PROENGR.IN

STUDY MATERIAL FOR MINE MANAGER CERTIFICATE & PSU EXAMS

- Mine Management, Legislation & Safety
- Mine Machinery & Electricity
- Mine Ventilation And Environmental Hazards
- Winning & Working
- Mine Surveying

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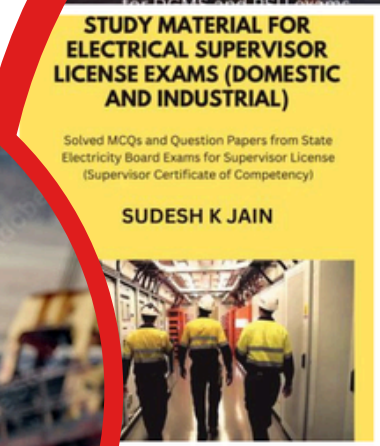
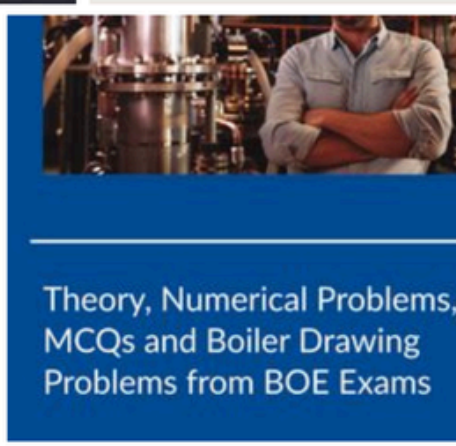
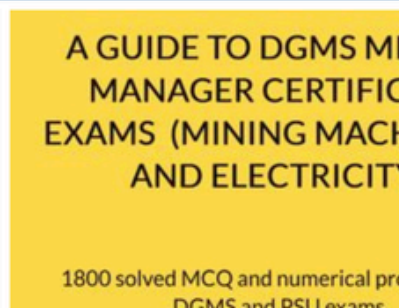








Coal India Limited 27th Feb 2020

Participant ID	1461121000104
Participant Name	
Test Center Name	
Test Date	27/02/2020
Test Time	8:00 AM - 11:00 AM
Subject	Mining

Section : **General Knowledge and Awareness**

Q.1 Where is India's two operational Satellite Launch Pads located?

Ans
- ✗ A. Jalandhar
- ✗ B. Mumbai
- ✗ C. Rajkot
- ✓ D. Sriharikota

India's two operational satellite launch pads are located at the Satish Dhawan Space Centre (SDSC) SHAR in Sriharikota, Andhra Pradesh.

They are specifically known as the First Launch Pad (FLP) and the Second Launch Pad (SLP).

Question ID : **59445917373**
Status : **Answered**
Chosen Option : **4**

Q.2 Who among the following will only be provided with SPG cover in India?

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

Question ID : **59445917386**
Status : **Answered**
Chosen Option : **4**

Q.3 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. Arvind Singh
- ✗ D. Uday Shankar

The first Indian to be nominated as the General Vice President of the International Organisation Development Association (IODA) is Dr. Vinaya Shetty from Mumbai.

She was elected to this position and, notably, became the first Indian and the first Asian to hold this role since the organization was founded in 1986. Her election to the post was announced in late 2019

Question ID : **59445917392**
Status : **Marked For Review**
Chosen Option : **2**

Q.4 **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. ICEDASH and ATITHI

✘ B. DCOI

✘ C. ICAM

✘ D. Cyber security

Question ID : **59445917395**
Status : **Marked For Review**
Chosen Option : **1**

Q.5 **For which of the following mineral India is mainly depend on imports?**

Ans

✘ A. Limestone

✔ B. Mercury

✘ C. Mica

✘ D. Lead

Question ID : **59445917383**
Status : **Answered**
Chosen Option : **2**

Q.6 **_____is the most cultivated crop of Kerala.**

Ans

✘ A. Mustard

✘ B. Wheat

✔ C. Cow Pea

✘ D. Chick Pea

Cow pea is the most cultivated pulse crop in Kerala. Known locally as payar in Malayalam, it is a versatile Kharif crop grown throughout the year. It is often cultivated as a floor crop within coconut plantations.



Question ID : **59445917390**
Status : **Marked For Review**
Chosen Option : **4**

Q.7 **The Amazon rainforest is spread over in _____countries.**

Ans

✘ A. 8

✔ B. 9

✘ C. 3

✘ D. 5

1. Brazil (which holds the largest share, about 60%)
2. Peru
3. Colombia
4. Bolivia
5. Venezuela
6. Ecuador
7. Guyana
8. Suriname
9. French Guiana (which is an overseas department of France)

Question ID : **59445917381**
Status : **Marked For Review**
Chosen Option : **1**

Q.8 Who among the following has become the first Indian cricketer and second in world cricket to complete 100 T-20 Internationals?

Ans

✗ A. MS Dhoni

✗ B. Ravindra Jadeja

✓ C. Rohit Sharma

✗ D. Virat Kohli

Question ID : **59445917376**
Status : **Marked For Review**
Chosen Option : **1**

Q.9 Which of the following country will host "No Money for Terror" conference in 2020?

Ans

✓ A. India

✗ B. Sri Lanka

✗ C. China

✗ D. Nepal

Question ID : **59445917389**
Status : **Answered**
Chosen Option : **1**

Q.10 Phulkari is the famous handicraft of which state?

Ans

✗ A. Sikkim

✗ B. Madhya Pradesh

✓ C. Punjab

✗ D. Maharashtra

Phulkari (which means "flower work") is the traditional and famous embroidery handicraft of Punjab. It is characterized by vibrant, intricate floral and geometric patterns, and is an integral part of Punjabi culture, especially worn as dupattas or shawls during festivals and weddings.



Question ID : **59445917377**
Status : **Marked For Review**
Chosen Option : **1**

Q.11 Which of the following General Insurance Company has launched "Farmitra" a mobile app for farmers?

Ans

✗ A. United India Insurance

✗ B. The Oriental Insurance

✓ C. Bajaj Allianz General Insurance

✗ D. Tata AIG Insurance

Question ID : **59445917384**
Status : **Marked For Review**
Chosen Option : **4**

Q.12 Who was the founder of Sayyid Dynasty?

Ans

✗ A. Sikandar Lodhi

✗ B. Nasir-ud-din Mahmud

✗ C. Jalal-ud-din Khilji

✓ D. Khizar Khan

Question ID : **59445917380**
Status : **Marked For Review**
Chosen Option : **2**

Q.13 Who appoints the Vice President of India?

Ans

✓ A. The Electoral College of India

✗ B. Supreme Court

✗ C. Prime Minister

✗ D. President

The Vice-President is elected by an Electoral College consisting exclusively of members of both Houses of Parliament (the Lok Sabha and the Rajya Sabha), which includes both elected and nominated members . State Legislative Assemblies (MLAs) do not participate in this election.

Question ID : **59445917385**
Status : **Answered**
Chosen Option : **1**

Q.14 Which of the following country will host the 2023 Men's Hockey World Cup?

Ans

✗ A. Spain

✗ B. New Zealand

✓ C. India

✗ D. China

Question ID : **59445917375**
Status : **Marked For Review**
Chosen Option : **3**

Q.15 _____speed is measured by the Anemometer.

Ans

✗ A. Cyclone

✗ B. Earthquake

✗ C. Current

✓ D. Wind



Question ID : **59445917382**
Status : **Marked For Review**
Chosen Option : **3**

Q.16 Who had introduced 'Doctrine of Lapse' in India?

Ans

✔ A. Lord Dalhousie

✘ B. Lord Canning

✘ C. Lord Hastings

✘ D. Lord Auckland

The Doctrine of Lapse was a policy of annexation introduced by Lord Dalhousie, who served as the Governor-General of India from 1848 to 1856.

Under this doctrine, any princely state under British paramountcy would be annexed by the British East India Company if the ruler died without a direct male biological heir.

Question ID : **59445917379**
Status : **Answered**
Chosen Option : **1**

Q.17 Nabakalebara is the festival of which of the following state?

Ans

✘ A. Karnataka

✘ B. Kerala

✘ C. Andhra Pradesh

✔ D. Odisha

Nabakalebara is a major and unique festival celebrated in Odisha, specifically at the famous Jagannath Temple in Puri.



Question ID : **59445917378**
Status : **Marked For Review**
Chosen Option : **4**

Q.18 Which of the following is the first Indian Regional Satellite?

Ans

✔ A. IRNSS-1A

✘ B. INSAT-3D

✘ C. YOUTHSAT

✘ D. GSAT-7

Question ID : **59445917374**
Status : **Marked For Review**
Chosen Option : **4**

Q.19 Which of the following Company has developed Mac Operating System?

Ans

✘ A. Microsoft

✔ B. Apple

✘ C. IBM Corp

✘ D. HP

Question ID : **59445917394**
Status : **Answered**
Chosen Option : **2**

Q.20 When is the World Science Day for Peace and Development celebrated every year?

Ans

A. 30th August

B. 10th November

C. 4th November

D. 11th October

World Science Day for Peace and Development is celebrated annually on 10 November . This international day was proclaimed by UNESCO in 2001 to highlight the important role of science in society and the need to engage the public in emerging scientific issues .

Question ID : **59445917372**
Status : **Marked For Review**
Chosen Option : **2**

Q.21 Who has been appointed as Chairman of the Airport Authority of India?

Ans

A. Rajnish Kumar

B. Ashok Malik

C. Amit Khare

D. Arvind Singh

Question ID : **59445917388**
Status : **Marked For Review**
Chosen Option : **1**

Q.22 Who is the President of FICCI?

Ans

A. Uday Shankar

B. Sandip Somany

C. Sangita Reddy

D. Rashesh Shah

Question ID : **59445917393**
Status : **Marked For Review**
Chosen Option : **3**

Q.23 Which of the following can be used as a coolant in a nuclear reactor?

Ans

A. Nitrogen

B. Liquid Sodium

C. Hydrogen

D. Carbon monoxide

Liquid sodium is an excellent coolant used in fast breeder nuclear reactors due to its exceptional thermal conductivity and ability to absorb and transfer large amounts of heat without moderating (slowing down) the neutrons, which is essential for fast neutron reactors.

