 lakh hectares. The culturable command area is 80% of the gross command area. The intensity of irrigation for Kharif is 60%. If the duties for Kharif is 1200 hectares/cumec, then what is the required discharge for Kharif?

Ans
✓ A. 40 cumec
✗ B. 46 cumec
✗ C. 35 cumec
✗ D. 56 cumec

Question ID : **1034359135**
Status : **Answered**

Q.60 The following data are obtained from particle size distribution curve: D_{10} = 0.2 mm, D_{30} = 0.5 mm, D_{60} = 1.5 mm. The coefficient of curvature is:

Ans
✗ A. 2.5

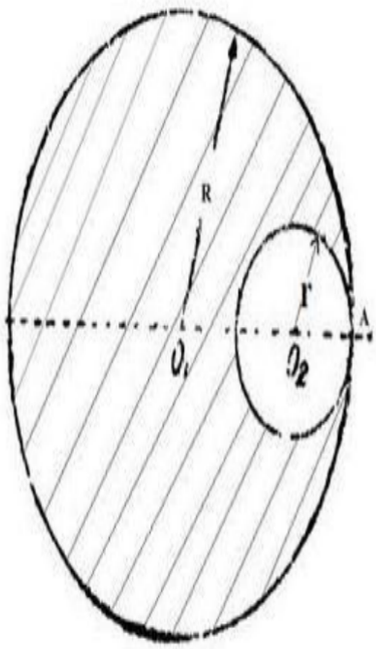
✗ B. 7.5

✗ C. 3.0

✓ D. 0.83

Question ID : **1034359115**
Status : **Answered**

Q.61 In a circular sheet of metal of radius R, a hole of radius r is made as shown in the given figure. What is the centroid of the remaining shaded area of sheet from A?



Ans

✗ A. $\frac{R-r}{R^2-r^2}$

✗ B. $\frac{R^3-r^3}{R-r}$

✓ C. $\frac{R^3-r^3}{R^2-r^2}$

✗ D. $\frac{2R^3-2r^3}{R^2-r^2}$

Question ID : **1034359166**

Status : **Answered**

Q.62 The deflection of a cantilever beam of length L carrying a point load at the free end is _____,where E is the Young's modulus of elasticity and I is the moment of inertia.

Ans

✗ A. $\frac{WL^3}{8EI}$ downward

✓ B. $\frac{WL^3}{3EI}$ downward

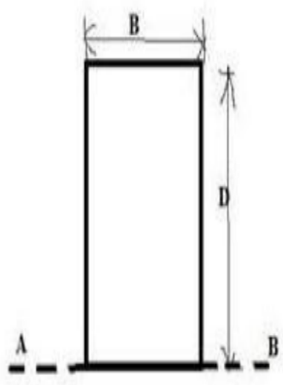
✗ C. $\frac{WL^3}{6EI}$ downward

✗ D. $\frac{WL^4}{8EI}$ downward

Question ID : **1034359161**

Status : **Answered**

Q.63 The moment of inertia of a rectangle of width B and depth D about an axis AB shown in the figure is given by:



Ans

✔ A. $I_{AB} = \frac{BD^3}{3}$

✗ B. $I_{AB} = \frac{BD^3}{12}$

✗ C. $I_{AB} = \frac{DB^3}{12}$

✗ D. $I_{AB} = \frac{DB^3}{3}$

Question ID : **1034359183**

Status : **Answered**

Q.64 Identify the stone quarrying tool shown in the given figure.

Ans
✗ A. Priming needle

✗ B. Dipper

✗ C. Jumper

✓ D. Tamping bar

Question ID : **1034359079**
Status : **Answered**

Q.65 When the rocks are classified on the basis of physical characteristics, the type of rocks that has a tendency to split up in a definite direction only is known as:

Ans
✗ A. igneous rocks

✗ B. siliceous rocks

✓ C. foliated rocks

✗ D. calcareous rocks

Question ID : **1034359078**
Status : **Answered**

Q.66 Two plates of thickness 16 mm and 10 mm are to be joined by double V butt weld. The joint is subject to a tensile force of 280 kN. Due to some reasons, the effective length of weld that could be provided was 170 mm. Given that allowable stress in butt weld in tension is 150 N/mm^2, what is the strength of weld?

