

CIL MT

Previous Year Paper

Civil - 2020

Coal India Limited 27th Feb 2020

Participant ID	
Participant Name	
Test Center Name	ION Digital Zone iDZ SARONA
Test Date	27/02/2020
Test Time	8:00 AM - 11:00 AM
Subject	Civil

Section : General Knowledge and Awareness

Q.1 Which of the following can be used as a coolant in a nuclear reactor?

- Ans
- ☒ A. Nitrogen
 - ☒ B. Carbon monoxide
 - ☒ C. Liquid Sodium
 - ☒ D. Hydrogen

Question ID : 59445917371
Status : Answered
Chosen Option : 3

Q.2 Phulkari is the famous handicraft of which state?

- Ans
- ☒ A. Maharashtra
 - ☒ B. Sikkim
 - ☒ C. Madhya Pradesh
 - ☒ D. Punjab

Question ID : 59445917377
Status : Answered
Chosen Option : 3

Q.3 Who among the following will only be provided with SPG cover in India?

- Ans
- ☒ A. Home Minister
 - ☒ B. President
 - ☒ C. Finance Minister
 - ☒ D. Prime Minister

Question ID : 59445917386
Status : Answered
Chosen Option : 4

Q.4 Which of the following General Insurance Company has launched “Farmitra” a mobile app for farmers?

- Ans
- ☒ A. United India Insurance
 - ☒ B. Bajaj Allianz General Insurance
 - ☒ C. The Oriental Insurance
 - ☒ D. Tata AIG Insurance

Question ID : 59445917384
Status : Answered
Chosen Option : 1

Q.5 Who was the founder of Sayyid Dynasty?

- Ans
- ☒ A. Sikandar Lodhi
 - ☒ B. Jalal-ud-din Khilji
 - ☒ C. Nasir-ud-din Mahmud
 - ☒ D. Khizar Khan

Question ID : 59445917380
Status : Answered
Chosen Option : 4

Q.6 When is the World Science Day for Peace and Development celebrated every year?

- Ans
- ☒ A. 4th November
 - ☒ B. 11th October
 - ☒ C. 30th August
 - ☒ D. 10th November

Question ID : 59445917372
Status : Answered
Chosen Option : 3

Q.7 Where is India's two operational Satellite Launch Pads located?

- Ans
- ☒ A. Rajkot
 - ☒ B. Jalandhar
 - ☒ C. Mumbai
 - ☒ D. Sriharikota

Question ID : 59445917373
Status : Answered
Chosen Option : 1

Q.8 Who has been appointed as Chairman of the Airport Authority of India?

- Ans
- ☒ A. Ashok Malik
 - ☒ B. Rajnish Kumar
 - ☒ C. Arvind Singh
 - ☒ D. Amit Khare

Question ID : 59445917388
Status : Answered
Chosen Option : 2

Q.9 Sheikh Khalifa Bin Zayed Al Nahyan has been elected as the President of which of the following country?

- Ans
- ☒ A. UAE
 - ☒ B. Bahrain
 - ☒ C. Qatar
 - ☒ D. Kuwait

Question ID : 59445917387
Status : Answered
Chosen Option : 1

Q.10 Who is the President of FICCI?

- Ans
- ☒ A. Sangita Reddy
 - ☒ B. Sandip Somany
 - ☒ C. Uday Shankar
 - ☒ D. Rashesh Shah

Question ID : 59445917393
Status : Answered
Chosen Option : 1

Q.11 Which of the following country will host "No Money for Terror" conference in 2020?

- Ans
- ☒ A. India
 - ☒ B. Nepal
 - ☒ C. China
 - ☒ D. Sri Lanka

Question ID : 59445917389
Status : Answered
Chosen Option : 1

Q.12 Which of the following country will host the 2023 Men's Hockey World Cup?

- Ans
- ☒ A. New Zealand
 - ☒ B. Spain
 - ☒ C. China
 - ☒ D. India

Question ID : 59445917375
Status : Answered
Chosen Option : 2

Q.13 _____ speed is measured by the Anemometer.

- Ans
- ☒ A. Cyclone
 - ☒ B. Wind
 - ☒ C. Current
 - ☒ D. Earthquake

Question ID : 59445917382
Status : Answered
Chosen Option : 2

Q.14 Who appoints the Vice President of India?

- Ans
- ☒ A. The Electoral College of India
 - ☒ B. Prime Minister
 - ☒ C. Supreme Court
 - ☒ D. President

Question ID : 59445917385
Status : Answered
Chosen Option : 1

Q.15 Who had introduced 'Doctrine of Lapse' in India?

- Ans
- ☒ A. Lord Hastings
 - ☒ B. Lord Canning
 - ☒ C. Lord Dalhousie
 - ☒ D. Lord Auckland

Question ID : 59445917379
Status : Answered
Chosen Option : 2

Q.16 Nabakalebara is the festival of which of the following state?

- Ans ☒ A. Odisha
- ☒ B. Kerala
- ☒ C. Andhra Pradesh
- ☒ D. Karnataka

Question ID : 59445917378
Status : Answered
Chosen Option : 4

Q.17 Which of the following is the oldest oilseed crop in India?

- Ans ☒ A. Sesame
- ☒ B. Mustard
- ☒ C. Rapeseed
- ☒ D. Flaxseed

Question ID : 59445917391
Status : Answered
Chosen Option : 4

Q.18 Which of the following Company has developed Mac Operating System?

- Ans ☒ A. HP
- ☒ B. Microsoft
- ☒ C. IBM Corp
- ☒ D. Apple

Question ID : 59445917394
Status : Answered
Chosen Option : 4

Q.19 Who is the first Indian to be nominated as the General Vice President of International Organisation Development Association (IODA)?

- Ans ☒ A. Sangita Reddy
- ☒ B. Vinaya Shetty
- ☒ C. Uday Shankar
- ☒ D. Arvind Singh

Question ID : 59445917392
Status : Answered
Chosen Option : 1

Q.20 Which of the following IT initiatives have been launched by the Ministry of Finance for improving monitoring and pace of Customs clearance of imported goods and facilitating arriving international passengers?

- Ans
- ☒ A. Cyber security
 - ☒ B. DCOI
 - ☒ C. ICEDASH and ATITHI
 - ☒ D. ICAM

Question ID : 59445917395
Status : Answered
Chosen Option : 4

Q.21 The Amazon rainforest is spread over in _____ countries.

- Ans
- ☒ A. 3
 - ☒ B. 8
 - ☒ C. 9
 - ☒ D. 5

Question ID : 59445917381
Status : Answered
Chosen Option : 2

Q.22 _____ is the most cultivated crop of Kerala.

- Ans
- ☒ A. Wheat
 - ☒ B. Cow Pea
 - ☒ C. Mustard
 - ☒ D. Chick Pea

Question ID : 59445917390
Status : Answered
Chosen Option : 4

Q.23 Who among the following has become the first Indian cricketer and second in world cricket to complete 100 T-20 Internationals?

- Ans
- ☒ A. Ravindra Jadeja
 - ☒ B. Virat Kohli
 - ☒ C. Rohit Sharma
 - ☒ D. MS Dhoni

Question ID : 59445917376
Status : Answered
Chosen Option : 3

Q.24 For which of the following mineral India is mainly depend on imports?

- Ans
- ☒ A. Mica
 - ☒ B. Lead
 - ☒ C. Limestone
 - ☒ D. Mercury

Question ID : 59445917383
Status : Answered
Chosen Option : 1

Q.25 Which of the following is the first Indian Regional Satellite?

- Ans
- ☒ A. YOUTHSAT
 - ☒ B. IRNSS-1A
 - ☒ C. INSAT-3D
 - ☒ D. GSAT-7

Question ID : 59445917374
Status : Answered
Chosen Option : 2

Section : Numerical Ability

Q.1 The third term of an arithmetic progression is 6. Then the sum of first five terms is:

- Ans
- ☒ A. 35
 - ☒ B. 25
 - ☒ C. 15
 - ☒ D. 30

Question ID : 59445917469
Status : Answered
Chosen Option : 4

Q.2 If A's income is 60% more of B's income and B's income is 40% less than C's income, then by what percent is C's income more than A's income? (Correct to one decimal place)

- Ans
- ☒ A. 7.6
 - ☒ B. 6.8
 - ☒ C. 2.4
 - ☒ D. 4.2

Question ID : 59445917450
Status : Answered
Chosen Option : 4

Q.3 If $x^4 - 79x^2 + 1 = 0$, then a value of $x^3 + x^{-3}$ can be:

- Ans
- ☒ A. 798
 - ☒ B. 720
 - ☒ C. 789
 - ☒ D. 702

Question ID : 59445917467
Status : Answered
Chosen Option : 3

Q.4 A train while going slower by 15 km reaches late by 45 hours, if it travels faster by 60 km it reaches 72 hours earlier. The total distance (in km) travelled is:

- Ans
- ☒ A. 8775
 - ☒ B. 9750
 - ☒ C. 8250
 - ☒ D. 7500

Question ID : 59445917462
Status : Answered
Chosen Option : 1

Q.5 A covers a certain distance at a certain speed. If he covers half of the distance in three time then the ratio of this speed to the original speed is:

- Ans
- ☒ A. 6:1
 - ☒ B. 1:4
 - ☒ C. 4:5
 - ☒ D. 1:6

Question ID : 59445917461
Status : Answered
Chosen Option : 4

Q.6 A 18 m long ladder (whose foot is on the ground) leans against a wall making an angle of 30° with the wall. What is the height (in m) of the point where the ladder touches the wall from the ground?

- Ans
- ☒ A. $9\sqrt{3}$
 - ☒ B. $9\sqrt{2}$
 - ☒ C. $\frac{9\sqrt{3}}{2}$
 - ☒ D. 18

Question ID : 59445917465
Status : Answered
Chosen Option : 1

Q.7 A person marks his goods 40% above the cost price. He sold 30% of goods at marked price, 60% of the remaining at a discount of 20% and remaining at 40% discount. What is his overall gain percent?

- Ans  A. 27.4%
 B. 17.6%
 C. 23.5%
 D. 15.8%

Question ID : 59445917453
Status : Answered
Chosen Option : 1

Q.8 From the top of a pole house A in a street, the angles of elevation and depression of the top and foot of house B on the opposite side of the street are 60° and 30° , respectively. If the height of pole house A is 21 m, then what is the height (in m) of house B? (correct to one decimal place)

- Ans  A. 57.5
 B. 47.8
 C. 48.5
 D. 49.8

Question ID : 59445917466
Status : Answered
Chosen Option : 2

Q.9 A woman distributed her savings between her daughters A, B, C and D in the ratio 6 : 7 : 9 : 16. If A gives Rs. 600 from his share to C, the ratio of shares of A, B, C and D becomes 1 : 4 : 2 : 5. What is the sum of shares (in Rs.) of A, C and B, in the beginning?