Question ID : **59445917371**
Status : **Marked For Review**
Chosen Option : **1**

Q.24 Sheikh Khalifa Bin Zayed Al Nahyan has been elected as the President of which of the following country?

Ans

✗ A. Kuwait

✗ B. Qatar

✓ C. UAE

✗ D. Bahrain

Question ID : **59445917387**
Status : **Marked For Review**
Chosen Option : **1**

Q.25 Which of the following is the oldest oilseed crop in India?

Ans

✗ A. Mustard

✗ B. Flaxseed

✓ C. Sesame

✗ D. Rapeseed

Question ID : **59445917391**
Status : **Marked For Review**
Chosen Option : **3**

Section : **Numerical Ability**

Q.1 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. 6.8

✗ B. 7.6

✗ C. 2.4

✓ D. 4.2

Step 1: Let C's income = ₹100
Step 2: B's income is 40% less than C's
So, B = 100 − 40% of 100 = 100 − 40 = ₹60
Step 3: A's income is 60% more than B's
So, A = 60 + 60% of 60 = 60 + 36 = ₹96
Step 4: Now compare C and A
C = 100, A = 96
C is more than A by = 100 − 96 = ₹4
Step 5: Percentage by which C is more than A
= (4 / 96) × 100
= 4.1666...
≈ 4.2% (correct to one decimal place)

Question ID : **59445917450**
Status : **Answered**
Chosen Option : **4**

Q.2 If a six-digit number $3x9\,z\,8\,y$ is divisible by 7, 11, 13, then the average value of x, y, z is:

Ans

✗ A. 23/3

✗ B. 31/3

✗ C. 8

✓ D. 20/3

A 6–digit number repeated its three digit is divisible by 7, 11 and 13.
For example 345345, 125125, 387387 etc.
Now, 3x9z8y can be written as 389389
Comparing on we get
x = 8, z = 3 and y = 9
Sum of x + y + z = 8 + 3 + 9 = 20
Average of x, y and z = 20/3

Question ID : **59445917446**
Status : **Marked For Review**
Chosen Option : **3**

Q.3 **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. 4:5

✗ B. 1:4

✗ C. 6:1

✓ D. 1:6

Question ID : **59445917461**
Status : **Answered**
Chosen Option : **4**

Q.4 **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. 1000

✗ B. 2000

✗ C. 4000

✗ D. 3000

Efficiency of A = 4
Efficiency of B = 3
Efficiency of A + B + C = 8
Efficiency of C = 8 – 4 – 3 = 1
Efficiency ratio of A, B and C = 4 : 3 : 1
4 + 3 + 1 = 8 unit
8 unit = 8000
⇒ 1 unit = 1000
∴ Money paid to C = 1 unit = 1000.

Question ID : **59445917464**
Status : **Marked For Review**
Chosen Option : **1**

Q.5 **The third term of an arithmetic progression is 6. Then the sum of first five terms is:**

Ans

✗ A. 15

✗ B. 35

✓ C. 30

✗ D. 25

Third term of an AP = 6
a + 2d = 6
Sum of first five term
⇒ a + a + d + a + 2d + a + 3d + a + 4d
⇒ 5a + 10d
⇒ 5 (a + 2d)
⇒ 5 × 6
⇒ 30

Question ID : **59445917469**
Status : **Answered**
Chosen Option : **3**

Q.6 **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. 15100

✗ C. 14750

✗ D. 14550

Ratio of A, B, C and D in the biggining = 6x : 7x : 9x : 16x
Ratio of A, B, C and D in the last = 1 : 4 : 2 : 5
According to the question
(6x – 600)/(9x + 600) = 1/2
⇒ 12x – 1200 = 9x + 600
⇒ 12x – 9x = 1200 + 600
⇒ 3x = 1800
⇒ x = 600
Sum of A, C and B = 6x + 9x + 7x = 22x
= 22 x 600 = 13200

Question ID : **59445917454**
Status : **Marked For Review**
Chosen Option : **2**

Q.7 **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. 65.25%

✗ B. 67.5%

✓ C. 56.57%

✗ D. 57.79%

Copper from A = 7 x (4/9) = 28/9 units
Copper from B = 4 x (7/9) = 28/9 units
Total copper = (28/7) + (28/9) = 56/9 units
Total weight of new alloy = 7 + 4 = 11 units.
% of copper = [(56/9)/11] = 56.56%

Question ID : **59445917460**
Status : **Answered**
Chosen Option : **3**

Q.8 **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. 13.7

✗ B. 17.2

✓ C. 15.1

✗ D. 16.8

Let the income of woman be Rs. 100
Savings of woman = Rs. 100 × (18/100) = Rs. 18
Expenditure of woman = 100 – 18 = 82
New income of woman = 100 × (115/100) = 115
New expenditure of woman = 82 + 82 × 21.6/100 = 82 + 17.712 = 99.712
New savings = 115 – 99.712 = 15.288
Her savings decreased by 18 – 15.288 = 2.712
Her savings decreased by (in %) = 2.712/18 × 100 = 15.1%

Question ID : **59445917451**
Status : **Answered**
Chosen Option : **4**

Q.9 **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. 7500

✓ B. 9750

✗ C. 8250

✗ D. 8775

Let the speed of train be x km/hr
distance is same.
[x (x – 15)/15] × 45 = [x (x – 60)/15] × 72
⇒ (x – 15) 5 = (x + 60) 2
⇒ 5x – 75 = 2x + 120
⇒ 3x = 195
⇒ x = 65 km/hr

Question ID : **59445917462**
Status : **Marked For Review**
Chosen Option : **1**

Q.10 **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. 23.5%

✓ C. 17.6%

✗ D. 15.8%

Let there are 100 goods (articles) cost of each article be Rs. 1
Total cost of 100 articles = Rs. 100
MP of 100 articles = 100 × 140/100 = Rs. 140
30% of 100 = 30
Remaining = 100 – 30 = 70
60% of 70 = 42
Rest = 100 – 30 – 42 = 28
Total SP of 100 articles
30 × (140/100) + 42 × (140/100) × (80/100)
+ 28 × (140/100) × (60/100)
= 112.56
Profit = 112.56 – 100 = 12.56
Profit percentage = 12.56/100 × 100 = **12.56%**

Question ID : **59445917453**
Status : **Marked For Review**
Chosen Option : **4**

Q.11 **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. 55%

✗ B. 60%

✓ C. 57.5%

✗ D. 62.5%

Question ID : **59445917459**
Status : **Answered**
Chosen Option : **3**

Q.12 **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. -21

✗ B. 42

✗ C. 0

✓ D. -42

Quantity of acid in 25 litres mixture = 25 × (40/100) = 10
Quantity of acid in 35 litres mixture = 35 × (70/100) = 24.5
Total quantity of acid = 24.5 + 10 = 34.5 litres
Total quantity of mixture = 35 + 25 = 60
Percentage of acid in 60 litres mixture = (34.5/60) × 100 = 57.5%

Question ID : **59445917470**
Status : **Marked For Review**
Chosen Option : **3**

Q.13 **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 groun**

Ans

✓ A. $9\sqrt{3}$

✗ B. $\frac{9\sqrt{3}}{2}$

✗ C. 18

✗ D. $9\sqrt{2}$

In ΔABC

$\angle C = 180^\circ - 30^\circ - 90^\circ \Rightarrow 60^\circ$

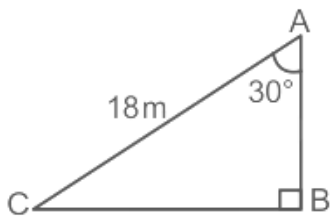
$\angle C = 60^\circ$

Now

$\sin 60^\circ = \frac{AB}{AC}$

$\frac{\sqrt{3}}{2} = \frac{AB}{18}$

$\Rightarrow AB = 9\sqrt{3}$



Question ID : **59445917465**
Status : **Marked For Review**
Chosen Option : **1**

Q.14 **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. 8000

✗ B. 7550

✗ C. 7700

✓ D. 7020

Principal amount $P = \frac{42135}{1+0.06} + \frac{42135}{(1+0.06)^2}$ = ₹ 77250

Calculate the total amount paid back over the 2 years:
Total Repayment = 2 X 42135 = Rs. 84270
Subtract the borrowed principal from the total repayment to determine the total interest:
Total Interest = Total Repayment — P
Total Interest = 84270 — 77250 = Rs. 7020

Question ID : **59445917458**
Status : **Answered**
Chosen Option : **2**

Q.15 **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. 49.8

✗ B. 47.8

✓ C. 48.5

✗ D. 57.5

Question ID : **59445917466**
Status : **Marked For Review**
Chosen Option : **3**

Q.16 If $x^4 - 79x^2 + 1 = 0$, then a value of $x^3 + x^{-3}$ can be:

Ans

✗ A. 720

✓ B. 702

✗ C. 798

✗ D. 789

x^4 - $79^2$2 + 1 = 0

Concept used: $(x + 1/x)^2 = x^2 + 1/x^2 + 2$

Calculation: $x^4 - 79x^2 + 1 = 0$

Divide by x^2 we get

$x^2 - 79 + 1/x^2 = 0 \Rightarrow x^2 + 1/x^2 = 79$

$x^2 + 1/x^2 + 2 = 79 + 2$

$\Rightarrow (x + 1/x)^2 = 81 \Rightarrow x + 1/x = 9$

Now: $(x + 1/x)^3 = x^3 + 1/x^3 + 3\,(x + 1/x)$

$\Rightarrow 9^3 = x^3 + 1/x^3 + 3 \times 9$

$\Rightarrow x^3 + 1/x^3 = 729 - 27 = 702$

Question ID : **59445917467**
Status : **Marked For Review**
Chosen Option : **1**

Q.17 **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%

SI = P × r × t/100

According to the question

(P1 × R1 × T)/100 + (P2 × R2 × T)/100 = Total interest

$\Rightarrow$ (9000 × r × 5)/100 + [13500 × (r – 2) × 5]/100 = 9337.50

$\Rightarrow$ r = 9.5

Question ID : **59445917457**
Status : **Marked For Review**
Chosen Option : **4**