Ans
✗ A. 167 kN

✓ B. 255 kN

✗ C. 408 kN

✗ D. 332 kN

Question ID : **1034359181**
Status : **Not Answered**
Chosen Option : **--**

Q.67 Which of the following corrections is always negative in surveying while measuring distance?

Ans
✗ A. Absolute length

✗ B. Temperature

✓ C. Sag

✗ D. Pull

Question ID : **1034359098**
Status : **Answered**

Q.68 In Tacheometer, when the line of sight is inclined and the staff is held vertically, the horizontal distance is given by _____, where f - focal length of object glass; d - distance between optical centre and vertical axis of instrument; S - staff intercept; I - length of image; Θ - angle of elevation.

Ans
✗ A. $\frac{f}{i}Stan^2\theta + (f+d)tan\theta$

✗ B. $\frac{f}{i}Scot^2\theta + (f+d)cot\theta$

✓ C. $\frac{f}{i}Scos^2\theta + (f+d)cos\theta$

✗ D. $\frac{f}{i}Ssin^2\theta + (f+d)sin\theta$

Question ID : **1034359107**
Status : **Not Answered**
Chosen Option : **--**

Q.69 Underburnt bricks are classified as:

Ans
✔ A. third class bricks

✗ B. second class bricks

✗ C. first class bricks

✗ D. fourth class brick

Question ID : **1034359080**
Status : **Answered**

Q.70 The effective length of steel column of length L effectively held in position at both ends and restrained against rotation at one end is:

Ans
✗ A. 1.0L

✗ B. 0.65L

✗ C. 1.5L

✔ D. 0.80L

Question ID : **1034359180**
Status : **Answered**

Q.71 _____ are provided near public conveniences with guide maps to enable the driver to stop clear off the carriageway

Ans
✗ A. Parking lanes

✗ B. Drive ways

✔ C. Lay byes

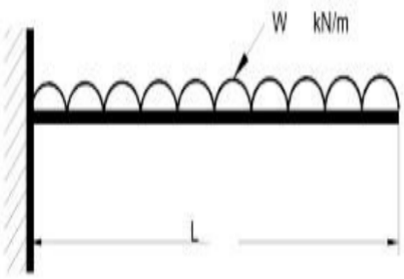
✗ D. Bus bay

Question ID : **1034359139**
Status : **Answered**

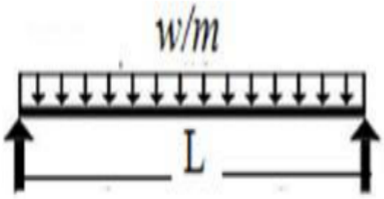
Q.72 Point of contra flexure exists for which of the following types of beams?

Ans

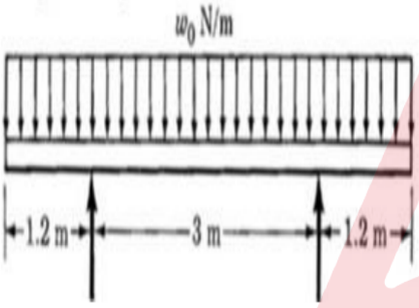
✗ A.



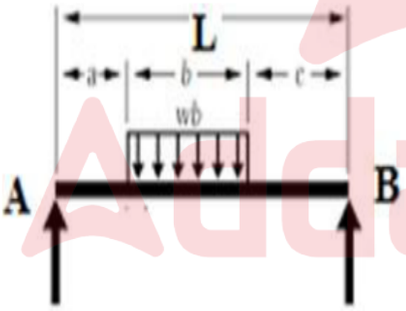
✗ B.



✓ C.



✗ D.



Question ID : **1034359158**

Status : **Answered**

Q.73 According to IS 10500-2012, the maximum permissible limit of chlorides in drinking water in the absence of alternate source is:

Ans
✗ A. 250 mg/l

✗ B. 2000 mg/l

✗ C. 500 mg/l

✓ D. 1000 mg/l

Question ID : **1034359148**
Status : **Answered**

Q.74 From the following wastes, select the type of garbage included in municipal solid waste.