- Ans  A. 13200
 B. 14550
 C. 14750
 D. 15100

Question ID : 59445917454
Status : Answered
Chosen Option : 1

Q.10 The average of 17 numbers is 48. The average of first 9 numbers is 45 and average of next 9 numbers is 52. If 9th number is excluded, the average of the remaining number is:

- Ans  A. 58.5135
 B. 49.5225
 C. 53.4375
 D. 47.4375

Question ID : 59445917449
Status : Answered
Chosen Option : 4

Q.11 If a six-digit number $3x9z8y$ is divisible by 7, 11, 13, then the average value of x, y, z is:

- Ans
- ☒ A. $23/3$
 - ☒ B. $31/3$
 - ☒ C. $20/3$
 - ☒ D. 8

Question ID : 59445917446
Status : Answered
Chosen Option : 3

Q.12 If $x = \frac{\sqrt{7}-\sqrt{5}}{\sqrt{5}+\sqrt{7}}$ and y is reciprocal of x , then what is the value of $\sqrt{(x^3 + y^3)}$?

- Ans
- ☒ A. $5\sqrt{47}$
 - ☒ B. $6\sqrt{47}$
 - ☒ C. $3\sqrt{47}$
 - ☒ D. $\sqrt{47}$

Question ID : 59445917455
Status : Answered
Chosen Option : 3

Q.13 A loan has to be returned in two equal yearly instalments each of Rs. 42135. If the rate of interest is 6% p.a., compounded annually, then the total interest paid (in Rs.) is:

- Ans
- ☒ A. 7700
 - ☒ B. 7550
 - ☒ C. 7020
 - ☒ D. 8000

Question ID : 59445917458
Status : Answered
Chosen Option : 2

Q.14 The value of $\frac{5.169 \times 5.169 \times 5.169 + 64 \times (0.888)^3}{(5.169)^2 + (3.552)^2 - 4(0.888)(5.169)}$ is $(8 + k)$, where $k = ?$

- Ans
- ☒ A. 0.388
 - ☒ B. 0.656
 - ☒ C. 0.721
 - ☒ D. 0.129

Question ID : 59445917447
Status : Answered
Chosen Option : 2

Q.15 If $\sqrt{12 - 2\sqrt{35}} + \sqrt{8 + 2\sqrt{15}} = \sqrt{a} + \sqrt{b}$, where a and b are positive integers, then the value of ab is closest to:

- Ans
- ☒ A. 35
 - ☒ B. 12
 - ☒ C. 21
 - ☒ D. 8

Question ID : 59445917456
Status : Answered
Chosen Option : 1

Q.16 Alloy A contains copper and zinc in the ratio 4 : 5 and alloy B contains copper and zinc in the ratio 7 : 2. A and B are taken in the ratio 7 : 4 and melted to form a new alloy. The percentage of copper in the new alloy is closest to:

- Ans
- ☒ A. 57.79%
 - ☒ B. 65.25%
 - ☒ C. 56.57%
 - ☒ D. 67.5%

Question ID : 59445917460
Status : Answered
Chosen Option : 3

Q.17 Sum of first 10 terms of a GP is equal to the sum of the first 12 terms in the same GP. Sum of the first 17 terms is 42, what is the fourth term in the GP?

- Ans
- ☒ A. 0
 - ☒ B. -42
 - ☒ C. 42
 - ☒ D. -21

Question ID : 59445917470
Status : Answered
Chosen Option : 2

Q.18 A person invested a sum of Rs. 9000 at $r\%$ per annum at simple interest and a sum of Rs. 13500 at $(r-2)\%$ at simple interest. If total interest earned on both the investments for 5 years is Rs. 9337.50, then the rate of interest on the first investment is:

- Ans
- ☒ A. 7.5%
 - ☒ B. 8%
 - ☒ C. 9.5%
 - ☒ D. 10%

Question ID : 59445917457
Status : Answered
Chosen Option : 3

Q.19 A and B can do a work in 21 days, A is $\frac{7}{4}$ times as efficient as B. In how many days, A alone can complete the $\frac{200}{3}\%$ of the work?

- Ans**
- ☒ A. 36
 - ☒ B. 33
 - ☒ C. 22
 - ☒ D. 27

Question ID : **59445917463**
Status : **Answered**
Chosen Option : **1**

Q.20 In a class of 60 students, the girls are 60%. The average weight of boys is 62 kg and that of girls is 58 kg. What is the average weight (in kg) of whole class?

- Ans**
- ☒ A. 60
 - ☒ B. 59.6
 - ☒ C. 61.5
 - ☒ D. 61.4

Question ID : **59445917448**
Status : **Answered**
Chosen Option : **2**

Q.21 A can do a certain work in 12 days, B alone can do the same work in 16 days. A and B undertook to complete it in Rs. 8000. With the help of C, they completed the work in 6 days. How much money (in Rs.) be paid to C?

- Ans**
- ☒ A. 4000
 - ☒ B. 3000
 - ☒ C. 1000
 - ☒ D. 2000

Question ID : **59445917464**
Status : **Answered**
Chosen Option : **2**

Q.22 Twenty five litres of 40% concentration of acid solution is added to 35 litres of 70% concentration of acid solution. What is the concentration of acid in the new solution?

- Ans**
- ☒ A. 62.5%
 - ☒ B. 57.5%
 - ☒ C. 55%
 - ☒ D. 60%

Question ID : **59445917459**
Status : **Answered**
Chosen Option : **2**

Q.23 A woman saves 18% of her income. If her income increases by 15% and the expenditure increases by 21.6%, then what is the percent decrease in the saving (correct to one decimal place)?

- Ans ☒ A. 15.1
☒ B. 17.2
☒ C. 13.7
☒ D. 16.8

Question ID : 59445917451
Status : Answered
Chosen Option : 3

Q.24 A person sold two articles for Rs. 1836 each. On one he gained 20% and on other he lost 20%. What is his overall gain or loss percent, correct to one decimal place?

- Ans ☒ A. 7% loss
☒ B. 4% loss
☒ C. 5% gain
☒ D. 6% gain

Question ID : 59445917452
Status : Answered
Chosen Option : 1

Q.25 If $x^4 + x^2y^2 + y^4 = 29$ and $x^2 - xy + y^2 = 5$, then what is the value of $5xy$?

- Ans ☒ A. -1
☒ B. 2
☒ C. -2
☒ D. 0

Question ID : 59445917468
Status : Answered
Chosen Option : 3

Section : Reasoning

Q.1 Three statements are given followed by four conclusions I, II, III and IV. You have to consider these statements to be true, even if they seem at variance from commonly known facts. Decide which of the given conclusions logically follow/s from the given statement.

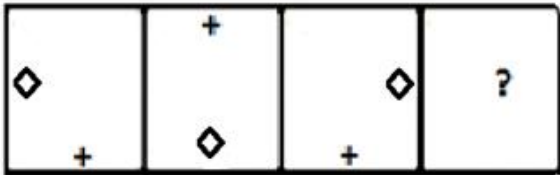
Statements:
A. All beetroots are carrots.
B. All carrots are radishes.
C. All radishes are white.

Conclusions:
I. All beetroots are white.
II. All white are carrots.
III. All radishes are beetroots.
IV. All carrots are white

- Ans ☒ A. Only conclusions II and III follow.
☒ B. All the conclusion follow.
☒ C. Only conclusions I and IV follow.
☒ D. Only conclusions I and II follow.

Question ID : 59445917541
Status : Answered
Chosen Option : 2

Q.2 Select the figure that will come next in the following figure series.



- Ans ☒ A.
- ☒ B.
- ☒ C.
- ☒ D.

Question ID : 59445917536
Status : Answered
Chosen Option : 2

Q.3 Select the option that is related to the fourth term in the same way as the first term is related to the second term.

Quarrel : War : Error : ?

- Ans**  **A. Carelessness**
 **B. Blunder**
 **C. Anger**
 **D. Omission**

Question ID : **59445917521**
Status : **Answered**
Chosen Option : **2**

Q.4 Select the pair of words from the given options that shares a similar relationship as the given pair.

Shark : Fish

- Ans**  **A. Dolphin: Fish**
 **B. Whale : Mammal**
 **C. Iguana: Amphibian**
 **D. Bat: Bird**

Question ID : **59445917523**
Status : **Answered**
Chosen Option : **2**

Q.5 Sukanya is Ayushman's wife. Lekha is Sukanya's sister. Nisha is Lekha's mother. Mukesh is Nisha's husband. Piyush is Nisha's Son. How is Ayushman related to Mukesh?

- Ans**  **A. Brother**
 **B. Brother in law**
 **C. Son in law**
 **D. Son**

Question ID : **59445917531**
Status : **Answered**
Chosen Option : **3**

Q.6 Which of the answer figures is the exact mirror image of the given problem figure when the mirror is held at the right side?

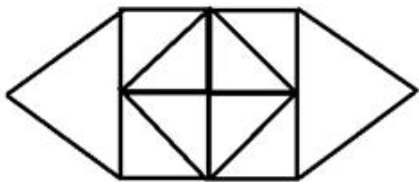
PR4GTF7Dq

Ans

- ☒ A. pR4GTF7Dq
- ☐ B. bR4GTF7Dq
- ☐ C. pR4GTF7Dq
- ☐ D. qR4GTF7Dq

Question ID : 59445917525
Status : Answered
Chosen Option : 1

Q.7 How many triangles are there in the given figure?



Ans

- ☐ A. 12
- ☐ B. 16
- ☐ C. 15
- ☒ D. 14

Question ID : 59445917530
Status : Answered
Chosen Option : 4

Q.8 Which word CANNOT be formed using letters of the given word using each letter only as many times as it appears in the given word?

DOCUMENTARY

Ans

- ☒ A. DEMOCRACY
- ☐ B. EDUCATOR
- ☐ C. MONETARY
- ☐ D. AERODUCT

Question ID : 59445917540
Status : Answered
Chosen Option : 1

Q.9 In a certain code, ARDENT is coded as 13, CANOE is coded as 11, then what is the code of REPRESENT?