Q.18 **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. 61.5

✗ C. 61.4

✓ D. 59.6

Number of girls = 60 x (60/100) = 36
Number of boys = 60 - 36 = 24
Total weight of girls = 36 X 58 kg = 2088 kg
Total weight of boys = 24 X 62 kg = 1488 kg
Total weight of class = 2088 + 1488 = 3576 kg
Average weight of class = 3576/60 = 59.6 kg

Question ID : **59445917448**
Status : **Marked For Review**
Chosen Option : **3**

Q.19 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. $\sqrt{47}$

✗ B. $5\sqrt{47}$

✓ C. $6\sqrt{47}$

✗ D. $3\sqrt{47}$

Question ID : **59445917455**
Status : **Marked For Review**
Chosen Option : **1**

Q.20 **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. 53.4375

✗ B. 58.5135

✗ C. 49.5225

✓ D. 47.4375

Average of 17 numbers = 48
Sum of 17 numbers = 48 × 17 = 816
The average of first 9 numbers = 45
Sum of first 9 numbers = 45 × 9 = 405
Average of last 9 numbers = 52
Sum of last 9 numbers = 52 × 9 = 468
9th number = 405 + 468 – 816 = 57
Sum of 16 numbers = 816 – 57 = 759
Average of 16 numbers = 759/16 = 47.4375

Question ID : **59445917449**
Status : **Marked For Review**
Chosen Option : **2**

Q.21 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. 33

✓ B. 22

✗ C. 36

✗ D. 27

Let the efficiency of B be 4
Efficiency of A = 4 × (7/4) = 7
Total work = (7 + 4) × 21 = 231
100/3 % of the total work = 231 × 200/300 = 154
A alone can complete 200/3 % of the work in = 154/7 = 22 days

Question ID : **59445917463**
Status : **Marked For Review**
Chosen Option : **2**

Q.22 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. 2

✗ B. -1

✗ C. 0

✗ D. -2

$x^4 + x^2y^2 + y^2 = 29$ (1)
$x^2 - xy + y^2 = 5$ (2)
As we know,
$\Rightarrow (x^4 + x^2y^2 + y^2)$
$= (x^2 - xy + y^2)(x^2 + xy + y^2)$
$\Rightarrow x^2 + xy + y^2 = 29/5 = 5.8$
$\Rightarrow x^2 + xy + y^2 = 5.8$ (3)
Subtract equation (3) from equation (2)
$\Rightarrow 2xy = 0.8 \Rightarrow xy = 0.4 \Rightarrow 5xy = 2$

Question ID : **59445917468**
Status : **Answered**
Chosen Option : **4**

Q.23 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. 0.721
- ✗ C. 0.129
- ✗ D. 0.656

Question ID : **59445917447**
Status : **Marked For Review**
Chosen Option : **3**

Q.24 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. 8
- ✗ B. 35
- ✓ C. 21
- ✗ D. 12

$\sqrt{12 - 2\sqrt{35}} + \sqrt{8 + 2\sqrt{15}} = \sqrt{a} + \sqrt{b}$

$\Rightarrow \sqrt{\left(\sqrt{7}\right)^2 + \left(\sqrt{5}\right)^2 - 2 \times \sqrt{7} \times \sqrt{5}} + \sqrt{\left(\sqrt{5}\right)^2 + \left(\sqrt{3}\right)^2 + 2 \times \sqrt{5} \times \sqrt{3}} = \sqrt{a} + \sqrt{b}$

$\Rightarrow \sqrt{\left(\sqrt{7} - \sqrt{5}\right)^2} + \sqrt{\left(\sqrt{5} + \sqrt{3}\right)^2} = \sqrt{a} + \sqrt{b}$

$\Rightarrow (\sqrt{7} - \sqrt{5}) + (\sqrt{5} + \sqrt{3}) = \sqrt{a} + \sqrt{b}$
$\Rightarrow \sqrt{7} + \sqrt{3} = \sqrt{a} + \sqrt{b}$
Comparing on
$\Rightarrow a = 3$ and $b = 7$
$\Rightarrow ab = 7 \times 3 = 21$

Question ID : **59445917456**
Status : **Marked For Review**
Chosen Option : **3**

Q.25 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. 4% loss
- ✗ B. 7% loss
- ✗ C. 5% gain
- ✗ D. 6% gain

Total SP of both articles = 1836 × 2 = 3672
CP of first articles = 1836 × (100/120) = 1530
CP of second articles = 1836 × (100/80) = 2295
Total CP = 2295 + 1530 = 3825
Profit = 3825 – 3672 = 153
Profit percentage = 153/3825 × 100 = 4%

Question ID : **59445917452**
Status : **Answered**
Chosen Option : **1**

Section : **Reasoning**

Q.1 **Choose the Venn diagram from the given options which represents the correct relationship amongst the following classes:**

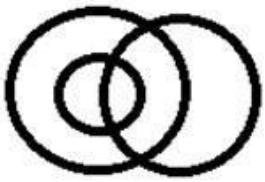
Pen, Chair, Stationery

Ans

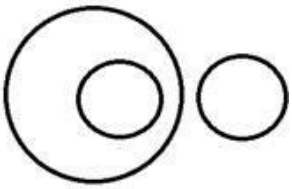
✗ A.



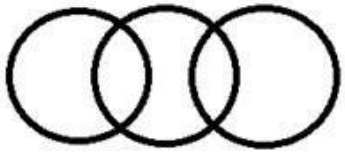
✗ B.



✓ C.



✗ D.



Question ID : **59445917543**
Status : **Answered**
Chosen Option : **3**

Q.2 **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. 4

✗ B. 6

✓ C. 8

✗ D. 3

For a cube of (n × n × n) painted on all sides which is uniformly cut into smaller cubes of dimension (1 × 1 × 1), number of cubes that will not have paint on any of its sides is equal to $(n - 2)^3$.

Here, n = 4

So, $(n - 2)^3 = (4 - 2)^3 = 8$
Hence, 8 cube will not have paint on any of its sides.

Question ID : **59445917526**
Status : **Answered**
Chosen Option : **1**

Q.3 **Which number will replace the question mark (?) in the following series.**

2, 7, 14, 23, ?, 47

Ans

✗ A. 37

✗ B. 30

✗ C. 32

✓ D. 34

2 + 5 = 7
7 + 7 = 14
14 + 9 = 23
23 + 11 = 34
34 + 13 = 47

Question ID : **59445917535**
Status : **Answered**
Chosen Option : **4**

Q.4 **Rearrange the given letters to form meaningful words and select the option which is different from the other three words.**

Ans

- ✗ A. EOGARN
- ✗ B. RPOATIC
- ✓ C. SEHCWA
- ✗ D. PLEAP

Question ID : **59445917524**
Status : **Marked For Review**
Chosen Option : **2**

Q.5 **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. PREDICT
- ✗ B. PRECICT
- ✗ C. RESTFIT
- ✗ D. RESTICT

EOGARN → ORANGE
RPOATIC → APRICOT
SEHCWA → CASHEW
PLEA → APPLE
The odd one out is CASHEW.

Question ID : **59445917522**
Status : **Answered**
Chosen Option : **2**

Q.6 **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. 20
- ✗ C. 17
- ✓ D. 19

ARDENT: 6 letters x 2 + 1 = 13
CANOE: 5 letters x 2 + 1 = 11
REPRESENT: 9 letters x 2 + 1 = 19

Question ID : **59445917539**
Status : **Marked For Review**
Chosen Option : **3**

Q.7 **Select the pair of words from the given options that shares a similar relationship as the given pair.**

Shark : Fish

Ans

- ✗ A. Iguana: Amphibian
- ✗ B. Bat: Bird
- ✗ C. Dolphin: Fish
- ✓ D. Whale : Mammal

The relationship in the given pair (Shark : Fish) is Animal: Biological Class. A shark is biologically classified as a fish.

Whale : Mammal perfectly mirrors this exact relationship because a whale is biologically classified as a mammal.

Question ID : **59445917523**
Status : **Answered**
Chosen Option : **4**

Q.8 **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. 56

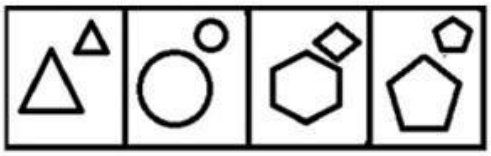
✗ C. 21

✓ D. 53

The logic is:
94 × 18 = 44
(9 × 4) + (1 × 8) = 36 + 8 = 44
89 × 23 = 78
(8 × 9) + (2 × 3) = 72+ 6 = 78
Similarly,
75 × 36 = ?
(7 × 5) + (3 × 6) = 35 + 18 = 53

Question ID : **59445917544**
Status : **Answered**
Chosen Option : **4**

Q.9 Select the figure which is different from the other three alternatives.



Ans

✗ A. B

✗ B. A

✗ C. D

✓ D. C

Question ID : **59445917533**
Status : **Answered**
Chosen Option : **4**

Q.10 **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.

✓ B. The case is to be referred to the Director of the Institute,

✗ C. The candidate is not to be selected.

✗ D. The candidate is to be selected under the relaxed criterion.

Her application should be referred to the Director of the Institution.

Analysis of the Candidate
Academic Marks (Criterion i): She secured 79%, which is less than the required 85%. However, since she won 3 Inter-University debate competitions, she satisfies the exception condition (a) allowing her case to be referred to the Director.University

Test (Criterion ii): She secured 92% in the foreign university selection test, which meets the requirement of at least 90%.Age

(Criterion iii): Born on December 17, 1997, she is exactly 22 years and 15 days old as of January 1, 2020. This fits perfectly within the required age bracket (21 to 25 years

Question ID : **59445917529**
Status : **Answered**
Chosen Option : **2**

Q.11 **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

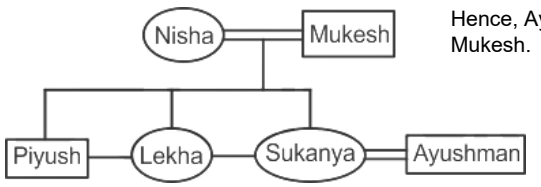
✗ A. Brother

✓ B. Son in law

✗ C. Brother in law

✗ D. Son

Symbol in Diagram	Meaning
○	Female
□	Male
=	Married couple
—	Siblings
|	Difference of a generation



Hence, Ayushman is son-in-law of Mukesh.