Ans
✗ A. Glass

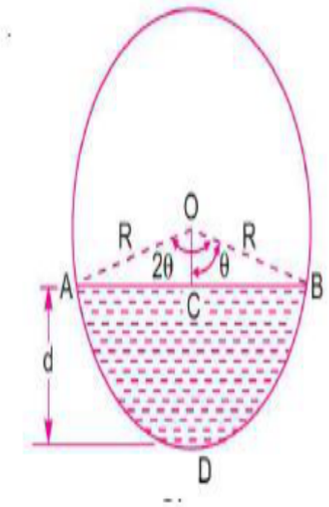
✓ B. Fruit peelings

✗ C. Ashes

✗ D. Rags

Question ID : **1034359150**
Status : **Answered**

Q.75 Determine the hydraulic radius (m) for a circular pipe for the flow situation shown in the following figure, if d is the depth of fluid flow, D is the diameter of the pipe, and R is the radius of the pipe.



Ans

✔ A. $m = \frac{R}{2\theta}\left\{\theta - \frac{\sin 2\theta}{2}\right\}$

✗ B. $m = \frac{R}{2\theta}\left\{\theta + \frac{\sin\theta}{2}\right\}$

✗ C. $m = \frac{R}{2\theta}\left\{\theta - \frac{\sin\theta}{2}\right\}$

✗ D. $m = \frac{R}{2\theta}\left\{\theta + \frac{\sin 2\theta}{2}\right\}$

Question ID : **1034359126**

Status : **Answered**

Q.76 Farakka Barrage project is one of the major irrigation projects in India which is constructed across the _____ river and the state of _____.

Ans
✗ A. Mahanadi and Odisha

✗ B. Gandak and Bihar

✗ C. Sutlej and Himachal Pradesh

✓ D. Ganges and West Bengal

Question ID : **1034359129**
Status : **Answered**

Q.77 If a canal was designed for the maximum discharge of 60 cumec, but the average discharge is 50 cumec, then the capacity factor of the canal is:

Ans
✗ A. 0.64

✓ B. 0.83

✗ C. 1.20

✗ D. 0.58

Question ID : **1034359130**
Status : **Not Answered**
Chosen Option : **--**

Q.78 When the sanctioned estimate exceeds by 5% either due to the rates being found insufficient or due to some other reasons, a fresh estimate is prepared which is called:

Ans
✓ A. revised estimate

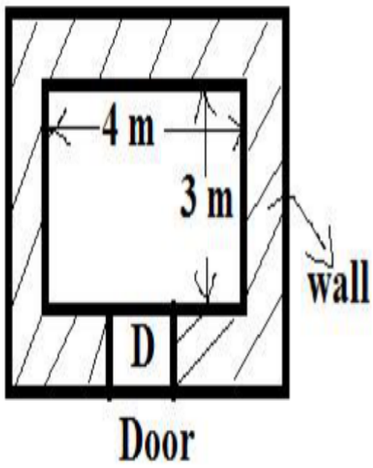
✗ B. detailed estimate

✗ C. plinth area estimate

✗ D. supplementary estimate

Question ID : **1034359088**
Status : **Answered**

Q.79 A room of width 3 m and length 4 m and a door of width 1.5 m is shown below. The thickness of the wall is 250 mm. The quantity of damp proof course required for a thickness of 25 mm is:



Ans
✔ A. 3.375 m^2

✗ B. 0.34 m^2

✗ C. 12 m^2

✗ D. 6 m^2

Question ID : **1034359089**

Status : **Not Answered**

Chosen Option : **--**

Q.80 Hydraulic efficiency of a turbine is defined as:

Ans

✗ A. $\dfrac{\text{power at the shaft of the turbine}}{\text{the power delivered by water to the runner}}$

✗ B. $\dfrac{\text{volume avaible at the shaft of the turbine}}{\text{Power supplied at the inlet of the turbine}}$

✓ C. $\dfrac{\text{Power given by water to the runner of the turbine}}{\text{Power supplied by water at the inlet to the turbine}}$

✗ D. $\dfrac{\text{volume of water actually striking the runner}}{\text{volume of water supplied to the turbine}}$

Question ID : **1034359121**
Status : **Answered**

Q.81 The hydraulic radius (m) for a circular pipe of diameter (D) is given by:

Ans

✗ A. $m = \dfrac{D}{3}$

✗ B. $m = D$

✓ C. $m = \dfrac{D}{4}$

✗ D. $m = \dfrac{D}{2}$

Question ID : **1034359120**
Status : **Answered**

Q.82 A solid shaft of 160-mm diameter is used to transmit torque. What is the maximum torque transmitted by the shaft if the maximum shear stress induced to the shaft is 50 N/mm^2?