- Ans ☒ A. 18
☒ B. 17
☒ C. 20
☒ D. 19

Question ID : 59445917539
Status : Marked For Review
Chosen Option : 4

Q.10 Select the option that is related to the fourth term in the same way as the first term is related to the second term.

REQUEST : QGNYZYM :: _____ : OTBHDIM

- Ans ☒ A. PRECICT
☒ B. RESTFIT
☒ C. RESTICT
☒ D. PREDICT

Question ID : 59445917522
Status : Answered
Chosen Option : 3

Q.11 Rearrange the given letters to form meaningful words and select the option which is different from the other three words.

- Ans ☒ A. RPOATIC
☒ B. EOGARN
☒ C. PLEAP
☒ D. SEHCWA

Question ID : 59445917524
Status : Answered
Chosen Option : 4

Q.12 Which number will replace the question mark (?) in the following series.

2, 7, 14, 23, ?, 47

- Ans ☒ A. 30
☒ B. 37
☒ C. 32
☒ D. 34

Question ID : 59445917535
Status : Answered
Chosen Option : 4

Q.13 In a certain language, if PERSIST is written as 7591912, then how is ANCESTOR is coded in the same language?

- Ans
- ☒ A. 15351059
 - ☒ B. 14351268
 - ☒ C. 14351259
 - ☒ D. 15351269

Question ID : 59445917538
Status : Answered
Chosen Option : 4

Q.14 Some equations are solved on the basis of a certain system. Find the correct answer for the given unsolved equation on that basis:-

94 x 18 = 44
89 x 23 = 78
75 x 36 = ?

- Ans
- ☒ A. 43
 - ☒ B. 53
 - ☒ C. 21
 - ☒ D. 56

Question ID : 59445917544
Status : Answered
Chosen Option : 3

Q.15 A + B means 'A is the father of B'; A - B means 'A is the wife of B', A x B means 'A is brother of B', A ÷ B means 'A is the daughter of B' . If R - V x T ÷ W, then how is R related to W?

- Ans
- ☒ A. Daughter in law
 - ☒ B. Son in law
 - ☒ C. Mother in law
 - ☒ D. Mother

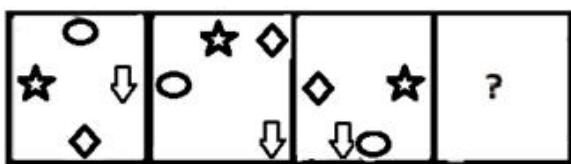
Question ID : 59445917532
Status : Answered
Chosen Option : 1

Q.16 Ravi is shorter than Kartik but taller than Gagan and Tarun who are taller than Saksham. Sunil is taller than Aarav but shorter than Saksham. Who is the tallest of all?

- Ans
- ☒ A. Tarun
 - ☒ B. Kartik
 - ☒ C. Aarav
 - ☒ D. Gagan

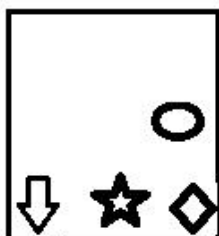
Question ID : 59445917542
Status : Answered
Chosen Option : 2

Q.17 Select the figure that will come next in the following figure series.

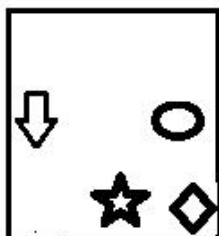


Ans

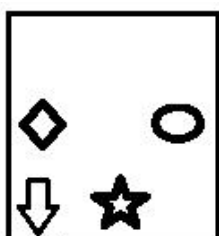
✓ A.



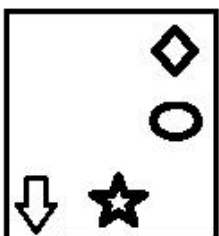
✗ B.



✗ C.



✗ D.



Question ID : 59445917537

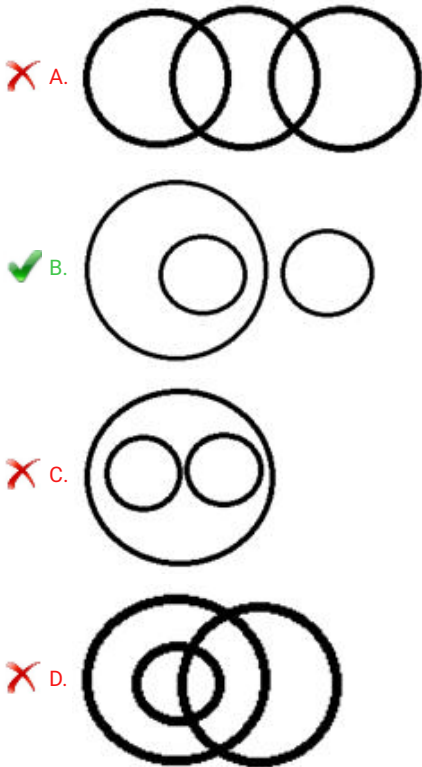
Status : Answered

Chosen Option : 2

Q.18 Choose the Venn diagram from the given options which represents the correct relationship amongst the following classes:

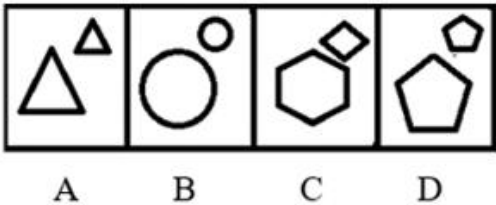
Pen, Chair, Stationery

Ans



Question ID : 59445917543
Status : Answered
Chosen Option : 2

Q.19 Select the figure which is different from the other three alternatives.



- Ans ☒ A. B
- ☒ B. C
- ☒ C. D
- ☒ D. A

Question ID : 59445917533
Status : Answered
Chosen Option : 2

Q.20 A group of 74 students of Class XI went on picnic. The number of students who went on picnic by each section is as follows:

Section A = 15

Section B = 24

Section C = 15

Section D = 20

5 students from Section A spent as much as 4 students from Section B. 12 Section B students spent as much as 9 Section C students and 6 Section C students spent as much as 8 Section D student. If every student of a particular section spent the same amount and all the students spent Rs 23,370 altogether, find the amount spent by each student of Section D.

Ans  A. Rs 307.50

 B. Rs 410

 C. Rs 246.50

 D. Rs 369

Question ID : 59445917534

Status : Answered

Chosen Option : 3

Q.21 Six participants, U, V, W, X, Y and Z are sitting in two rows, three in each facing each other. X is second to the right of Z. W the neighbour of Y, is sitting diagonally opposite X. V is neighbor of Z. Y is not the end of any row. If V and U interchange the positions, who would be the neighbours of U in the new position?

Ans  A. X and Y

 B. W and X

 C. Z and X

 D. Z and Y

Question ID : 59445917527

Status : Answered

Chosen Option : 3

Q.22 A reputed educational institution is to select meritorious graduates, for the award of scholarships for higher studies abroad at a premium University, who fulfill the following criteria:

The candidate must -

- (i) have Minimum 85% marks in the final year examination of the institute.
- (ii) have secured at least 90 % marks in the selection test of the University abroad.
- (iii) not be less than 21 years and not more than 25 years of age as on 1.01.2020

In case of a candidate who satisfies all other criteria except:

- (a) At (i) above but has won at least one major prize/award in Debate/ Sports/ Cultural event, the case may be referred to the Director of the Institution.
- (b) At (ii) above but is from the reserved category, there is relaxation of age by 2 years.

Based on the above criteria and conditions, analyze and decide which of the following course of action should be taken for the candidate whose description is provided below. Please note that you are not to assume anything other than the given information.

Deepinder Bhalla, born on 17th December, 1997 secured 79% marks in final year. She got 92% marks in selection test and has won 3 Inter-University debate competitions.

- Ans
- ☒ A. The candidate is to be selected under the relaxed criterion.
 - ☒ B. The candidate is not to be selected.
 - ☒ C. The case is to be referred to the Director of the Institute,
 - ☒ D. The candidate is to be selected.

Question ID : 59445917529

Status : Answered

Chosen Option : 3

Q.23 A cube with each edge of 4 cm is painted on all faces. How many of 1 cm cubes, cut out of the larger cube, will not have paint on any of its sides?

- Ans
- ☒ A. 3
 - ☒ B. 6
 - ☒ C. 8
 - ☒ D. 4

Question ID : 59445917526

Status : Answered

Chosen Option : 2

Q.24 A statement is given followed by two courses of actions I and II. You have to assume everything in the statement to be true, then decide which of the suggested given courses of action logically follows for pursuing.

Statement: It is estimated that in this year's International Trade fair 25 lakh people will visit Pragati Maidan, Delhi

Courses of action:

- I. The Delhi Police should be on high alert and discourage people from visiting the fair.
- II. The management of fair should have enough ticket booths and shuttle services to avoid long queues.

- Ans
- ☒ A. Neither I nor II follows.
 - ☒ B. Only I follows.
 - ☒ C. Only II follows.
 - ☒ D. Both I or II follow.

Question ID : 59445917528
Status : Answered
Chosen Option : 3

Q.25 Four groups of numbers are given out of which the numbers in three groups bear a certain common relationship. Choose the group in which the numbers are differently related.

- Ans
- ☒ A. 18 - 81
 - ☒ B. 22 - 121
 - ☒ C. 38 - 361
 - ☒ D. 28 - 195

Question ID : 59445917545
Status : Answered
Chosen Option : 4

Section : General English

Q.1 Choose the correct words to fill in the blanks.

The prize money was shared _____ all the members _____ the football team.

- Ans
- ☒ A. by; from
 - ☒ B. between; in
 - ☒ C. by; among
 - ☒ D. among; of

Question ID : 59445917599
Status : Answered
Chosen Option : 4

Q.2 Complete the sentence with the appropriate word.

It is claimed that _____ in the telecom industry will bring the charges down for people.

- Ans
- ☒ A. decrease
 - ☒ B. competition
 - ☒ C. finance
 - ☒ D. increase

Question ID : 59445917613
Status : Answered
Chosen Option : 4

Q.3 Choose the word that roughly means the same as the word highlighted in the sentence.

Students who prepare for their board exams shouldn't neglect the languages.

- Ans
- ☒ A. abandon
 - ☒ B. decline
 - ☒ C. fail
 - ☒ D. ignore

Question ID : 59445917602
Status : Answered
Chosen Option : 1

Q.4 Choose the correct conjunction to complete the sentence.

I want to tell you what happened _____ you will understand it better.