Question ID : **59445917531**
Status : **Answered**
Chosen Option : **2**

Q.12 **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 I and IV follow.
✘ B. All the conclusion follow.
✘ C. Only conclusions I and II follow.
✘ D. Only conclusions II and III follow.

Question ID : **59445917541**
Status : **Answered**
Chosen Option : **3**

Q.13 **उस िवक का चयन कर िजसका चौथे पद से ठीक वही सबध है, जो सबध दू सरे पद का पहले से है।**

सघष : यु : ुिट : ?

Ans
✘ A. wोध
✘ B. भूल
✘ C. असावधानी
✔ D. बड़ी ुिट

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

Q.14 **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. 28 - 195
✘ B. 38 - 361
✘ C. 18 - 81
✘ D. 22 - 121

Question ID : **59445917545**
Status : **Answered**
Chosen Option : **1**

Q.15 **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. MONETARY

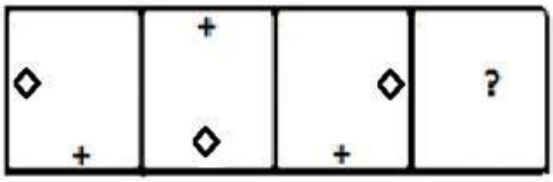
✗ B. AERODUCT

✗ C. EDUCATOR

✓ D. DEMOCRACY

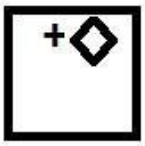
Question ID : **59445917540**
Status : **Answered**
Chosen Option : **4**

Q.16 Select the figure that will come next in the following figure series.

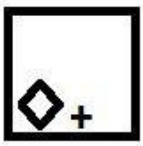


Ans

✗ A. 

✓ B. 

✗ C. 

✗ D. 

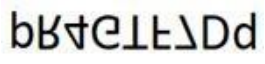
Question ID : **59445917536**
Status : **Answered**
Chosen Option : **2**

Q.17 Which of the answer figures is the exact mirror image of the given problem figure when the mirror is held at the right side?



Ans

✔ A. 

B. 

C. 

D. 

Question ID : **59445917525**
Status : **Answered**
Chosen Option : **1**

Q.18 **In a certain language, if PERSIST is written as 7591912, then how is ANCESTOR is coded in the same language?**

Ans

✔ A. 15351269

✘ B. 14351259

✘ C. 15351059

✘ D. 14351268

Question ID : **59445917538**
Status : **Answered**
Chosen Option : **2**

Q.19 **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. Both I or II follow.

✔ D. Only II follows.

Question ID : **59445917528**
Status : **Answered**
Chosen Option : **4**

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 410

✓ B. Rs 307.50

✗ C. Rs 246.50

✗ D. Rs 369

Question ID : **59445917534**
Status : **Answered**
Chosen Option : **1**

Q.21 **A + B means 'A is the father of B'; A − B means 'A is the wife of B', A × B means 'A is brother of B', A ÷ B means 'A is the daughter of B' . If R − V × T ÷ W, then how is R related to W?**

Ans

✗ A. Son in law

✗ B. Mother

✗ C. Mother in law

✓ D. Daughter in law

Question ID : **59445917532**
Status : **Answered**
Chosen Option : **4**

Q.22 **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. Kartik

✗ B. Gagan

✗ C. Aarav

✗ D. Tarun

Question ID : **59445917542**
Status : **Answered**
Chosen Option : **1**

Q.23 **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

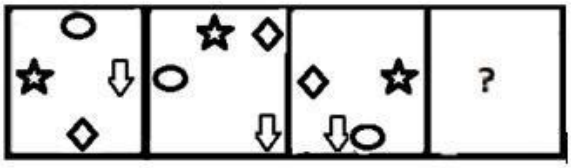
✓ B. Z and X

✗ C. W and X

✗ D. Z and Y

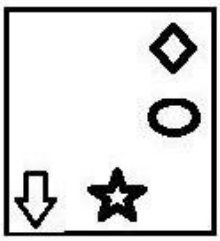
Question ID : **59445917527**
Status : **Answered**
Chosen Option : **2**

Q.24 Select the figure that will come next in the following figure series.

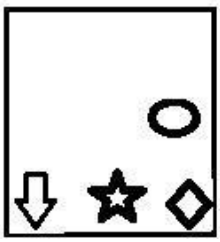


Ans

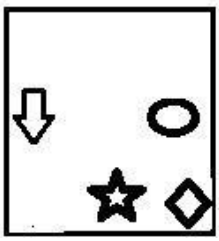
✗ A.



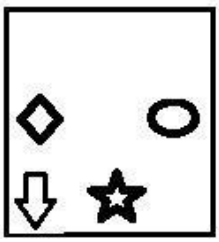
✓ B.



✗ C.

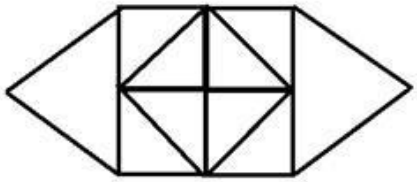


✗ D.



Question ID : **59445917537**
Status : **Answered**
Chosen Option : **2**

Q.25 How many triangles are there in the given figure?



Ans

✔ A. 14

✘ B. 15

✘ C. 16

✘ D. 12

Question ID : **59445917530**
Status : **Answered**
Chosen Option : **1**

Section : **General English**

Q.1 Choose the correct order of sentences to form a meaningful paragraph.

Ans

✘ A. 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.

✘ B. 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.

✔ C. 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.

✘ D. 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.

Question ID : **59445917615**
Status : **Marked For Review**
Chosen Option : **4**

Q.2 **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. stir emotionally

✘ B. beat up

✘ C. scolded

✘ D. drive away

Question ID : **59445917608**
Status : **Answered**
Chosen Option : **1**

Q.3 **Choose the correct structure to complete the sentence.**

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

Ans

✔ A. Had he not resigned

✘ B. Unless he had not resigned

✘ C. He had not resigned

✘ D. He had resigned

Question ID : **59445917611**
Status : **Answered**
Chosen Option : **2**

Q.4 **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. weaker or diluted

✘ C. stronger

✘ D. difficult to implement

Question ID : **59445917609**
Status : **Answered**
Chosen Option : **2**

Q.5 **Choose the correct spelling from the options given.**

Ans

✘ A. accomodete

✔ B. accommodate

✘ C. accomadate

✘ D. acommodate

Question ID : **59445917606**
Status : **Answered**
Chosen Option : **2**

Q.6 **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. compassion
- ✗ B. concern
- ✗ C. submission
- ✓ D. pride

Question ID : **59445917604**
Status : **Answered**
Chosen Option : **2**

Q.7 **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. but
- ✗ D. because

Question ID : **59445917610**
Status : **Answered**
Chosen Option : **2**

Q.8 **Complete the sentence with the appropriate word.**

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

Ans
- ✓ A. cautioned
- ✗ B. taught
- ✗ C. pleased
- ✗ D. helped

Question ID : **59445917612**
Status : **Answered**
Chosen Option : **1**

Q.9 **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. astrology
- ✓ D. foresight

Question ID : **59445917600**
Status : **Answered**
Chosen Option : **2**

Q.10 Choose the correct word(s) to fill in the blank.

Mohan Lal _____asleep while watching TV last night.

Ans

✗ A. falls

✓ B. fell

✗ C. had fallen

✗ D. has fallen

Question ID : **59445917598**
Status : **Answered**
Chosen Option : **2**

Q.11 Complete the sentence with the appropriate word.

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

Ans

✓ A. competition

✗ B. increase

✗ C. decrease

✗ D. finance

Question ID : **59445917613**
Status : **Answered**
Chosen Option : **1**

Q.12 Choose the word that best replaces the words highlighted in the sentence.

Our teacher has the art of explaining something clearly**.**

Ans

✗ A. argumentation

✗ B. description

✗ C. narration

✓ D. exposition

Question ID : **59445917601**
Status : **Answered**
Chosen Option : **3**

Q.13 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. educated workers than Brazil

✗ B. have

✗ C. India and Sri Lanka

✓ D. many large number of

Question ID : **59445917596**
Status : **Answered**
Chosen Option : **4**

Q.14 **Choose the correct words to fill in the blanks.**

The prize money was shared _____all the members _____the football team.

Ans

✗ A. between; in

✗ B. by; among

✗ C. by; from

✓ D. among; of

Question ID : **59445917599**
Status : **Answered**
Chosen Option : **4**

Q.15 **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. fail

✓ B. ignore

✗ C. decline

✗ D. abandon

Question ID : **59445917602**
Status : **Answered**
Chosen Option : **2**

Q.16 **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 should, you can try every day to take a walk.

✓ B. If you can, you should try to take a walk every day.

✗ C. If you should take a walk every day, you can try to.

✗ D. If you can try to, you should take a walk every day.

Question ID : **59445917614**
Status : **Answered**
Chosen Option : **2**

Q.17 **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. coin collector was willing to pay

✗ B. a huge sum for the rare coin

✗ C. because it was

✓ D. one kind

Question ID : **59445917597**
Status : **Answered**
Chosen Option : **2**

Q.18 **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.19 **Choose the correct spelling from the options given.**

Ans

✗ A. inagurate

✗ B. enaugarate

✗ C. innagarate

✓ D. inaugurate

Question ID : **59445917607**
Status : **Answered**
Chosen Option : **4**

Q.20 **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. receding

✓ B. preceding

✗ C. succeeding

✗ D. proceeding

Question ID : **59445917605**
Status : **Answered**
Chosen Option : **2**

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

Ans

✔ A. sometimes

✘ B. rarely

✘ C. always

✘ D. often

Question ID : **59445918658**
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 : 22

Q.22 Choose the most appropriate option.

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

Ans

✗ A. We meet so many people in our lives and we cannot remember all of them.

✓ B. Human relationships have no monetary value.

✗ C. We should not care for the people who help us.

✗ D. We should appreciate those who help us in life.

Question ID : **59445918659**
Status : **Answered**
Chosen Option : **2**

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 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 did not at all want to take Ratan with him.

✗ B. The Postmaster did not like Ratan, so he left her.

✓ C. Ratan was very much attached to the postmaster.