Ans
✗ A. 11.2π kN-m

✗ B. 13.9π kN-m

✗ C. 10.4π kN-m

✓ D. 12.8π kN-m

Question ID : **1034359162**
Status : **Not Answered**
Chosen Option : **--**

Q.83 What is the minimum width of lacing bars for bolted or riveted connection recommended by IS 800-2007?

Ans
✗ A. Two times the nominal diameter of the end bolt or rivet.

✓ B. Three times the nominal diameter of the end bolt or rivet.

✗ C. Equal to the nominal diameter of the end bolt or rivet.

✗ D. Four times the nominal diameter of the end bolt or rivet.

Question ID : **1034359179**
Status : **Answered**

Q.84 The most widely used transition curve for small deviation angles for simplicity in setting out is:

Ans
✗ A. cubic spiral

✗ B. hyperbola

✗ C. lemniscate curve

✓ D. cubic parabola

Question ID : **1034359101**
Status : **Answered**

Q.85 The value of the property recorded in the register of the municipality or any government agency in order to determine the taxes to be collected from the owner of the property is called:

Ans ✓ A. assessed value

✗ B. market value

✗ C. capitalized value

✗ D. book value

Question ID : **1034359091**
Status : **Answered**

Q.86 Water-cement ratio in concrete is the ratio of:

Ans ✗ A. the weight of water to the volume of cement

✗ B. the volume of water to the volume of cement

✗ C. the volume of water to the weight of cement

✓ D. the weight of water to the weight of cement

Question ID : **1034359175**
Status : **Answered**

Q.87 If a broad gauge track is laid with wooden sleepers with a sleeper density of N + 6, then the sleeper spacing will be 68.4 cm. If the width of the sleeper is 25.4 cm, then the depth of the ballast cushion will be:

Ans ✓ A. 21.5 cm

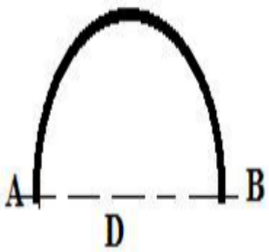
✗ B. 29.5 cm

✗ C. 47.0 cm

✗ D. 36.5 cm

Question ID : **1034359141**
Status : **Not Answered**
Chosen Option : **--**

Q.88 Moment of inertia of a semicircle of diameter D about an axis AB is given by:



Ans

✗ A. $I_{AB} = \frac{\pi D^4}{256}$

✗ B. $I_{AB} = \frac{\pi D^4}{4}$

✗ C. $I_{AB} = \frac{\pi D^4}{64}$

✓ D. $I_{AB} = \frac{\pi D^4}{128}$

Question ID : **1034359160**
Status : **Answered**

Q.89 How many sleepers are required for a 1 kilometre rail with a sleeper density of M + 7 on a broad gauge route? Take the standard length of broad gauge rail = 13 m.

Ans

✗ A. 1525

✗ B. 1425

✓ C. 1540

✗ D. 1583

Question ID : **1034359144**
Status : **Answered**

Q.90 Select the INCORRECT comparison between weir and barrage in irrigation engineering from the following.

Ans ✓ A. In a weir ponding of water is mainly done by gates, while in a barrage ponding is done by a masonry or concrete overflow dam.

✗ B. Barrages offer better control on the river outflow as well as the discharge in the off taking canal than a weir.

✗ C. The weir crest is a masonry or concrete structure while in a barrage the crest is made of concrete.

✗ D. A weir is an ungated structure while a barrage has vertical lift gates.

Question ID : **1034359132**
Status : **Answered**

Q.91 The following statements are related to one way and two way RCC slabs. Select the correct option.
Statement 1: In a one-way system, the constituents of the load path are visualised as parallel rows of skeletal members with the capability to transfer the loading perpendicular to their length only.
Statement 2: In a two-way system, the floor may be considered as consisting of intersecting members which allows the applied loads to be resisted by one member.

Ans ✗ A. Both statements are correct

✗ B. Both statements are false

✓ C. Statement 1 falls and statement 2 is correct

✗ D. Statement 1 correct and statement 2 is false

Question ID : **1034359186**
Status : **Answered**

Q.92 The development length L_d is given by _____, where ϕ = nominal diameter of the bar, σ_s = stress in the bar at the section considered at design load, and τ_{bd} = design bond stress.