- Ans
- ☒ A. although
 - ☒ B. so that
 - ☒ C. because
 - ☒ D. but

Question ID : 59445917610
Status : Answered
Chosen Option : 2

Q.5 Choose the correct structure to complete the sentence.

_____ on his own, they would have been forced to dismiss him from service.

- Ans
- ☒ A. He had resigned
 - ☒ B. He had not resigned
 - ☒ C. Unless he had not resigned
 - ☒ D. Had he not resigned

Question ID : 59445917611
Status : Answered
Chosen Option : 4

Q.6 Choose the correct meaning of the expression highlighted in the sentence.

The amended law is a watered down version of the earlier law.

- Ans
- ☒ A. submerged in water
 - ☒ B. difficult to implement
 - ☒ C. stronger
 - ☒ D. weaker or diluted

Question ID : 59445917609
Status : Answered
Chosen Option : 2

Q.7 Choose the correct spelling from the options given.

- Ans
- ☒ A. accomodate
 - ☒ B. accomodete
 - ☒ C. accomadate
 - ☒ D. accommodate

Question ID : 59445917606
Status : Answered
Chosen Option : 4

Q.8 Choose the word that means the opposite of the highlighted word in the sentence.

It is difficult to find any indication of humility in that person.

- Ans
- ☒ A. submission
 - ☒ B. compassion
 - ☒ C. concern
 - ☒ D. pride

Question ID : 59445917604
Status : Answered
Chosen Option : 3

Q.9 Identify the part of the sentence which contains an error.

India and Sri Lanka/ have/ many large number of/ educated workers than Brazil.

- Ans
- ☒ A. India and Sri Lanka
 - ☒ B. have
 - ☒ C. many large number of
 - ☒ D. educated workers than Brazil

Question ID : 59445917596
Status : Answered
Chosen Option : 3

Q.10 Identify the part of the sentence which contains an error.

The coin collector was willing to pay/ a huge sum for the rare coin/ because it was/ one kind.

- Ans
- ☒ A. because it was
 - ☒ B. coin collector was willing to pay
 - ☒ C. one kind
 - ☒ D. a huge sum for the rare coin

Question ID : 59445917597
Status : Answered
Chosen Option : 3

Q.11 Choose the word that roughly means the same as the word highlighted in the sentence.

The excavation yielded priceless treasures from the earliest civilization.

- Ans
- ☒ A. prized
 - ☒ B. cheap
 - ☒ C. memorable
 - ☒ D. valuable

Question ID : 59445917603
Status : Answered
Chosen Option : 3

Q.12 Choose the word that means the opposite of the highlighted word in the sentence.

If you are selected, you must comply with the following conditions.

- Ans
- ☒ A. proceeding
 - ☒ B. succeeding
 - ☒ C. receding
 - ☒ D. preceding

Question ID : 59445917605
Status : Answered
Chosen Option : 2

Q.13 Choose the word that best replaces the words highlighted in the sentence.

Rahim has the power to see what would or might happen in the future.

- Ans
- ☒ A. prediction
 - ☒ B. imagination
 - ☒ C. foresight
 - ☒ D. astrology

Question ID : 59445917600
Status : Answered
Chosen Option : 1

Q.14 Put the jumbled words in the correct order to form a meaningful sentence.

can / walk / every / take / day / a / if / try / you / should / to / you

- Ans ☒ A. If you can, you should try to take a walk every day.
- ☐ B. If you should, you can try every day to take a walk.
- ☐ C. If you can try to, you should take a walk every day.
- ☐ D. If you should take a walk every day, you can try to.

Question ID : 59445917614
Status : Answered
Chosen Option : 1

Q.15 Choose the correct word(s) to fill in the blank.

Mohan Lal _____ asleep while watching TV last night.

- Ans ☐ A. falls
- ☒ B. fell
- ☐ C. has fallen
- ☐ D. had fallen

Question ID : 59445917598
Status : Answered
Chosen Option : 4

Q.16 Complete the sentence with the appropriate word.

Tarun's father bought him a motorbike but _____ him to ride it safely.

- Ans ☐ A. helped
- ☐ B. taught
- ☐ C. pleased
- ☒ D. cautioned

Question ID : 59445917612
Status : Answered
Chosen Option : 4

Q.17 Choose the correct meaning of the expression highlighted in the sentence.

An unknown politician tried to whip up the crowd through his speech.

- Ans ☐ A. beat up
- ☐ B. drive away
- ☐ C. scolded
- ☒ D. stir emotionally

Question ID : 59445917608
Status : Answered
Chosen Option : 4

Q.18 Choose the correct order of sentences to form a meaningful paragraph.

Ans  A. Movies depict cruelty and violence as heroic rather than vicious.

Every day we read and hear about the crimes committed by younger people.
The result is that juvenile crime has become a major problem in our country.
In addition, many parents often avoid their responsibilities or are unable to exercise them.

 B. The result is that juvenile crime has become a major problem in our country.

In addition, many parents often avoid their responsibilities or are unable to exercise them.
Movies depict cruelty and violence as heroic rather than vicious.
Every day we read and hear about the crimes committed by younger people.

 C. In addition, many parents often avoid their responsibilities or are unable to exercise them.

Movies depict cruelty and violence as heroic rather than vicious.
Every day we read and hear about the crimes committed by younger people.
The result is that juvenile crime has become a major problem in our country.

 D. Every day we read and hear about the crimes committed by younger people.

Movies depict cruelty and violence as heroic rather than vicious.
In addition, many parents often avoid their responsibilities or are unable to exercise them.
The result is that juvenile crime has become a major problem in our country.

Question ID : 59445917615
Status : Answered
Chosen Option : 2

Q.19 Choose the correct spelling from the options given.

Ans  A. inaugurate

 B. enaugarate

 C. innagarate

 D. inagurate

Question ID : 59445917607
Status : Answered
Chosen Option : 3

Q.20 Choose the word that best replaces the words highlighted in the sentence.

Our teacher has the art of explaining something clearly.

Ans  A. description

 B. narration

 C. exposition

 D. argumentation

Question ID : 59445917601
Status : Answered
Chosen Option : 1

Comprehension:

Read the passage carefully and answer the questions that follow.

The Postmaster, a native of Calcutta, took up his duties in the remote village of Ulapur. He felt very lonely and homesick. At times he wrote verses. Ratan was his only companion. She was an orphan girl. She did odd jobs for him. He talked to Ratan about his mother, brother and sister. That gave him much comfort. Ratan got very much attached to him.

One day the Postmaster fell ill. Ratan nursed him like his mother. Afterwards the Postmaster applied for a transfer. It was rejected. So he resigned his job. Ratan expected him to take her with him. The Postmaster simply laughed at her idea. The laughter haunted her throughout the night.

The Postmaster promised to ask his successor to take care of her. It offended her more. Ratan burst out weeping and said there was no need for that. Before his departure he gave her some money. She refused to accept it. While crossing the river in a boat he felt an impulse to go back and bring the girl. It was too late. Meetings and partings are numberless in human life. He consoled himself with this philosophy. Ratan had no such philosophy to console her. She was wandering about the post office with tears in her eyes, fondly hoping that her Postmaster would return.

SubQuestion No : 21

Q.21 What do you infer about Ratan from the words

“She ____ fondly hoping that the Postmaster would return”?

Choose the best option, according to the passage.

- Ans**
- ☒ A. The Postmaster treated Ratan only as a servant.
 - ☒ B. Ratan was very much attached to the postmaster.
 - ☒ C. The Postmaster did not like Ratan, so he left her.
 - ☒ D. The Postmaster did not at all want to take Ratan with him.

Question ID : 59445918661

Status : Answered

Chosen Option : 1

Comprehension:

Read the passage carefully and answer the questions that follow.

The Postmaster, a native of Calcutta, took up his duties in the remote village of Ulapur. He felt very lonely and homesick. At times he wrote verses. Ratan was his only companion. She was an orphan girl. She did odd jobs for him. He talked to Ratan about his mother, brother and sister. That gave him much comfort. Ratan got very much attached to him.

One day the Postmaster fell ill. Ratan nursed him like his mother. Afterwards the Postmaster applied for a transfer. It was rejected. So he resigned his job. Ratan expected him to take her with him. The Postmaster simply laughed at her idea. The laughter haunted her throughout the night.

The Postmaster promised to ask his successor to take care of her. It offended her more. Ratan burst out weeping and said there was no need for that. Before his departure he gave her some money. She refused to accept it. While crossing the river in a boat he felt an impulse to go back and bring the girl. It was too late. Meetings and partings are numberless in human life. He consoled himself with this philosophy. Ratan had no such philosophy to console her. She was wandering about the post office with tears in her eyes, fondly hoping that her Postmaster would return.

SubQuestion No : 22

Q.22 "At times he wrote verses." The phrase "at times" means _____.

- Ans
- ☒ A. often
 - ☒ B. rarely
 - ☒ C. sometimes
 - ☒ D. always

Question ID : 59445918658

Status : Answered

Chosen Option : 4

Comprehension:

Read the passage carefully and answer the questions that follow.

The Postmaster, a native of Calcutta, took up his duties in the remote village of Ulapur. He felt very lonely and homesick. At times he wrote verses. Ratan was his only companion. She was an orphan girl. She did odd jobs for him. He talked to Ratan about his mother, brother and sister. That gave him much comfort. Ratan got very much attached to him.

One day the Postmaster fell ill. Ratan nursed him like his mother. Afterwards the Postmaster applied for a transfer. It was rejected. So he resigned his job. Ratan expected him to take her with him. The Postmaster simply laughed at her idea. The laughter haunted her throughout the night.

The Postmaster promised to ask his successor to take care of her. It offended her more. Ratan burst out weeping and said there was no need for that. Before his departure he gave her some money. She refused to accept it. While crossing the river in a boat he felt an impulse to go back and bring the girl. It was too late. Meetings and partings are numberless in human life. He consoled himself with this philosophy. Ratan had no such philosophy to console her. She was wandering about the post office with tears in her eyes, fondly hoping that her Postmaster would return.

SubQuestion No : 23

Q.23 Choose the best option that expresses the tone of the passage.

- Ans**
- ☒ A. serious
 - ☒ B. dismissive
 - ☒ C. sentimental
 - ☒ D. casual

Question ID : 59445918660

Status : Answered

Chosen Option : 3

Comprehension:

Read the passage carefully and answer the questions that follow.

The Postmaster, a native of Calcutta, took up his duties in the remote village of Ulapur. He felt very lonely and homesick. At times he wrote verses. Ratan was his only companion. She was an orphan girl. She did odd jobs for him. He talked to Ratan about his mother, brother and sister. That gave him much comfort. Ratan got very much attached to him.