✗ D. The Postmaster treated Ratan only as a servant.

Question ID : **59445918661**
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 best option that expresses the tone of the passage.

Ans

✗ A. dismissive

✗ B. casual

✓ C. sentimental

✗ D. serious

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 : 25

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

Ans

✗ A. He wrote verses at times.

✗ B. Ratan nursed him like his mother when he fell ill.

✗ C. He talked to Ratan about his family.

✓ D. When Ratan asked him to take her with him, he laughed at the idea.

Question ID : **59445918657**
Status : **Answered**
Chosen Option : **2**

Section : **Domain Knowledge**

Q.1 **Calculate the length of the line AB having co-ordinates (2, 4), (6, 7).**

Ans

✗ A. 25

✗ B. 3

✓ C. 5

✗ D. 20

Question ID : **59445918098**
Status : **Answered**
Chosen Option : **3**

Q.2 **50dB + 50dB =_____.**

Ans

✓ A. 53 dB

✗ B. 100 dB

✗ C. 0 dB

✗ D. 50 dB

Question ID : **59445918145**
Status : **Answered**
Chosen Option : **1**

Q.3 **A 5 km long duct of 500mm diameter is closed at both ends and pressurized by compressed-air to a gauge pressure of 500 Pa. The pressure fell to 250 Pa after 20 seconds. Calculate the rate of leakage while barometric pressure is 101 kPa.**

Ans

✓ A. 0.0001 $m^3 s^{-1}$

✗ B. 0.00025 $m^3 s^{-1}$

✗ C. 0.00015 $m^3 s^{-1}$

✗ D. 0.0002 $m^3 s^{-1}$

Question ID : **59445918076**
Status : **Answered**
Chosen Option : **2**

Q.4 **As per Indian Electricity Rules, where hand-held portable apparatus is used, the voltage should not exceed:**

Ans

✗ A. 250 V

✗ B. 75 V

✗ C. 30 V

✓ D. 125 V

Question ID : **59445918134**
Status : **Answered**
Chosen Option : **4**

Q.5 **Calculate the natural ventilating pressure in a mine if, Depth of the mine is 400m, Pit-bottom barometer reading is 101 kPa, Pit-top barometer reading is 99.5 kPa, Average temperature in DC shaft is 305 K and Average temperature in UC shaft is 308 K.**

Ans

✗ A. 23.7 Pa

✗ B. 55 Pa

✓ C. 43.7 Pa

✗ D. 13.7 Pa

$$NVP = \frac{gDB}{287.1} \cdot \frac{T_u - T_d}{T_u T_d} x10^3 \; Pascal$$

where
D = depth of downcast shaft (m)
B = barometric pressure in kPa
T_u = mean temperature in UC shaft (K)
T_d = mean temperature in DC shaft (K)

$$NVP = \frac{9.81(400)[(101+99.5)/2]}{287} \cdot \left(\frac{308-305}{308x305}\right)$$

= 43.7 Pa

Question ID : **59445918077**
Status : **Answered**
Chosen Option : **2**

Q.6 **In a coal mine the depth of working is 200 m from the surface, width of galleries 3 m, height of galleries 3 m and distance of square pillars between centers of bord is 22.5 m. What is strength of the pillar?**

Ans

✗ A. 128.53 kg/cm^2

✗ B. 138.97 kg/cm^2

✗ C. 142.05 kg/cm^2

✓ D. 139.97 kg/cm^2

Question ID : **59445918105**
Status : **Answered**
Chosen Option : **3**

Q.7 **Identify the correct sequence for the rock mass:**

Ans

✗ A. Shear Strength< Tensile Strength< Uniaxial Compressive Strength

✓ B. Tensile Strength < Shear Strength < Uniaxial Compressive Strength

✗ C. Tensile Strength < Uniaxial Compressive Strength < Shear Strength

✗ D. Uniaxial Compressive Strength < Shear Strength< Tensile Strength

Question ID : **59445918142**
Status : **Answered**
Chosen Option : **1**

Q.8 **During Brazilian test, a rock specimen of diameter 5 cm, and height 5 cm, failed at a compression load of 19.6 kN. The indirect tensile strength of the specimen is:**

Ans

✓ A. 5 MPa

✗ B. 2.5 MPa

✗ C. 25 kPa

✗ D. 0.5 kPa

Question ID : **59445918111**
Status : **Answered**
Chosen Option : **2**

Q.9 **A standard pitot- static tube placed at the center of 500mm diameter circular duct records a velocity pressure of 300 Pa. Calculate the quantity of air flowing in the duct if the air temperature 301 K and density of air 1.2 kg m^{-3}. Assume the air to be dry and the method factor is 0.8**

Ans

✗ A. 3 m^3/s

✗ B. 4.5 m^3/s

✗ C. 4 m^3/s

✓ D. 3.5 m^3/s

PV = 300 Pa
Q_{air} = ?
T = 301 K
K = 0.8
From $P = (1/2)\rho V^2$
$300 = (1/2)(1.2)V^2$
V = 22.36 m/s
Q = KAV
$= 0.8 \times (\pi D^2/4)V$
$= 0.8 \times (3.14 \times 0.5^2/4) \times 22.36$
$= 3.5\ m^3/s$

Question ID : **59445918079**
Status : **Answered**
Chosen Option : **3**

Q.10 **What is the dB of a threshold of hearing?**

Ans

✗ A. 50 dB

✗ B. 100 dB

✓ C. 0 dB

✗ D. 10 dB

Question ID : **59445918146**
Status : **Answered**
Chosen Option : **2**

Q.11 **The main purpose of bulk sampling of the coal is _____.**

Ans

✗ A. To study the volatile contain

✗ B. To study the carbon content

✓ C. To study the wash ability

✗ D. To study the method of formation

Question ID : **59445918151**
Status : **Answered**
Chosen Option : **1**

Q.12 **Which of the following apparatus, equipment is not recommended to keep at rescue room?**

Ans

✗ A. Smoke helmets

✗ B. Breathing apparatus

✓ C. Multi gas Detector

✗ D. Reviving apparatus

Question ID : **59445918137**
Status : **Answered**
Chosen Option : **4**

Q.13 The temperature in the upcast shaft & downcast shaft are 40° C & 30° C respectively. Shaft is 350 m deep. Find the height of motive column?

Ans

✗ A. 15

✓ B. 11

✗ C. 13

✗ D. 9

Question ID : **59445918068**
Status : **Answered**
Chosen Option : **2**

Q.14 Which model applies deductive reasoning of mathematical theory to solve a model?

Ans

✗ A. Static Model

✓ B. Analytical Model

✗ C. Dynamic Model

✗ D. Numerical Model

Question ID : **59445918154**
Status : **Answered**
Chosen Option : **4**

Q.15 Which of the following is used as oxidizing agent in an explosive?

Ans

✗ A. Magnesium Carbonate

✗ B. Charcoal

✓ C. Ammonium Nitrate

✗ D. Aluminum

Question ID : **59445918123**
Status : **Answered**
Chosen Option : **3**

Q.16 Rotation of impeller inside the pump forces water to enter in the suction pipe. It is effected due to:

Ans

✗ A. Revolution

✗ B. Reduction

✗ C. None of the given options

✓ D. Suction

Question ID : **59445918057**
Status : **Answered**
Chosen Option : **3**

Q.17 **If the observed back sight and fore sight are x_1 and x_2. The correction back sight on A will be equal to x_1-y_1, where y_1= D_1 tan i°. The correct fore sight on B will be equal to x_2-y_2 where, y_2 = D_2 tan i°. Then what is the correction difference in level between A and B, if D_1 = D_2?**

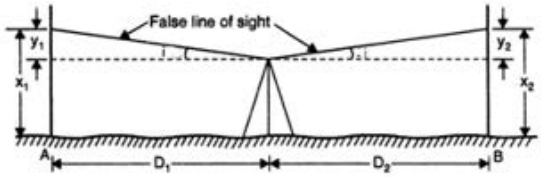
Ans

✗ A. x_2

✗ B. $x_2 + x_1$

✗ C. x_1

✓ D. $x_1 - x_2$



Correct difference in level between A and B

$(x_1 - x_2) + (D_2 \tan i^0 - D_1 \tan i^0) = (x_1 - x_2)$ if $D_1 = D_2$

Question ID : **59445918089**
Status : **Answered**
Chosen Option : **2**

Q.18 **How can you reduce the resistance developed in a ventilation duct?**

Ans

✗ A. By using a duct having corrugated internal surface

✓ B. Using a large diameter duct

✗ C. By using the duct of very high length

✗ D. Increasing the flow of air through the duct

$R = KPL/A^3$
Since A is in the denominator and raised to the power of 3, even a small increase in diameter causes a large reduction in resistance.

Question ID : **59445918078**
Status : **Answered**
Chosen Option : **1**

Q.19 **Find the magnetic declination at a place if the magnetic bearing of the sun at noon is 188°?**

Ans

✓ A. 8° W

✗ B. 4° W

✗ C. 8° E

✗ D. 4° E

At noon, the sun is exactly on the geographical meridian. Hence, the true bearing of the sun at noon is zero or 180° depending upon whether it is to the North of the place or to the South of the place. Since the magnetic bearing of the sun is 1880, the true bearing will be 180°.
Now , True bearing = Magnetic bearing + Declination
180 = 188 +Declination
or Declination = - 80
A negative value indicates that the magnetic north lies to the West of true north. Therefore, the magnetic declination is 8° W.

Question ID : **59445918082**
Status : **Answered**
Chosen Option : **3**

Q.20 **A company producing bearing plates for rock bolts has the selling price Rs. 20/unit and the variable cost has Rs. 12/unit. If the total fixed cost is Rs. 5,60,000, then the break-even output units of bearing plates is:**

Ans

✗ A. 28000

✗ B. 45500

✓ C. 70000

✗ D. 17500

Question ID : **59445918115**
Status : **Answered**
Chosen Option : **3**

Q.21 Crown Pillar is:

Ans

✗ A. On the side of the stope

✓ B. At the top of the stope

✗ C. At the base

✗ D. Just above the ore drawing crosscuts

Question ID : **59445918130**
Status : **Answered**
Chosen Option : **4**

Q.22 Which of the Fire Extinguisher can be used for Electrical fires?