Ans

✔ A. $\frac{\Phi\sigma_s}{4\tau_{bd}}$

✗ B. $\frac{\Phi\sigma_s}{\tau_{bd}}$

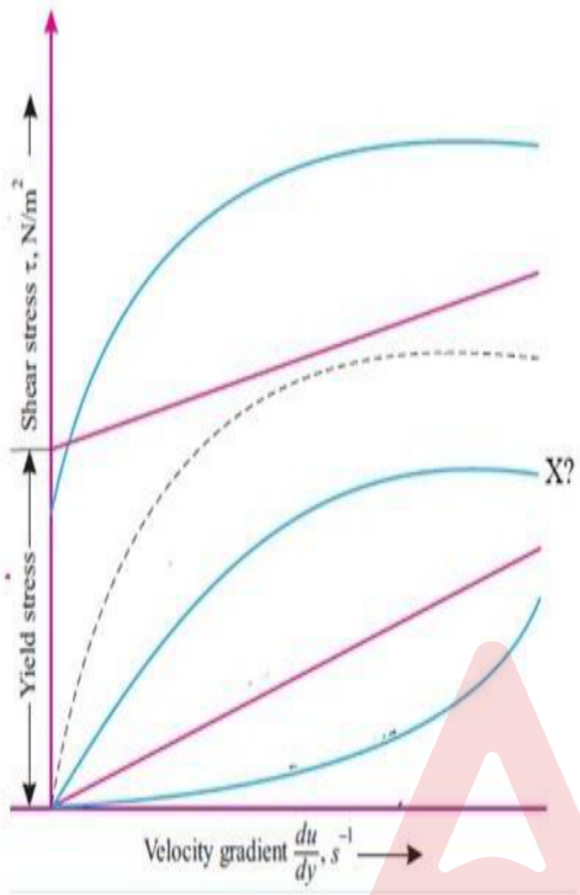
✗ C. $\frac{4\Phi\sigma_s}{\tau_{bd}}$

✗ D. $\frac{\sigma_s}{4\Phi\tau_{bd}}$

Question ID : **1034359185**

Status : **Answered**

Q.93 Identify the type of fluid indicated by X from the given figure.



Ans
- ✗ A. Thixotropic fluid
- ✗ B. Ideal plastic fluid
- ✓ C. Pseudo Plastic fluid
- ✗ D. Newtonian fluid

Question ID : **1034359122**
Status : **Answered**

Q.94 Select the disadvantage of plane table surveying?

Ans
✗ A. It is most suitable for small scale maps.
✗ B. The surveyor can compare plotted work with the actual features of the area.
✗ C. It is useful in magnetic area.
✓ D. It is essentially a tropical instrument.

Question ID : **1034359106**
Status : **Answered**

Q.95 The type of timber defect in the form of longitudinal crack which is usually normal to the annual rings is called:

Ans
✗ A. rindgalls
✓ B. checks
✗ C. upsets
✗ D. knots

Question ID : **1034359085**
Status : **Answered**

Q.96 All of the following are the steps to reduce slump loss of concrete, EXCEPT:

Ans
✗ A. initial high slump
✗ B. keeping temperature low
✓ C. adding water repeatedly
✗ D. using retarders

Question ID : **1034359173**
Status : **Answered**

Q.97 Which of the following methods is NOT used for calculating quantities of materials in building estimation?

Ans
✗ A. Centre line method
✗ B. Long and short wall method
✓ C. Straight line method
✗ D. Crossing method

Question ID : **1034359090**
Status : **Answered**

Q.98 Fineness of Portland cement is tested by which method?

Ans
✓ A. Blaine's air permeability
✗ B. Le Chatelier apparatus
✗ C. Autoclave method
✗ D. Vicat apparatus

Question ID : **1034359083**
Status : **Answered**

Q.99 Match the following speeds with their definitions.