One day the Postmaster fell ill. Ratan nursed him like his mother. Afterwards the Postmaster applied for a transfer. It was rejected. So he resigned his job. Ratan expected him to take her with him. The Postmaster simply laughed at her idea. The laughter haunted her throughout the night.

The Postmaster promised to ask his successor to take care of her. It offended her more. Ratan burst out weeping and said there was no need for that. Before his departure he gave her some money. She refused to accept it. While crossing the river in a boat he felt an impulse to go back and bring the girl. It was too late. Meetings and partings are numberless in human life. He consoled himself with this philosophy. Ratan had no such philosophy to console her. She was wandering about the post office with tears in her eyes, fondly hoping that her Postmaster would return.

SubQuestion No : 24

Q.24 Choose the most appropriate option.

What is the theme (or main idea) of the passage?

- Ans**
- ☒ A. We should appreciate those who help us in life.
 - ☒ B. We should not care for the people who help us.
 - ☒ C. Human relationships have no monetary value.
 - ☒ D. We meet so many people in our lives and we cannot remember all of them.

Question ID : 59445918659

Status : Answered

Chosen Option : 1

Comprehension:

Read the passage carefully and answer the questions that follow.

The Postmaster, a native of Calcutta, took up his duties in the remote village of Ulapur. He felt very lonely and homesick. At times he wrote verses. Ratan was his only companion. She was an orphan girl. She did odd jobs for him. He talked to Ratan about his mother, brother and sister. That gave him much comfort. Ratan got very much attached to him.

One day the Postmaster fell ill. Ratan nursed him like his mother. Afterwards the Postmaster applied for a transfer. It was rejected. So he resigned his job. Ratan expected him to take her with him. The Postmaster simply laughed at her idea. The laughter haunted her throughout the night.

The Postmaster promised to ask his successor to take care of her. It offended her more. Ratan burst out weeping and said there was no need for that. Before his departure he gave her some money. She refused to accept it. While crossing the river in a boat he felt an impulse to go back and bring the girl. It was too late. Meetings and partings are numberless in human life. He consoled himself with this philosophy. Ratan had no such philosophy to console her. She was wandering about the post office with tears in her eyes, fondly hoping that her Postmaster would return.

SubQuestion No : 25

Q.25 Which of the following did NOT give comfort to the postmaster when he felt homesick?

- Ans**
- ☒ A. He talked to Ratan about his family.
 - ☒ B. Ratan nursed him like his mother when he fell ill.
 - ☒ C. When Ratan asked him to take her with him, he laughed at the idea.
 - ☒ D. He wrote verses at times.

Question ID : 59445918657

Status : Answered

Chosen Option : 4

Q.1 In friction circle method of slope analysis, with R as the radius of the slip circle, and ϕ as angle of shearing resistance, the radius of the friction circle is equal to:

- Ans**
- ☒ A. $R \cos \phi$
 - ☒ B. $R \sin \phi$
 - ☒ C. $R / \cos \phi$
 - ☒ D. $R \tan \phi$

Question ID : **59445917700**
Status : **Answered**
Chosen Option : **2**

Q.2 The density at any point of a slender rod of length l varies with the first power of the distance of the point from one end of the rod. Locate the mass centre.

- Ans**
- ☒ A. $\frac{3l}{5}$
 - ☒ B. $\frac{2l}{3}$
 - ☒ C. $\frac{l}{4}$
 - ☒ D. $\frac{l}{2}$

Question ID : **59445917657**
Status : **Answered**
Chosen Option : **3**

Q.3 For a beam, Shear span is defined as the zone where:

- Ans**
- ☒ A. Bending moment is zero
 - ☒ B. Shear force is constant
 - ☒ C. Bending moment is constant
 - ☒ D. Shear force is zero

Question ID : **59445917662**
Status : **Answered**
Chosen Option : **2**

Q.4 A single bay portal frame of height h fixed at the base is subjected to a horizontal displacement of δ at the top. Assuming all members to be prismatic, the base moments developed is proportional to:

- Ans**
- ☒ A. $\frac{1}{h}$
 - ☒ B. $\frac{1}{h^2}$
 - ☒ C. $\frac{1}{\sqrt{2} h}$
 - ☒ D. $\frac{1}{h^2}$

Question ID : **59445917670**
Status : **Answered**
Chosen Option : **4**

Q.5 A steel column base is subjected to a moment. If the intensity of bearing pressure due to axial load is equal to stress due to moment , then the bearing pressure between the base and concrete is :

- Ans
- ☒ A. Tension at one end and compression at other end
 - ☒ B. Uniform compression throughout
 - ☒ C. Uniform tension throughout
 - ☒ D. Zero at one end and compression at other end

Question ID : 59445917685
Status : Answered
Chosen Option : 4

Q.6 According to ICAO recommendation, while selecting the site for a runway, as the elevation of the locality changes, the rate at which runway length has to be modified is:

- Ans
- ☒ A. Increased at the rate of 10% per 300 m rise in elevation above MSL.
 - ☒ B. Increased at the rate of 7% per 300 m rise in elevation above MSL.
 - ☒ C. Decreased at the rate of 9% per 300 m rise in elevation above MSL.
 - ☒ D. Decreased at the rate of 5% per 300 m rise in elevation above MSL.

Question ID : 59445917742
Status : Answered
Chosen Option : 2

Q.7 Determine the approximate proportion of dry cement mortar required for brick work with bricks of nominal size 19 cm x 9 cm x 9 cm, with 18% extra for frog filling and wastage is : (assume 1 m³ of wet mortar = 1.3 m³ of dry mortar):

- Ans
- ☒ A. 35.3%
 - ☒ B. 32.5%
 - ☒ C. 26.7%
 - ☒ D. 41%

Question ID : 59445917676
Status : Answered
Chosen Option : 3

Q.8 The following statements S1, S2 and S3 pertain to compaction on soils.

S1 : It is a time dependent phenomenon.
S2 : Soil is always unsaturated.
S3 : Densification of soil is due to expulsion of pore water from voids.

Identify the incorrect statement(s).

- Ans
- ☒ A. S1 and S3
 - ☒ B. S2 only
 - ☒ C. S1 only
 - ☒ D. S2 and S3

Question ID : 59445917697
Status : Answered
Chosen Option : 2

Q.9 The minimum width recommended for kerbed urban road, so as to give allowance for stalled vehicle is:

- Ans
- ☒ A. 6.5 m
 - ☒ B. 5.5 m
 - ☒ C. 7 m
 - ☒ D. 3.5 m

Question ID : 59445917739
Status : Answered
Chosen Option : 4

Q.10 Under pure shear the shape of the body gets distorted. What is the inference about its volume?

- Ans
- ☒ A. remains the same
 - ☒ B. increases
 - ☒ C. shear and volume of body are not related
 - ☒ D. decreases

Question ID : 59445917665
Status : Answered
Chosen Option : 2

Q.11 From the consideration of limiting deflection, the use of high strength steel (Fe 415 grade) in a reinforced concrete beam results in:

- Ans
- ☒ A. Increase in width
 - ☒ B. No change in depth
 - ☒ C. Reduction in depth
 - ☒ D. Increase in depth

Question ID : 59445917683
Status : Answered
Chosen Option : 4

Q.12 The description of a chemical conversion process is given below.
1. Liquid tar and a gaseous stream containing H_2 , CH_4 , CO , CO_2 are normally obtained
2. It is a highly endothermic process

The conversion process is the following

- Ans
- ☒ A. Fluidized bed incineration
 - ☒ B. Incineration
 - ☒ C. Pyrolysis
 - ☒ D. Hydrolysis

Question ID : 59445917732
Status : Answered
Chosen Option : 4

Q.13 The Group index value of soil subgrade in pavement construction is 8. The subgrade soil is rated as:

- Ans ☒ A. Good
☒ B. Poor
☒ C. Fair
☒ D. Very poor

Question ID : 59445917747
Status : Answered
Chosen Option : 2

Q.14 Match the items in List 1(Method of traffic survey) with those in List 2 (Type of traffic survey), and select the correct answer using code in lists.

List 1	List 2
P. Doppler radar	1. Traffic Volume
Q. Video tape	2. Origin destination survey
R. Pneumatic tube	3. Parking Survey
S. Road side interview	4. Spot speed

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

Question ID : 59445917752
Status : Answered
Chosen Option : 1

Q.15 If $u = ax$ and $v = -ay$ gives the velocity distribution for a 2-D flow the equation of a stream line passing through the point (3,1) is:

- Ans ☒ A. $xy = 1$
☒ B. $3x + y = 0$
☒ C. $x + 3y = 0$
☒ D. $xy = 3$

Question ID : 59445917707
Status : Answered
Chosen Option : 2

Q.16 The intensity of sound wave combined with reception characteristics of ear is known as:

- Ans ☒ A. Loudness
- ☒ B. Wave length
- ☒ C. Amplitude
- ☒ D. Frequency

Question ID : 59445917738
Status : Answered
Chosen Option : 3

Q.17 An engineering survey is proposed in a highway alignment project. The survey include following stages:

- 1. Preliminary Survey
- 2. Reconnaissance
- 3. Map study
- 4. Final location & detailed Survey.

The sequential order of the stages in which the engineering survey is carried out is : (Use Codes 1 to 4 for answering)

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

Question ID : 59445917743
Status : Answered
Chosen Option : 1

Q.18 Which of the following is not the function of fish plates used in a railway track?

- Ans ☒ A. Transfer load to the ballast
- ☒ B. Maintain correct alignment
- ☒ C. Maintain the continuity of rails
- ☒ D. Provision for any expansion or contraction of rails

Question ID : 59445917741
Status : Answered
Chosen Option : 1

Q.19 Among the different ways of providing reinforcement in reinforced cement concrete beam, identify the one that does not contribute to improve the shear resistance of the beam section.

- Ans ☒ A. Bent-up reinforcement
- ☒ B. Reinforcement provided in compression zone which extend into the support
- ☒ C. Vertical or inclined stirrups
- ☒ D. Reinforcement provided in tension zone which extend into the support

Question ID : 59445917681
Status : Answered
Chosen Option : 1

Q.20 Identify the survey work carried out to generate the Desire lines in traffic engineering:

- Ans
- ☐ A. Spot speed studies
 - ☐ B. Traffic volume survey
 - ☐ C. Accident studies
 - ☒ D. Origin and destination studies

Question ID : 59445917749
Status : Answered
Chosen Option : 4

Q.21 Which of the following methods is not used for the disposal of hospital waste?