Ans

✗ A. Water type

✓ B. CO_2 type

✗ C. Foam type

✗ D. Automatic

Carbon dioxide is a non-conductive gas that displaces oxygen and cools the fire. It leaves no residue, making it ideal for electrical fires, switchgear, motors, and electronic equipment.

Question ID : **59445918135**
Status : **Answered**
Chosen Option : **2**

Q.23 A system consists of four elements X, Y, Z and F which are connected functionally in a parallel configuration. The individual reliability of the elements is 0.80, 0.82, 0.85 and 0.90 respectively. Calculate the reliability of the system.

Ans

✓ A. 0.999

✗ B. 0.498

✗ C. 0.602

✗ D. 0.750

Question ID : **59445918153**
Status : **Answered**
Chosen Option : **3**

Q.24 An equipment cost Rs. 8,00,000 today and has a service life of 15 years. The salvage value at the end of 15 years is Rs. 2,00,000. What will be the value at the end of 10 years?

Ans

✓ A. 12.25

✗ B. 16.6

✗ C. 10.50

✗ D. 8.75

Question ID : **59445918116**
Status : **Answered**
Chosen Option : **3**

Q.25 Find the error in feet for rough leveling for reconnaissance or preliminary surveys?

Ans

✗ A. $0.02\times\sqrt{M}$

✓ B. $0.4\times\sqrt{M}$

✗ C. $2\times\sqrt{M}$

✗ D. $0.01\times\sqrt{M}$

Question ID : **59445918085**
Status : **Answered**
Chosen Option : **4**

Q.26 Modulus of elasticity of rock is the ratio of:

Ans

✗ A. Strain to Applied area

✗ B. Failure Load to Applied area

✓ C. Load Stress to Strain

✗ D. Axial displacement/Lateral displacement

Question ID : **59445918140**
Status : **Answered**
Chosen Option : **3**

Q.27 Burning of methane with a blue flame producing C & D gas. C and D are given by:

Ans

✓ A. $CO_2 + H_2O$

✗ B. $CO_2 + CH_4$

✗ C. $CO_2 + CO$

✗ D. $CO_2 + N_2$

Complete combustion of methane (CH_4) occurs when there is sufficient oxygen.
The reaction is:
$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$
Methane burns with a blue flame (indicating complete combustion).

Question ID : **59445918073**
Status : **Answered**
Chosen Option : **1**

Q.28 Grab sampling consists in _____.

Ans

✗ A. picking pieces of coal only

✓ B. picking pieces of ore at random to make up a sample

✗ C. picking pieces of ore in a grid fashion

✗ D. picking pieces of ore at one place only

Question ID : **59445918152**
Status : **Answered**
Chosen Option : **2**

Q.29 **A district of an underground mine is ventilated by 40 m^3/s. Water gauge across the district is 30mm. If the quantity has to be reduced to 25m^3/s by installing a regulator in the return of the district, calculate the size of the regulator.**

Ans

✗ A. 4.44 m^2

✗ B. 5.1 m^2

✗ C. 3.33 m^2

✓ D. 2.22 m^2

$P = 30\ mm \times 9.8 = 294\ Pa$

$R_{initial} = P/Q^2 = 294/40^2 = 0.18\ Ns^2m^{-8}$

$R_{final} = 294/25^2 = 0.47\ Ns^2m^{-8}$

$\therefore R_{regulator} = 0.47 - 0.18 = 0.29\ Ns^2m^{-8}$

Now,

$A = 1.2/\sqrt{R_{regulator}}$

$= 1.2/\sqrt{0.29}$

$= 2.22\ m^2$

Question ID : **59445918070**
Status : **Answered**
Chosen Option : **2**

Q.30 **Find the scale at elevation point if the values of focal length, height of station and the height of mean sea level are given by 23 cm, 76 cm and 20 cm.**

Ans

✓ A. 0.41 cm

✗ B. 4 cm

✗ C. 11.44 cm

✗ D. 4.11 cm

$S = f/(H - h)$

$= 23/(76 - 20) = 0.41$

Question ID : **59445918096**
Status : **Answered**
Chosen Option : **2**

Q.31 **Which of the following instruments can be used for locating inaccessible points?**

Ans

✓ A. Box sextant

✗ B. Vibrating sextant

✗ C. Nautical sextant

✗ D. Sounding sextant

Question ID : **59445918099**
Status : **Answered**
Chosen Option : **1**

Q.32 **Manhole should be provided along the haulage road at every 'A' meter distance. A is given by:**

Ans

✓ A. 20

✗ B. 30

✗ C. 50

✗ D. 15

Question ID : **59445918136**
Status : **Answered**
Chosen Option : **3**

Q.33 The area of working face broken per drill hole is termed as:

Ans

✗ A. Drilling factor

✓ B. Blasting factor

✗ C. Powder factor

✗ D. Drillability

Question ID : **59445918121**
Status : **Answered**
Chosen Option : **3**

Q.34 A mining industry has the following total cost and total revenue functions:

Total cost = TC = 50 + 100q – $6q^2$ + 1/3 q^3
Total revenue = TR = 64q
Where q is the output of mine in ton/day

The profit will be maximized for what level of production?

Ans

✗ A. 10

✗ B. 4

✓ C. 6

✗ D. 8

Question ID : **59445918118**
Status : **Answered**
Chosen Option : **1**

Q.35 Which of the following is not the criteria that should be considered to decide the places where air velocity in underground mines to be measured?

Ans

✗ A. Roadways should be away from bends, junction & free from obstructions

✓ B. Resistance of the roadway must be fairly high

✗ C. Roadways should have uniform cross section & preferably straight

✗ D. The cross section of roadways should be such that the area can be easily calculated

Question ID : **59445918069**
Status : **Answered**
Chosen Option : **4**

Q.36 What are water soluble inorganic chemicals?

Ans

✗ A. Compounds of synthetic metals

✗ B. Compounds of non-metals

✗ C. Compounds of pure metals

✓ D. Compounds of toxic metals

Question ID : **59445918148**
Status : **Answered**
Chosen Option : **1**

Q.37 What percentage of (CO formed/ O_2 absorbed) ratio indicates existence of heating?

Ans

✗ A. 3%

✗ B. 2%

✗ C. 0.5%

✓ D. 1%

Question ID : **59445918139**
Status : **Answered**
Chosen Option : **3**

Q.38 If five forces are acting on the single particle and having an angle of 72° between each and are collinear, then:

Ans

✗ A. The net force acting on the body is vertical

✗ B. The net force acting on the body is horizontal

✗ C. The net force acting on the body is at an angle of 45°

✓ D. The net force acting on the body is zero

Question ID : **59445918143**
Status : **Answered**
Chosen Option : **2**

Q.39 What is the lateral distance of an object or ground feature measured from a survey line?

Ans

✓ A. Offset

✗ B. Both “Perpendicular distance” and “Horizontal distance”

✗ C. Perpendicular distance

✗ D. Horizontal distance

Question ID : **59445918086**
Status : **Answered**
Chosen Option : **2**

Q.40 Black damp contains varying portion of:

Ans

✗ A. $CO_2 + CH_4$

✗ B. $CO_2 + CO$

✗ C. $CO_2 + H_2$

✓ D. $CO_2 + N_2$

Black damp is a type of mine atmosphere that is deficient in oxygen and contains a mixture of gases that do not support combustion.
Its primary components are:
Carbon Dioxide (CO_2) – produced by oxidation, blasting, or slow combustion.
Nitrogen (N_2) – which is released from the strata or left behind as oxygen is consumed (oxygen being replaced by CO_2 and N_2).

Question ID : **59445918072**
Status : **Answered**
Chosen Option : **2**

Q.41 Name the method of speed control of large winders usually of above 800 kW?

Ans

✗ A. ACB filters

✓ B. Ward leonard method

✗ C. OCB filters

✗ D. Rheostatic control method

Question ID : **59445918058**
Status : **Answered**
Chosen Option : **4**

Q.42 What is the maximum permissible gradient for LHD?

Ans

✗ A. 1 in 1

✓ B. 1 in 12

✗ C. 1 in 6

✗ D. 1 in 2

Question ID : **59445918066**
Status : **Marked For Review**
Chosen Option : **2**

Q.43 What type of ventilation is recommended for SDL / LHD?

Ans

✗ A. 1 m^3 / minute / Kw of motor power

✗ B. 10 m^3 / minute / Kw of motor power

✗ C. 15 m^3 / minute / Kw of motor power

✓ D. 5 m^3 / minute / Kw of motor power

Question ID : **59445918065**
Status : **Answered**
Chosen Option : **3**

Q.44 The ore reserve for which tonnage and grade are computed partly from specific measurements and partly from projection for reasonable distance geologic evidence is known as _____.

Ans

✓ A. Actual ore reserves

✗ B. Inferred ore reserves

✗ C. Measured ore reserves

✗ D. Indicated ore reserves

Question ID : **59445918155**
Status : **Answered**
Chosen Option : **4**

Q.45 If the observed back sight and fore sight are 20 m and 18 m. The correction back sight on A will be equal to 16 m, the correct fore sight on B will be equal to 14 m where then what is the correction difference in level between A and B?

Ans

✗ A. 9 m

✓ B. 2 m

✗ C. 10 m

✗ D. 6 m

Correct level difference
= Corrected BS - Corrected FS
= 16 - 14 = 2 m

Question ID : **59445918090**
Status : **Not Answered**
Chosen Option : **--**

Q.46 In order to find the difference in elevation between two points P and Q, a level was set upon the line PQ, 30 m from P and 1280 m from Q. The reading obtained on staff kept at P and Q were respectively 0.545 m and 3.920 m. Calculate the true difference in elevation between P and Q?

Ans

✗ A. 2.355 m

✓ B. 3.265 m

✗ C. 2.125 m

✗ D. 4.336 m

Combined correction for Q is 0.06728 (1.28)2 = 0.110 m.
Correct staff reading at Q
= 3.920 – 0.110 = 3.810 m.
Difference in elevation between P and Q
= 3.810 – 0.545 = 3.265 m.