Speed	Definition
1. Spot speed	A. The average speed maintained by a vehicle over a particular stretch of a road
2. Running speed	B. The effective speed with which a vehicle traverses a particular route between two terminals
3. Overall speed	C. The average speed of a vehicle in a certain road length at any time
4. Space-mean speed	D. The instantaneous speed of a vehicle at a specified location or section

Ans
✓ A. 1-D, 2-A, 3-B ,4-C

✗ B. 1-D, 2-C ,3-B, 4-A

✗ C. 1-B, 2-A, 3-C, 4-D

✗ D. 1-C, 2-A, 3-B, 4-D

Question ID : **1034359145**

Status : **Answered**

Q.100 Determine the direct stress at the base of the hollow circular chimney of height 20 m with external diameter 4 m and internal diameter 2 m. The chimney is subjected to a horizontal wind pressure of intensity 1 kN/m^2, and specific weight of the material of chimney is 20 kN/m^3.

Ans
✔ A. 400 kN/m^2
✘ B. 250 kN/m^2
✘ C. 300 kN/m^2
✘ D. 350 kN/m^2

Question ID : **1034359167**
Status : **Answered**

Q.101 What is the relationship of error in measurement of head H with discharge Q for a rectangular weir?

Ans
✔ A. $\frac{dQ}{Q} = \frac{3dH}{2H}$
✘ B. $\frac{5dQ}{2Q} = \frac{dH}{H}$
✘ C. $\frac{dQ}{Q} = \frac{5dH}{2H}$
✘ D. $\frac{dQ}{Q} = \frac{dH}{H}$

Question ID : **1034359127**
Status : **Answered**

Q.102 Which of the following is NOT an empirical method for determining the coefficient of permeability of soil?

Ans
✗ A. Allen Hazen's formula

✓ B. Cooper Jacob's formula

✗ C. Louden's formula

✗ D. Jacky's formula

Question ID : **1034359113**
Status : **Answered**

Q.103 What is the requirement of maximum Los Angeles abrasion value for sub-base course of water bound macadam (WBM) road?

Ans
✗ A. 15

✓ B. 60

✗ C. 40

✗ D. 50

Question ID : **1034359147**
Status : **Answered**

Q.104 Which of the following is NOT a benefit of irrigation?

Ans
✗ A. Increase in food production

✗ B. Create facilities of communication through inspection roads provided along the irrigation canals

✓ C. Create colder and damper climate through repeated irrigation

✗ D. Provide inland navigation in large canals used for irrigation supplies

Question ID : **1034359128**
Status : **Answered**

Q.105 When the surface of the spillway is made to coincide with the shape of the lower nappe of free falling water jet, then it is known as _____

Ans
✗ A. chute spillway

✓ B. ogee spillway

✗ C. shaft spillway

✗ D. drop spillway

Question ID : **1034359136**
Status : **Answered**

Q.106 What is the stripping time required for props to slab spanning up to 4.5 m?

Ans
✓ A. 7 days

✗ B. 21 days

✗ C. 3 days

✗ D. 14 days

Question ID : **1034359171**
Status : **Answered**

Q.107 Match the following tests conducted on sub-grade of highway with their types.

Test	Type
1. Shear test	A. California bearing ratio test
2. Bearing test	B. Triaxial compression test
3. Penetration test	C. Plate bearing test

Ans
✗ A. 1-C, 2-B, 3-A

✓ B. 1-B, 2-C, 3-A

✗ C. 1-B, 2-A, 3-C

✗ D. 1-A, 2-B, 3-C

Question ID : **1034359146**

Status : **Answered**

Q.108 Identify the regulatory sign shown in the following figure.

Ans
✗ A. Speed limit

✗ B. No parking

✓ C. Restriction ends

✗ D. Width limit

Question ID : **1034359140**
Status : **Answered**

Q.109 Soils are classified into four groups in which of the following soil classification systems?

Ans
✗ A. AASTHO classification

✓ B. Massachusetts Institute of Technology classification

✗ C. Indian Standard classification

✗ D. Unified soil classification

Question ID : **1034359111**
Status : **Answered**

Q.110 Which of the following checks is applied to verify the accuracy of the setting of simple curves?

Ans ✗ A. The last point so located must coincide with the point of curve fixed independently by measurements from the intersection angle.

✓ B. The last point so located must coincide with the point of tangency fixed independently by measurements from the point of intersection.

✗ C. The last point so located must coincide with the forward tangency fixed independently by measurements from the point of tangency.

✗ D. The last point so located must coincide with the point of curve fixed independently by measurements from the point of tangency.

Question ID : **1034359104**

Status : **Answered**