- Ans
- ☐ A. Electro pyrolysis
 - ☐ B. Incineration
 - ☒ C. Landfilling
 - ☐ D. Thermal treatment

Question ID : 59445917735
Status : Answered
Chosen Option : 2

Q.22 Lysimeter is used for the measurement of:

- Ans
- ☐ A. Interception
 - ☐ B. Evaporation
 - ☒ C. Evapotranspiration
 - ☐ D. Infiltration

Question ID : 59445917717
Status : Answered
Chosen Option : 4

Q.23 The unit in which both sedimentation and digestion process of sludge takes place simultaneously is:

- Ans
- ☐ A. Deritus tank
 - ☐ B. Digestion tank
 - ☒ C. Imhoff tank
 - ☐ D. Skimming tank

Question ID : 59445917722
Status : Answered
Chosen Option : 3

Q.24 For a sand deposit, the void ratio was determined at the loosest, densest, and natural states as 0.7, 0.3, and 0.5 respectively. The relative density of the sand deposit is:

- Ans
- ☒ A. 60%
 - ☒ B. 75%
 - ☒ C. 25%
 - ☒ D. 50%

Question ID : 59445917698
Status : Answered
Chosen Option : 4

Q.25 A map having a scale of 1 cm = 3 km, is represented as a representative fraction as:

- Ans
- ☒ A. 1 : 3000
 - ☒ B. 1 : 3000000
 - ☒ C. 1 : 300000
 - ☒ D. 1 : 30000

Question ID : 59445917754
Status : Answered
Chosen Option : 3

Q.26 Identify a secondary pollutant from the following:

- Ans
- ☒ A. Peroxy Acetyl Nitrate (PAN)
 - ☒ B. Nitrogen oxides
 - ☒ C. Hydrocarbons
 - ☒ D. Particulate matter

Question ID : 59445917730
Status : Answered
Chosen Option : 1

Q.27 Identify the one which is not an ozone layer depleting chemical?

- Ans
- ☒ A. Methyl chloride
 - ☒ B. Hydrochloric acid
 - ☒ C. Copper sulphate
 - ☒ D. Carbon tetrachloride

Question ID : 59445917731
Status : Answered
Chosen Option : 4

Q.28 In a clarifloculator unit used for water treatment the processes involved are:

- Ans
- ☒ A. Floc formation and its subsequent removal by filtration
 - ☒ B. Floc formation and its subsequent removal by screening
 - ☒ C. Floc formation and its subsequent removal by sedimentation
 - ☒ D. Removal of floating matter by sedimentation and filtration

Question ID : 59445917726

Status : Answered

Chosen Option : 1

Q.29 A plot of rainfall intensity versus time is called as:

- Ans
- ☒ A. Mass curve
 - ☒ B. Isohyet
 - ☒ C. Hyetograph
 - ☒ D. Hydrograph

Question ID : 59445917716

Status : Answered

Chosen Option : 1

Q.30 Determine the quantity of bleaching powder required for a rural water supply scheme so as to chlorinate 20000 litre of water, whose chlorine demand is 2 mg/l. Assume the bleaching powder has 50 % available chlorine.

- Ans
- ☒ A. 80 gram
 - ☒ B. 160 gram
 - ☒ C. 40 gram
 - ☒ D. 100 gram

Question ID : 59445917727

Status : Answered

Chosen Option : 1

Q.31 For the purpose of highway geometric design, the percentile speed adopted is:

- Ans
- ☒ A. 98th percentile speed
 - ☒ B. 50th percentile speed
 - ☒ C. 90th percentile speed
 - ☒ D. 85th percentile speed

Question ID : 59445917750

Status : Answered

Chosen Option : 1

Q.32 The potential energy of a system is given by the expression $PE = 10x^3 + 8x^2 - 9x$. Determine the stable equilibrium position?

- Ans
- ☒ A. $x = -0.678$ m
 - ☒ B. $x = -0.876$ m
 - ☒ C. $x = 0.3425$ m
 - ☒ D. $x = 0.423$ m

Question ID : 59445917659
Status : Answered
Chosen Option : 2

Q.33 What is the degree of indeterminacy for the beam shown in Figure?



- Ans
- ☒ A. 4
 - ☒ B. 7
 - ☒ C. 6
 - ☒ D. 3

Question ID : 59445917668
Status : Answered
Chosen Option : 1

Q.34 Which of the following shear test can be conveniently used to determine the sensitivity of the soils?

- Ans
- ☒ A. Vane shear test
 - ☒ B. Direct shear test
 - ☒ C. Triaxial compression test
 - ☒ D. Unconfined compression test

Question ID : 59445917696
Status : Answered
Chosen Option : 3

Q.35 A cantilever beam having a constant depth carries a uniformly distributed load of w per unit length over the whole span. To make the maximum bending stress at all sections of the beam to be the same, the breadth of the section at a distance x from the free end should be proportional to:

- Ans
- ☒ A. x^3
 - ☒ B. x^2
 - ☒ C. $x^{0.5}$
 - ☒ D. x

Question ID : 59445917664
Status : Answered
Chosen Option : 3

Q.36 Estimate the theoretical height of capillary rise in a fine grained soil with effective size of 0.02 mm. and void ratio 0.5. Use Terzaghi and Peck relation. Take the empirical constant as 0.3 cm^2

- Ans
- ☒ A. 0.6 m
 - ☒ B. 3 m
 - ☒ C. 1.2 m
 - ☒ D. 0.3 m

Question ID : 59445917695
Status : Answered
Chosen Option : 4

Q.37 A reinforced concrete beam is subjected to the following bending moments :
Moment due to Dead load = 40 kNm;
Moment due to live load = 60 kNm;
Moment due to Seismic load = 20 kNm.
The design bending moment for limit state of collapse is:

- Ans
- ☒ A. 180 kNm
 - ☒ B. 120 kNm
 - ☒ C. 144 kNm
 - ☒ D. 150 kNm

Question ID : 59445917682
Status : Answered
Chosen Option : 4

Q.38 In a hydraulic jump formation in an open channel, v_1 and v_2 indicate the velocity of flow just before and after jump formation. If v_c is the critical velocity for the section, identify the correct relation for hydraulic jump formation:

- Ans
- ☒ A. $v_1 > v_c$ and $v_2 < v_c$
 - ☒ B. $v_1 > v_c$ and $v_2 > v_c$
 - ☒ C. $v_1 < v_c$ and $v_2 > v_c$
 - ☒ D. $v_1 < v_c$ and $v_2 < v_c$

Question ID : 59445917713
Status : Answered
Chosen Option : 3

Q.39 A 1 : 30 model of an Ogee spillway crest records an acceleration of 1.2 m/s^2 at a certain location on the spillway. The corresponding value of acceleration (in m/s^2 units) in the prototype spillway is:

- Ans
- ☒ A. 6.57
 - ☒ B. 0.4
 - ☒ C. 1.2
 - ☒ D. 0.22

Question ID : 59445917712
Status : Answered
Chosen Option : 3

Q.40 Among the different types of soil given, identify the soil having low values of specific gravity (may fall below 2):

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

Question ID : 59445917692
Status : Answered
Chosen Option : 1

Q.41 At the plastic limit, the soil is friable (easily crushed), the toughness index of the soil is:

- Ans ☒ A. Between 1 and 2
- ☒ B. Range 2 to 3
- ☒ C. Less than 1
- ☒ D. Equal to 1

Question ID : 59445917693
Status : Answered
Chosen Option : 4

Q.42 Efflorescence of bricks is due to:

- Ans ☒ A. high silt content in brick earth
- ☒ B. soluble salts present in clay for making bricks
- ☒ C. high porosity of bricks
- ☒ D. excessive burning of bricks

Question ID : 59445917674
Status : Answered
Chosen Option : 2

Q.43 The following statements pertain to the operation of centrifugal pumps :

- S1 : Pumps in series operation allow the head to increase
S2 : Pumps in series operation increase the flow rate
S3 : Pumps in parallel operation increase the flow rate
S4 : Pumps in parallel operation allow the head to increase.

Identify the correct statement(s).

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

Question ID : 59445917711
Status : Answered
Chosen Option : 4

Q.44 Which of the following method is NOT used to determine slope and deflection at a section in loaded beam?

- Ans
- ☐ A. Double integration method
 - ☐ B. Macaulay's method
 - ☐ C. Moment area method
 - ☒ D. Rankine's method

Question ID : 59445917669
Status : Answered
Chosen Option : 4

Q.45 Water flows with a flow rate of 0.6 cumecs through an inclined pipe PQ of length 10 m length having a uniform cross-section. The end Q of the pipe is above the end P and the pipe makes an angle of 30° to the horizontal. For a pressure of 30 kN/m² at the end Q, the corresponding pressure at the end P (in kN/m² units) is : (take unit weight of water as 10 kN/m³)

- Ans
- ☐ A. 30
 - ☒ B. 80
 - ☐ C. 20
 - ☐ D. 50

Question ID : 59445917708
Status : Answered
Chosen Option : 2

Q.46 Identify the waste water treatment unit which use both aerobic and anaerobic mechanism for the removal of organic matter?

- Ans
- ☐ A. activated sludge process
 - ☐ B. Trickling filter
 - ☐ C. Oxidation ditch
 - ☒ D. Stabilization ponds

Question ID : 59445917725
Status : Answered
Chosen Option : 4

Q.47 Identify the incorrect statement about Muller Breslau principle.