Question ID : **59445918087**
Status : **Answered**
Chosen Option : **2**

Q.47 Payback period is the time required:

Ans

✗ A. For the cash income from a project to get back the initial cash investment

✓ B. From the start of the project to the time to recover the total initial investment

✗ C. From the start of the project to the start of production

✗ D. To the period during which internal rate of return is generated

Question ID : **59445918112**
Status : **Answered**
Chosen Option : **2**

Q.48 Spacing of blast hole should be _____times the burden of holes.

Ans

✗ A. 1.6

✓ B. 1.5

✗ C. 1.7

✗ D. 1.8

Question ID : **59445918122**
Status : **Marked For Review**
Chosen Option : **2**

Q.49 **An offset is measured with an accuracy of 1 in 40. If scale of plotting is 1 cm = 20 m, Calculate the limiting length of the offset so that the displacement of the point on the paper from both sources of error may not exceed 0.25 mm?**

Ans

- ✗ A. 12.04 m
- ✗ B. 16.42 m
- ✓ C. 14.14 m
- ✗ D. 15.20 m

The total displacement of the paper (in cm)
= $\sqrt{2}L/RS$
0.025 cm = $\sqrt{2}L/(40 \times 20)$
L = 14.14 m

Question ID : **59445918081**
Status : **Answered**
Chosen Option : **4**

Q.50 **Dimension of hydraulic permeability expressed with L, M and T is:**

Ans

- ✗ A. LT^{-2}
- ✓ B. LT^{-1}
- ✗ C. MLT^{-1}
- ✗ D. L^2

Question ID : **59445918108**
Status : **Answered**
Chosen Option : **3**

Q.51 **Best-suited method of work for 20 m thick ore body, steeply dipping and having weak wall and strong host rock:**

Ans

- ✓ A. Cut and Fill
- ✗ B. Stope and pillar
- ✗ C. Block Caving
- ✗ D. Sub bland open stoping

Question ID : **59445918133**
Status : **Answered**
Chosen Option : **3**

Q.52 **The following information is provided for an ore deposit:**

Number of waste blocks = 10
Number of ore blocks = 5
Volume of each waste block, m^3 = 600
Total cost of waste handling per m^3 = Rs. 100
Tonnage of each ore block = 400
Total cost of ore handling per ton = Rs. 150
Sale price of ore per ton = Rs. 500

The net cash flow of mining the deposit in lakhs of rupees, is:

Ans

- ✗ A. 3.4
- ✗ B. 2.5
- ✗ C. 0.8
- ✓ D. 1.0

Question ID : **59445918117**
Status : **Answered**
Chosen Option : **3**

Q.53 The angle between the vertical plane of the pulley and the rope when the cage is at the pit top or pit bottom is known as _____.

Ans

✗ A. Angle of repose

✗ B. Angle of draw

✓ C. Angle of fleet

✗ D. Angle of collimination

Question ID : **59445918062**
Status : **Answered**
Chosen Option : **2**

Q.54 **Ring pattern drill holes are provided in:**

Ans

✗ A. Long wall mining

✗ B. Widestall method

✗ C. Bord and pillar mining

✓ D. Blasting gallery

Question ID : **59445918120**
Status : **Answered**
Chosen Option : **4**

Q.55 **The grade which is available from a property after actual mining is _____.**

Ans

✓ A. Effective grade

✗ B. Actual grade

✗ C. Run-of-mine grade

✗ D. Computed grade

Question ID : **59445918150**
Status : **Answered**
Chosen Option : **3**

Q.56 **The following are the staff readings given when the staff is held normal. The line of sight of instrument is placed at an angle +3°24'. It being an anallactic lens, find the horizontal distance between staff and instrument station. Staff readings – 2.145 m, 1.925 m, 1.464 m.**

Ans

✗ A. 48.082 m

✗ B. 58.082 m

✓ C. 68.082 m

✗ D. 78.082 m

Staff intercept
s = 2.145 - 1.464 = 0.681 m
Inclined distance
D = (ks + c)cosθ + rsinθ
= (100 x 0.681 + 0)cos3024' + 1.925 x sin3024'
= 68.08 m

Question ID : **59445918093**
Status : **Answered**
Chosen Option : **2**

Q.57 Which of the following method of mining is only applicable to non-coal mines?

Ans

✗ A. Breast stoping

✗ B. Square set stoping

✗ C. Stull stoping

✓ D. Shrinkage stoping

Question ID : **59445918131**
Status : **Marked For Review**
Chosen Option : **3**

Q.58 When the thickness of immediate roof is more than 'X' m then it becomes stronger and behaves like a main roof., 'X' is given by:

Ans

✗ A. 4m

✗ B. 2m

✗ C. 1m

✓ D. 6m

Question ID : **59445918132**
Status : **Answered**
Chosen Option : **1**

Q.59 In a Bord & Pillar is worked in conjugation with hydraulic stowing, extraction line preferred is:

Ans

✗ A. Steep diagonal

✗ B. Straight line

✗ C. Diagonal

✓ D. Step diagonal

Question ID : **59445918100**
Status : **Answered**
Chosen Option : **1**

Q.60 If the value of ore is Rs 600 per tonne, production cost Rs. 400 per tonne and stripping cost is Rs. 50 per tonne, the breakeven stripping ratio of the mine is:

Ans

✗ A. 2:1

✗ B. 3:1

✗ C. 1:2

✓ D. 4:1

Question ID : **59445918119**
Status : **Answered**
Chosen Option : **2**

Q.61 As per the Indian law the methane concentration should not exceed "X%" in the return of a ventilation district. X is given by:

Ans
- ✔ A. 0.75%
- ✘ B. 0.25%
- ✘ C. 1.25%
- ✘ D. 0.45%

Question ID : **59445918074**
Status : **Answered**
Chosen Option : **2**

Q.62 Sum of the years digit method is used from:

Ans
- ✘ A. Salting
- ✘ B. Ore reserve calculation
- ✘ C. Speculative rate of return
- ✔ D. Depreciation

Question ID : **59445918114**
Status : **Answered**
Chosen Option : **2**

Q.63 The couple and the other two force systems in free body diagrams can be easily simplified.

Ans
- ✘ A. Statement is right if we remove 'couple' part
- ✔ B. Statement is right
- ✘ C. Statement is wrong
- ✘ D. Statement is right if we remove 'force' part

Question ID : **59445918144**
Status : **Answered**
Chosen Option : **1**

Q.64 According to laws governing a pump, the relationship between water quantity (Q) and rotation of impeller (rpm) is:

Ans
- ✘ A. Q = rpm
- ✘ B. Q $\propto$ 1/rpm
- ✔ C. Q $\propto$ rpm
- ✘ D. Q > rpm

Question ID : **59445918063**
Status : **Answered**
Chosen Option : **3**

Q.65 Convert 122°30′ whole circle bearings to quadrant bearings?

Ans

✗ A. 270 – 122°30

✗ B. 360 – 122°30

✓ C. 180 – 122°30

✗ D. 122°30

For 122°30′:
QB lies between 90° and 180°
→ South-East quadrant.
QB = 180° − WCB = 180° − 122°30′
= 57°30′ (S 57°30′ E).

Question ID : **59445918083**
Status : **Answered**
Chosen Option : **2**

Q.66 In first method of taking single set, after keeping the telescope normal throughout we measure the angle clockwise by 6 repetitions. We obtain the first value of the angle by dividing the final reading by _____.

Ans

✗ A. 2

✓ B. 6

✗ C. 4

✗ D. 3

Question ID : **59445918094**
Status : **Answered**
Chosen Option : **2**

Q.67 Top slicing is an underhand caving method which is a variation of:

Ans

✓ A. Sublevel stoping

✗ B. Shrinkage stoping

✗ C. Breast stoping

✗ D. Cut and fill stoping

Question ID : **59445918129**
Status : **Answered**
Chosen Option : **4**

Q.68 If the poisson's ratio of a rock sample is 0.25, then the relationship among the modulus of elasticity (E), modulus of rigidity (G) and bulk modulus (K) is:

Ans

✗ A. E = G > K

✓ B. E > K > G

✗ C. E > G > K

✗ D. E = K = G

Question ID : **59445918110**
Status : **Answered**
Chosen Option : **3**

Q.69 The number of man days in the year 2014 is 26500, rest days are 54, and non- working days due to sick are 46. Find the persons ordinarily employed in the Mine. Consider the year means 365 days.

Ans

✗ A. 110

✓ B. 100

✗ C. 120

✗ D. 90

Question ID : **59445918138**
Status : **Answered**
Chosen Option : **2**

Q.70 Which of the following locomotive is not recommended to be used where the coal is liable to spontaneous heating?

Ans

✓ A. Multi- Stage turbine pump

✗ B. Ramp pump

✗ C. Reciprocating pump

✗ D. Battery locomotive

Question ID : **59445918064**
Status : **Answered**
Chosen Option : **4**

Q.71 Which Ministry published a draft of Noise Pollution Rules?

Ans

✗ A. Ministry of Industries

✗ B. Ministry of Pollution Control

✓ C. Ministry of Environment and Forests

✗ D. Ministry of Health and Family Welfare

Question ID : **59445918149**
Status : **Answered**
Chosen Option : **4**

Q.72 A seam is worked at a depth of 70 m from the surface and the width of the galleries is 3.2 m, the dimension of the pillars should not exceed:

Ans

✗ A. 13.3 m

✗ B. 15.0 m

✗ C. 19.5 m

✓ D. 16.5 m

Question ID : **59445918101**
Status : **Answered**
Chosen Option : **4**

Q.73 The cash flow a project is given below:

Year	0	1	2	3	4
Cash flow (Rs.)	-5000	15000	15000	20000	22500

The internal rate of return (IRR) in % lies between:

Ans
- ✗ A. 14 and 15
- ✗ B. 16 and 17
- ✓ C. 15 and 16
- ✗ D. 13 and 14

Question ID : **59445918113**
Status : **Answered**
Chosen Option : **2**

Q.74 What will be the average elevation of terrain if the scale is given as 43 m, focal length and height of the station as 4 m and 20 m?

Ans
- ✗ A. 8.91 m
- ✓ B. 9.90 m
- ✗ C. 1.91 m
- ✗ D. 1.9 m

The scale S = f/(H – h)
Or 43 = 4/(20 – h)
h = 19.90 m

Question ID : **59445918097**
Status : **Answered**
Chosen Option : **3**

Q.75 What should be the range of methane air mixture to make it an explosive?