- Ans
- ☐ A. It gives excellent experimental approach to determine the influence lines for indeterminate structures
 - ☐ B. It is applicable when the material is within the elastic limit and obeys Hooke's law
 - ☒ C. It is applicable only for indeterminate structures
 - ☐ D. It gives analytical method to find Influence line diagram

Question ID : 59445917671
Status : Answered
Chosen Option : 4

Q.48 The duty at various locations in a canal irrigated system is indicated as follows: Duty at the head of main canal is DM, Duty at the head of distributary is DD, Duty at the head of water course to field is DW. Arrange the duty of water in the increasing order. (smallest to the largest)

- Ans ☒ A. DM, DD, DW
- ☐ B. DM, DW, DD
- ☐ C. DW, DD,DM
- ☐ D. DD, DW, DM

Question ID : 59445917719
Status : Answered
Chosen Option : 3

Q.49 Tinnitus is due to:

- Ans ☐ A. Light pollution
- ☐ B. Land pollution
- ☐ C. Water pollution
- ☒ D. Sound pollution

Question ID : 59445917737
Status : Answered
Chosen Option : 2

Q.50 To have effective control of water supply different types of valves are used in the distribution system. Match the items in List 1 (Purpose to be served) with those form List 2 (Types of Valves), using the codes given:

List 1	List 2
M. Remove air from the pipe line	1. Gate Valve
N. Limit the flow of water to single direction	2. Pilot Valve
O. Reduce high inlet pressure to lower inlet pressure	3. Release Valve
P. Stop the flow of water in the pipeline	4. Check Valve

- Ans ☐ A. M- 4; N- 2; O- 3 ; P- 1
- ☐ B. M- 3; N- 2; O- 1 ; P- 4
- ☐ C. M- 2; N- 1; O- 3 ; P- 4
- ☒ D. M- 3; N- 4; O- 2 ; P- 1

Question ID : 59445917728
Status : Answered
Chosen Option : 4

Q.51 The ratio of rate change of discharge of an outlet to rate of change of discharge of the parent channel is stated as:

- Ans
- ☒ A. Efficiency of outlet
 - ☒ B. Drowning ratio of outlet
 - ☒ C. Flexibility of outlet
 - ☒ D. Setting of outlet

Question ID : 59445917718
Status : Answered
Chosen Option : 3

Q.52 According to IS 8009, Part1(1976), the recommended value of rigidity factor for computing the settlement of a rigid footing is:

- Ans
- ☒ A. 1.5
 - ☒ B. 0.5
 - ☒ C. 1.2
 - ☒ D. 0.8

Question ID : 59445917699
Status : Answered
Chosen Option : 4

Q.53 As per IS800:2007, under working stress design, the condition to be satisfied for members subjected to both axial tension and bending is : $\frac{f_t}{f_{at}} + \frac{f_{bty}}{f_{abty}} + \frac{f_{btz}}{f_{abtz}}$ (where notations f_t and f_{at} : actual and permissible tensile stress ; f_{bt} : actual bending stress ; f_{abt} : permissible tensile stress under bending only; y and z major and minor axis)

- Ans
- ☒ A. Greater than 1 and less than 1.5
 - ☒ B. Greater than 1
 - ☒ C. Less than or equal to 1
 - ☒ D. Greater than 1.5

Question ID : 59445917689
Status : Answered
Chosen Option : 1

Q.54 Flexibility matrix method is also known as:

- Ans
- ☒ A. Displacement method
 - ☒ B. Equilibrium method
 - ☒ C. Compatibility method
 - ☒ D. Stiffness method

Question ID : 59445917667
Status : Answered
Chosen Option : 1

Q.55 A steel built up column is subjected to an axial force of 2000 kN. The lacing system has to be designed for resisting a transverse shear of:

- Ans ☒ A. 50 kN
☒ B. 20 kN
☒ C. 30 kN
☒ D. 60 kN

Question ID : 59445917688
Status : Answered
Chosen Option : 1

Q.56 The standard penetration test (SPT) conducted on fine sand below the water table gave the average blow count as 33. What is the corrected SPT value?

- Ans ☒ A. 24
☒ B. 26.5
☒ C. 21.5
☒ D. 29

Question ID : 59445917704
Status : Answered
Chosen Option : 1

Q.57 The principle of virtual work states that, for a body to be in equilibrium, the virtual work should be:

- Ans ☒ A. Zero
☒ B. maximum
☒ C. Any value between zero and one
☒ D. minimum

Question ID : 59445917656
Status : Answered
Chosen Option : 2

Q.58 Which of the following method is NOT used for finding deflection of determinate beams?

- Ans ☒ A. Castiglino's method
☒ B. Moment area method
☒ C. Displacement method
☒ D. Macaulay's method

Question ID : 59445917672
Status : Answered
Chosen Option : 3

Q.59 If k is the height of roughness projection and δ the thickness of laminar sub layer, for a pipe surface to be hydraulically smooth, condition is:

- Ans
- ☒ A. $0.25 < k/\delta < 0.5$
 - ☒ B. $k/\delta < 0.25$
 - ☒ C. $1.0 < k/\delta < 1.5$
 - ☒ D. $0.5 < k/\delta < 1.0$

Question ID : 59445917709
Status : Answered
Chosen Option : 2

Q.60 The following details pertain to the crossing of a canal and a drain. Bed level of Canal = +131.3 m; Full Supply depth of Canal = 1.6 m; Bed level of Drain = +129.5 m; High Flood Level of drain = +131.6 m. The suitable type of Cross drainage work is:

- Ans
- ☒ A. Syphon aqueduct
 - ☒ B. Aqueduct
 - ☒ C. Superpassage
 - ☒ D. Canal Syphon

Question ID : 59445917721
Status : Answered
Chosen Option : 4

Q.61 A single bay single storey portal frame has a hinged left support and fixed right support. It is loaded with a uniformly distributed load of w/m length on the beam. Which one of the following statements is true with regard to the deformation of the frame? Assume all the members have equal length.

- Ans
- ☒ A. It would sway to the left side
 - ☒ B. Data provided is insufficient
 - ☒ C. It would sway to the right side
 - ☒ D. It would not sway at all.

Question ID : 59445917673
Status : Answered
Chosen Option : 4

Q.62 A trapezoidal plate with sides a and b parallel and horizontal ($b > a$) is held vertically under a liquid surface with either the side a or b at the top. The total pressure is:

- Ans
- ☒ A. higher when side a is at top
 - ☒ B. same irrespective of whether side a or b is at top
 - ☒ C. data insufficient
 - ☒ D. higher when side b is at top

Question ID : 59445917710
Status : Answered
Chosen Option : 1

Q.63 Optical plummet is used in a total station:

- Ans
- ☒ A. For accurate leveling at a station
 - ☒ B. For precision setting
 - ☒ C. For accurate centering over a station
 - ☒ D. For taking observations without a target

Question ID : 59445917755
Status : Answered
Chosen Option : 3

Q.64 If an angular distortion of $\frac{1}{300}$ is allowed between columns 7.5 m apart, what is the corresponding value of differential settlement?

- Ans
- ☒ A. 25 mm
 - ☒ B. 12.5 mm
 - ☒ C. 40 mm
 - ☒ D. 50 mm

Question ID : 59445917705
Status : Answered
Chosen Option : 2

Q.65 Methemoglobinemia found in infants is due to excessive presence of the following pollutant in drinking water:

- Ans
- ☒ A. Sulphates
 - ☒ B. Nitrates
 - ☒ C. Carbonates
 - ☒ D. Fluoride

Question ID : 59445917723
Status : Answered
Chosen Option : 2

Q.66 For a cohesive soil, with cohesion c , co-efficient of active earth pressure k_a , and unit weight of soil γ , the critical depth of vertical cut can be expressed as:

- Ans
- ☒ A. $\frac{2c}{\gamma\sqrt{k_a}}$
 - ☒ B. $\frac{c}{\gamma\sqrt{k_a}}$
 - ☒ C. $\frac{3c}{\gamma\sqrt{k_a}}$
 - ☒ D. $\frac{4c}{\gamma\sqrt{k_a}}$

Question ID : 59445917706
Status : Answered
Chosen Option : 1

Q.67 Match the items in List 1 (Functions of control structures) with those in List 2 (Type of Control structures) and select the correct answer using codes:

List 1	List 2
P. Control of discharge	1. Canal drop
Q. Control of bed grade	2. Canal escape
R. Control of Full supply level	3. Canal cross regulator
S. Control of flow depth	4. Canal outlets

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

Question ID : 59445917720
Status : Answered
Chosen Option : 2

Q.68 Known the load, warping and frictional stresses on a cement concrete pavement slab as 220 N/mm², 300 N/mm² and 10 N/mm² respectively, the critical combination of stresses during summer season is:

- Ans**
- ☒ A. 510 N/mm²
 - ☒ B. 530 N/mm²
 - ☒ C. 300 N/mm²
 - ☒ D. 520 N/mm²

Question ID : 59445917746
Status : Answered
Chosen Option : 2

Q.69 For a continuous slab of 3 m × 5 m size, the minimum overall depth of slab to satisfy vertical deflection limits, with mild steel reinforcement is:

- Ans**
- ☒ A. 108 mm
 - ☒ B. 86 mm
 - ☒ C. 94 mm
 - ☒ D. 75 mm

Question ID : 59445917684
Status : Answered
Chosen Option : 3

Q.70 In the case of reinforced concrete column footings, the minimum value of nominal cover to be provided for meeting the durability requirement is:

- Ans ☒ A. 50 mm
- ☐ B. 40 mm
- ☐ C. 25 mm
- ☐ D. 60 mm

Question ID : 59445917679
Status : Answered
Chosen Option : 2

Q.71 Identify the factor that does not affect the bearing capacity of a purely cohesive soil.

- Ans ☐ A. Density of soil
- ☐ B. Depth of footing
- ☐ C. Angle of shearing resistance of soil
- ☒ D. Width of footing

Question ID : 59445917701
Status : Answered
Chosen Option : 4

Q.72 A circular shaft of diameter d is subjected to two types of loading conditions as in Case 1 and Case 2.

Case 1 : A torque of T .

Case 2 : Bending moment M .

The ratio of maximum bending stress to maximum shear stress developed for the cases is:

- Ans ☐ A. $\frac{M}{T}$
- ☒ B. $\frac{2M}{T}$
- ☐ C. $\frac{M}{2T}$
- ☐ D. $\frac{2T}{M}$

Question ID : 59445917666
Status : Answered
Chosen Option : 3

Q.73 The test intended to study the resistance of aggregates to weathering action is:

- Ans ☐ A. Crushing test
- ☐ B. Impact test
- ☒ C. Soundness test
- ☐ D. Abrasion test

Question ID : 59445917744
Status : Answered
Chosen Option : 3

Q.74 While doing the project planning of a Construction project, using PERT, it is intended to identify the variance of the project. This can be done by:

- Ans
- ☒ A. Sum of squares of the total floats of all activities in the project
 - ☒ B. Sum of variance of the activities along critical path of the project
 - ☒ C. Sum of variance of all activities of the project
 - ☒ D. Sum of squares of free floats of all activities along the critical path of the in the project.

Question ID : 59445917678
Status : Answered
Chosen Option : 2

Q.75 While designing a highway, identify the factor which is not taken into account for the computation of breaking distance?

- Ans
- ☒ A. Speed
 - ☒ B. Gradient
 - ☒ C. Co-efficient of friction
 - ☒ D. Reaction time of driver

Question ID : 59445917740
Status : Answered
Chosen Option : 2

Q.76 The following statements pertain to the occurrence of negative skin friction in piles.