Ans
- ✗ A. 10 – 18
- ✗ B. 4.2 – 8.4
- ✓ C. 5.4 – 14.8
- ✗ D. 7.4 – 16.6

Lower Explosive Limit (LEL) = 5.4% methane in air
Upper Explosive Limit (UEL) = 14.8% methane in air
Below 5.4%, the mixture is too lean (insufficient methane) to burn. Above 14.8%, it is too rich (insufficient oxygen) to burn.

Question ID : **59445918067**
Status : **Answered**
Chosen Option : **2**

Q.76 Factor of safety required for drum winders to be used for men winding is _____.

Ans
- ✗ A. 6
- ✗ B. 8
- ✓ C. 10
- ✗ D. 4

Question ID : **59445918061**
Status : **Answered**
Chosen Option : **3**

Q.77 **The exhaust of Diesel loco is mixed with fresh air before being discharged into open atmosphere of mine. The minimum quantity of fresh air mixed with the exhaust is "X" times of volume of exhaust. "X" is given by:**

Ans

✔ A. 40

✘ B. 5

✘ C. 20

✘ D. 10

Question ID : **59445918056**
Status : **Answered**
Chosen Option : **1**

Q.78 **The roof bolt that follows the principle of point anchorage is:**

Ans

✔ A. Expansion shell bolt

✘ B. Full column grouted bolt

✘ C. Swellex bolt

✘ D. Split set bolt

Question ID : **59445918107**
Status : **Answered**
Chosen Option : **2**

Q.79 **Which of the following method is applicable to both metallic and non-metallic minerals?**

Ans

✔ A. Sublevel

✘ B. Blasting gallery

✘ C. Bord and pillar

✘ D. Stope and pillar

Question ID : **59445918128**
Status : **Answered**
Chosen Option : **4**

Q.80 **A delay detonator has delay element introduced between_____.**

Ans

✘ A. Priming charge and base charge

✔ B. Fuse head and Priming charge

✘ C. Detonator tube and fuse head

✘ D. Neoprene plug and neoprene sleeve

Question ID : **59445918126**
Status : **Answered**
Chosen Option : **3**

Q.81 **Let 'e' be the closing error in the bearing of last line of a closed traverse having No sides. Then what is the correction for the last line?**

Ans

✔ A. e

✘ B. 3e/N

✘ C. e/N

✘ D. 2e/N

Question ID : **59445918084**
Status : **Answered**
Chosen Option : **2**

Q.82 **The quantity of air going down the DC district is 850 m^3/min. The surface ventilator develops water gauge of 45 mm when the ventilator is stopped the air going down the shaft is 280 m^3/min. What is the NVP?**

Ans

✔ A. 5.5 mm of w.g

✘ B. 7.5 mm of w.g

✘ C. 10 mm of w.g

✘ D. 6.5 mm of w.g

$P = RQ^2$

Fan + NVP

$45 + P_{nvp} = R \times 850^2$ (1)

No fan, Only NVP

$P_{nvp} = R \times 280^2$ (2)

Solving

$P_{nvp} = 5.5$ mm of wg

Question ID : **59445918071**
Status : **Answered**
Chosen Option : **2**

Q.83 **The method of mining a coal seam of 8.5 m is by:**

Ans

✘ A. A combination of B & P and L/W methods

✘ B. L/W methods in lifts

✘ C. L/W sublevel caving

✔ D. B & P method in lifts

Question ID : **59445918106**
Status : **Answered**
Chosen Option : **1**

Q.84 **The wt% of solids in a sand-water stowing pipe is 60. If the density of solid is 3000 kg/m^3, the pulp density of the slurry in kg/m^3 is:**

Ans

✔ A. 1667

✘ B. 1560

✘ C. 1380

✘ D. 1420

Question ID : **59445918103**
Status : **Answered**
Chosen Option : **3**

Q.85 In a triaxial compressive test if σ_1 is axial stress and σ_2 and σ_3 are confining stresses, then:

Ans

✗ A. $\sigma_1 < \sigma_2 = \sigma_3$

✓ B. $\sigma_1 > \sigma_2 = \sigma_3$

✗ C. $\sigma_3 < \sigma_2 = \sigma_1$

✗ D. $\sigma_3 > \sigma_2 = \sigma_1$

Question ID : **59445918109**
Status : **Answered**
Chosen Option : **1**

Q.86 **Calculate the power of the motor, if the r.m.s torque for a winder is 120 kNm, winding drum diameter is 4.2 m; maximum rope speed is 8 m/s?**

Ans

✗ A. 357 kW

✓ B. 457 kW

✗ C. 257 kW

✗ D. 307 kW

Question ID : **59445918060**
Status : **Answered**
Chosen Option : **4**

Q.87 **In case of plane table surveying, which of the following operation can be done clearly?**

Ans

✗ A. Both “Area computation” & “Volume computation”

✗ B. Volume computation

✗ C. Area computation

✓ D. Contouring

Question ID : **59445918092**
Status : **Answered**
Chosen Option : **4**

Q.88 **A tacheometer is setup at “A” and the readings on the staff at “B” are 1.77 m, 2.12 m, 2.34 m and the inclination of line of sight is + 1° 9'. Calculate the vertical distance between A and B. Take k = 100, c = 0.3?**

Ans

✓ A. 1.15 m

: V = (kssin2θ/2) + csinθ
staff intercept s = 2.34 – 1.77 = 0.57 m
θ = 109’ = 1 + (9/60) = 1.150
Putting values, we get V = 1.15 m

✗ B. 2.15 m

✗ C. 1.51 m

✗ D. 2.51 m

Question ID : **59445918091**
Status : **Answered**
Chosen Option : **2**

Q.89 **The yield stress of a material is the stress at which?**

Ans

✗ A. stress to strain ratio is constant

✗ B. the material fails

✗ C. the Poisson's ratio is maximum

✓ D. the permanent deformation first appears

Question ID : **59445918141**
Status : **Answered**
Chosen Option : **3**

Q.90 **The width of any bench shall not be less than (i) the width of widest machine plying on the bench plus 2 m (ii) if dumpers ply on the bench, 3 time the width of dumper (iii) the height of the bench:**

Ans

✓ A. Whichever is more

✗ B. (ii) & (iii)

✗ C. (i) & (ii)

✗ D. (i) & (iii)

Question ID : **59445918124**
Status : **Answered**
Chosen Option : **4**

Q.91 **Deflection angle may vary from _____.**

Ans

✗ A. 0° to 120°

✗ B. 180° to 360°

✗ C. 0° to 360°

✓ D. 0° to 180°

Question ID : **59445918095**
Status : **Answered**
Chosen Option : **1**

Q.92 **Calculate the pressure required to circulate 2400 m^3 per minute of air through a 3 km long tunnel of 3 × 2.5 m cross section with k = 0.001 Ns^2m^{-4}.**

Ans

✓ A. 125 pa

✗ B. 225 pa

✗ C. 375 pa

✗ D. 300 pa

Question ID : **59445918075**
Status : **Answered**
Chosen Option : **4**

Q.93 A light house is visible just above the horizon at a certain station at the sea level. The distance between the station and light house is 10 km. Find the height of the light house?

Ans

✔ A. 6.728 m

✘ B. 6.192 m

✘ C. 6.90 m

✘ D. 6.123 m

$d = 3.855\sqrt{h}$
$10 = 3.855\sqrt{h}$
$h = 6.728$ m

Question ID : **59445918088**
Status : **Answered**
Chosen Option : **4**

Q.94 As per mining regulations, for every shaft exceeding 100m depth and during hoisting of men the speed should not exceed:

Ans

✔ A. 1.5 m/s

✘ B. 5 m/s

✘ C. 0.5 m/s

✘ D. 1 m/s

Question ID : **59445918059**
Status : **Answered**
Chosen Option : **3**

Q.95 Which of the following component is more dangerous to ozone layer?

Ans

✔ A. Halons

✘ B. Sulphur

✘ C. CFCs

✘ D. Nitrogen

Halons are extremely dangerous. They are bromine-containing compounds. Bromine is 40–100 times more effective at destroying ozone than chlorine. Halons have an ODP (Ozone Depletion Potential) roughly 3 to 10 times higher than CFCs.

Question ID : **59445918147**
Status : **Answered**
Chosen Option : **1**

Q.96 In an underground coal mine, a freshly exposed roof can be supported by a temporary support in the form of:

Ans

✘ A. Hydraulic props

✔ B. Safari supports

✘ C. Screw props

✘ D. Triangular chocks

Question ID : **59445918104**
Status : **Answered**
Chosen Option : **2**

Q.97 An offset is laid out 6° from its true direction on the field. Find the resulting displacement of the plotted point on the paper in a direction parallel to the chain line? (Note: Given the length of offset is 10 m and scale is 5 m to 1 cm)

Ans

✔ A. 0.209 cm

✘ B. 0.290 cm

✘ C. 0.0290 cm

✘ D. 0.610 cm

Displacement on ground = Lsinθ
= 10sin60 = 1.045 m
Displacement on paper
= displacement on ground/scale
= 1.045 m/(5 m/1 cm) = 0.209 cm

Question ID : **59445918080**
Status : **Answered**
Chosen Option : **2**

Q.98 The Bucket Wheel excavator machinery performs its operations with the following method:

Ans

✘ A. Key Cut

✘ B. Reaming

✘ C. Pulsating Impact

✔ D. Terracing

Question ID : **59445918125**
Status : **Answered**
Chosen Option : **4**

Q.99 The following is NOT a continuous mining technology for surface mines:

Ans

✔ A. Shovel - Dumper

✘ B. Bucket Wheel Excavator

✘ C. Conveyor Bridge

✘ D. Bucket Chain Excavator

Question ID : **59445918127**
Status : **Marked For Review**
Chosen Option : **1**

Q.100 In a Bord & Pillar mining, the width of the pillar and galleries are 19.5 m and 3 m respectively. The percentage of extraction during development is:

Ans

✔ A. 24.8

✘ B. 29.3

✘ C. 25.2

✘ D. 30.5

Question ID : **59445918102**
Status : **Answered**
Chosen Option : **1**