- S1: It is developed when the pile is driven through a recently deposited clay layer.
S2: It is developed when the pile is driven through a layer of dense sand.
S3: It is developed due to a sudden drawdown of the water table.

Which of the above statement(s) is/are incorrect?

- Ans
- ☒ A. S2 only
 - ☒ B. S3 only
 - ☒ C. S2 and S3
 - ☒ D. S1 and S3

Question ID : 59445917703
Status : Answered
Chosen Option : 1

Q.77 The free mean speed of a roadway is found to be 80 km/hour. Under stopped condition the average spacing between vehicles is 8 m. Determine the capacity flow (in vehicle/hour/lane)?

- Ans
- ☒ A. 2500
 - ☒ B. 2000
 - ☒ C. 2825
 - ☒ D. 5000

Question ID : 59445917751
Status : Answered
Chosen Option : 1

Q.78 A prismatic bar of rectangular cross- section is suspended freely from the ceiling of a roof. If all dimensions of the bar are doubled, then the total elongation produced by its own weight will increase by:

- Ans
- ☒ A. 8 times
 - ☒ B. 4 times
 - ☒ C. 2 times
 - ☒ D. 6 times

Question ID : 59445917661
Status : Answered
Chosen Option : 3

Q.79 For a soil with porosity n , void ratio e , water content w , degree of saturation S , dry unit weight γ_d , specific gravity of soil G , unit weight of water γ_w , identify the relation which is incorrect.

- Ans
- ☒ A. $e = \frac{n}{1+n}$
 - ☒ B. $\gamma_d = \frac{G\gamma_w}{1+e}$
 - ☒ C. $w = \frac{Se}{G}$
 - ☒ D. $n = \frac{e}{1+e}$

Question ID : 59445917690
Status : Answered
Chosen Option : 1

Q.80 Hydrologic flood routing methods make use of:

- Ans
- ☒ A. Equation of motion only
 - ☒ B. Energy equation only
 - ☒ C. Both momentum and continuity equations
 - ☒ D. Equation of continuity only

Question ID : 59445917715
Status : Answered
Chosen Option : 3

Q.81 Match the items under List 1 (Field situation) with those in List2 (Type of pile foundation) and select the answer using the codes given in the lists.

List 1	List 2
M. To resist lateral loads	1. Sheet piles
N. Top retain soil filling	2. Compaction piles
O. To densify loose soils	3. Point bearing piles
P. To transfer heavy loads to strong stratum below a weak stratum.	4. Batter piles

- Ans
- ☒ A. M – 1, N- 3, O-2, P-4
 - ☒ B. M – 4, N- 3, O-2, P-1
 - ☒ C. M – 3, N- 1, O-4, P-2
 - ☒ D. M – 4, N- 1, O-2, P-3

Question ID : 59445917702
Status : Answered
Chosen Option : 2

Q.82 Which of the following does not correspond to the recommendations of IRC: 37-1970, for pavement thickness determination by California Bearing Ratio (CBR) method?

- Ans
- ☒ A. The top 50 cm of subgrade should be compacted at least upto 95to 100 % of Proctor density.
 - ☒ B. For the design of the subgrade soil sample should be compacted at Optimum moisture content to proctor density.
 - ☒ C. CBR tests are to be conducted in-situ in field
 - ☒ D. At least 3 samples should be tested on each type of soil at the same density and moisture content.

Question ID : 59445917745
Status : Answered
Chosen Option : 4

Q.83 The percentage increase in the design bond stress in limit state, for deformed bars in tension (conforming to IS 1786), with respect to plain bars in tension is:

- Ans
- ☒ A. 35
 - ☒ B. 60
 - ☒ C. 20
 - ☒ D. 50

Question ID : 59445917680
Status : Answered
Chosen Option : 2

Q.84 Name the test conducted on bitumen using the Pensky-Martens closed cup apparatus?

- Ans ☒ A. Flash and Fire point test
- ☒ B. Specific gravity test
- ☒ C. Viscosity test
- ☒ D. Softening point test

Question ID : 59445917748
Status : Answered
Chosen Option : 3

Q.85 The major and minor principal stresses on a two dimensional element are 10 MPa and - 6 MPa respectively. The maximum shear stress on the element is:

- Ans ☒ A. 10 MPa
- ☒ B. 16 MPa
- ☒ C. 8 MPa
- ☒ D. 11.7 MPa

Question ID : 59445917663
Status : Answered
Chosen Option : 3

Q.86 A triangular direct runoff hydrograph due to a 6 hour storm in a catchment has a time base of 100 hour, and peak of flow of 40 m³/s. The catchment is 180 km². Determine the peak flow value of 6 hour unit hydrograph of this catchment ? (in m³/s units)

- Ans ☒ A. 10
- ☒ B. 20
- ☒ C. 25
- ☒ D. 30

Question ID : 59445917714
Status : Answered
Chosen Option : 4

Q.87 The major constituent gases produced from a land fill site are:

- Ans ☒ A. Ammonia and Hydrogen
- ☒ B. Carbon dioxide and methane
- ☒ C. Hydrogen sulphide and oxygen
- ☒ D. Carbon monoxide and nitrogen

Question ID : 59445917733
Status : Answered
Chosen Option : 1

Q.88 The shape of Prohibitory sign used as Traffic sign is:

- Ans
- ☒ A. Octagonal
 - ☒ B. Circular
 - ☒ C. Rectangular
 - ☒ D. Triangular

Question ID : 59445917753
Status : Answered
Chosen Option : 4

Q.89 The plume that occurs under strong wind velocity, when the lapse rate is near adiabatic condition (neutral), and the plume touches the ground at greater horizontal distance is:

- Ans
- ☒ A. Coning flume
 - ☒ B. Fanning plume
 - ☒ C. Looping flume
 - ☒ D. Lofting plume

Question ID : 59445917729
Status : Answered
Chosen Option : 2

Q.90 Among the different modes of failures given, identify the one which is not applicable to a steel tension member:

- Ans
- ☒ A. Rupture
 - ☒ B. Block shear
 - ☒ C. Crippling
 - ☒ D. Yielding

Question ID : 59445917687
Status : Answered
Chosen Option : 3

Q.91 The principle of conservation of angular momentum for a rigid body is applicable when:

- Ans
- ☒ A. Internal forces add to zero
 - ☒ B. External forces add to zero
 - ☒ C. Resultant external moment is zero
 - ☒ D. External forces and moments are absent

Question ID : 59445917660
Status : Answered
Chosen Option : 4

Q.92 As per IS 800: 2007, for a web (having d - depth of web, t_w – thickness of web, ε-yield stress ratio) without stiffeners, the resistance to shear buckling shall be verified using the condition:

- Ans ☒ A. $d/t_w > 67 \epsilon$
- ☒ B. $d/t_w < 67 \epsilon$
- ☒ C. $d/t_w > 45 \epsilon$
- ☒ D. $d/t_w > 37 \epsilon$

Question ID : 59445917686
Status : Answered
Chosen Option : 2

Q.93 Sand drains are proposed for construction of an embankment over a highly compressible clay layer for a railway line. Identify the incorrect statement pertaining to it.

- Ans ☒ A. Consolidation is due to vertical drainage rather than horizontal radial drainage
- ☒ B. Sand drains have inability to control secondary compression in soil.
- ☒ C. Post construction settlement is greatly reduced.
- ☒ D. Sand drains installed in the clay accelerate the consolidation

Question ID : 59445917694
Status : Answered
Chosen Option : 1

Q.94 Match the item in List 1 (Property of Cement) with those under List 2 (Method for conduct of test) using the codes in the list.

List 1	List 2
P. Soundness Test	1. Vicat’s Apparatus test
Q. Fineness	2. Le-Chatelier apparatus
R. Setting time	3. Briquette test
S. Tensile strength	4. Air permeability method

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

Question ID : 59445917675
Status : Answered
Chosen Option : 2

Q.95 The following table gives the data on four activities A, B, C, D, E of a project.

Activity	(Start- End) week number	Resource needed/week
A	4 - 7	4
B	6 - 13	7
C	8 - 17	5
D	12 - 19	4
E	10 - 21	8

Find the maximum total resources load in any week, and the corresponding week:

- Ans
- ☒ A. 28 ; (11-12) week
 - ☒ B. 20 ; (12-13) week
 - ☒ C. 24 ; (12-13) week
 - ☒ D. 24 ; (14-15) week

Question ID : 59445917677
Status : Answered
Chosen Option : 3

Q.96 The permitted noise level in a silent zone during day time and night time are respectively:

- Ans
- ☒ A. 50 dB and 40 dB
 - ☒ B. 65 dB and 55 dB
 - ☒ C. 55 dB and 50 dB
 - ☒ D. 70 dB and 60 dB

Question ID : 59445917736
Status : Answered
Chosen Option : 1

Q.97 The slope of e versus $\log \sigma$ plot for a soil mass gives : (notations : e – void ratio, σ – effective stress)

- Ans
- ☒ A. Co-efficient of volume compressibility
 - ☒ B. Co-efficient of consolidation
 - ☒ C. Compression index
 - ☒ D. Co-efficient of permeability

Question ID : 59445917691
Status : Answered
Chosen Option : 3

Q.98 In mechanics, a dynamical problem can be solved as a statically using:

- Ans
- ☒ A. Work energy method
 - ☒ B. Newton's third law
 - ☒ C. D'Alembert's principle
 - ☒ D. Impulse and momentum method

Question ID : 59445917658
Status : Answered
Chosen Option : 4

Q.99 The following statements (S1, S2, and S3) pertain to BOD and COD of waste water.

S1: The 5 day BOD value of waste water indicates only Carbonaceous BOD.

S2: The 5 day BOD value of waste water indicates both Carbonaceous and nitrogenous BOD.

S3: COD gives an idea about the nature of organic matter whether biodegradable or bio-refractory organic matter.

Identify the incorrect statement(s).

Ans

-  A. S1 only
-  B. S1 and S2
-  C. S1 and S3
-  D. S2 and S3

Question ID : 59445917724

Status : Answered

Chosen Option : 1

Q.100 In assessing the heating value of municipal solid waste, the preferred range of carbon to nitrogen (C/N) ratio, in the waste is :

Ans

-  A. 10-20
-  B. 36-50
-  C. 20-35
-  D. 1-10

Question ID : 59445917734

Status : Answered

Chosen Option : 3