Instructions

For the following questions answer them individually

Question 1

What is the loss percent incurred when 2 chocolates got at a rupee are sold 4 for a rupee?

A 50%

B 100%

C 75%

D 25%

Answer: A

Explanation:

chocolates got at 2 for a rupee are sold at 4 for a rupee means

C P of a chocholate is 50 paise per chocholate

S P of a chocholate is 25 paise per chocholate

loss % = $\frac{CP-SP}{CP} \times 100$

$= \frac{25}{50} \times 100$

$= 50\%$

Question 2

If (x - 1) and (x + 3) are the factors of $x^2 + ax + b$, then find the values of 'a' and 'b' respectively.

A 2, 3

B -2, -3

C -2, 3

D 2, -3

Answer: D

Question 3

The ratio of the time taken to row a certain distance upstream to the time taken to go downstream is 4 : 1. What is the ratio of the speed along stream to that upstream?

A 5 : 3

B 3 : 5

C 4 : 1

D 1 : 4

Answer: C

Question 4

Who was the first Indian to go into the space?

A Rakesh Sharma

B Kalpana Chawla

C Ravish Malhotra

D Sunita Williams

   Answer: A

Question 5

Which country awarded Shri.Ram Nath Kovind with the highest civilian award the "Grand Order of the King of Tomislav"?

A France

B Croatia

C England

D Germany

   Answer: B

Question 6

Express $0.1\overline{25}$ in rational from of Number?

A $\frac{113}{990}$

B $\frac{125}{999}$

C $\frac{100}{999}$

D $\frac{119}{993}$

   Answer: B

Question 7

Find the ODD one out from the given options.

A 290

B 324

C 144

D 100

   Answer: A

Explanation:
All are the squares of the number

$324 = 18^2$

$144 = 12^2$

$100 = 10^2$

except 290

Question 8

Two trains 200 m and 150 m long are running on parallel rails at the rates of 40 km/h and 45 km/hrespectively. In how much time will they cross each other if they are running in the same direction?

A 72 seconds

B 132 seconds

C 192 seconds

D 252 seconds

Answer: D

Explanation:
Two trains 200 m and 150 m long are running on parallel rails

distance = length of the two trains = 200m + 150 m= 350 m

Relative speed by two trains running in the same direction = (45-40)km/m = 5km/hr

time taken for crossing = $\frac{distance}{speed}$

we have to change the units of speed bymultiplying $\frac{5}{18}$

$$= \frac{350m}{5 \times \frac{5}{18}}$$

= 252 seconds

Question 9

Complete the series.2, 3, 6, 15, 42, (...)

A 94

B 48

C 62

D 123

Answer: D

Question 10

The governor of a state of India is appointed for a term of?

A Five years

B Three years

C Six years

D Two years

Answer: A

Question 11

Which of the following sports originated in India?

A Kabaddi

B Tennis

C Cricket

D Football

Answer: A

Question 12

Kinetic energy of gas molecules is directly proportional to?

A Pressure

B Temperature

C Atmospheric pressure

D Both temperature and pressure

Answer: B

Question 13

Who among the following was awarded with the Padma Shri in 2019?:

A Gautam Gambhir

B Budhaditya Mukherjee

C John Chambers

D Bachendri Pal

Answer: A

Question 14

If 31 December 2005 was a Saturday, then what day of the week will 31 December 2009 be

A Saturday

B Sunday

C Friday

D Thursday

Answer: D

Question 15

When 8 times of a number is increased by 4, the result is the smallest 3 digit number. What is the number?

A 8

B 12

C 15

D 10

  Answer: B

Explanation:
let the number be N

when N = 8

8N + 4

ATQ

8N + 4 is a smallest 3 digit number

lets check the option

when N = 8

8N + 4 = 68

when N = 12

8N + 4 = 100

when N = 15

8N + 4 = 124

when N = 10

8N + 4 = 84

 So, N = 12

Question 16

Which word will best complete the relationship given below? Asphalt : Road :: Brick : ?

A Cloth

B Wall

C Fabric

D Prism

  Answer: B

Explanation:
Asphalt : Road :: Brick : ?

Asphalt is used to make the road

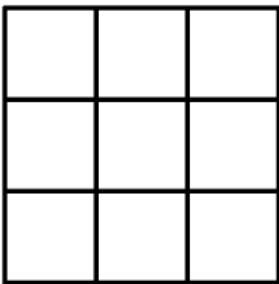similarly

Brick is used to make Wall

Question 17

Natural source of vitamin C is?

A Guava

B Spinach

C All of the options

D Apple

    Answer: C

Question 18

How many squares are there in the given figure?

A 11

B 14

C 12

D 10

    Answer: B

Question 19

If the interest is compounded half-yearly, find the Compound Interest on the sum of Rs.18500 at the rate of40% per annum for 18 months.

A Rs.16000

B Rs.16280

C Rs.13468

D Rs.15469

    Answer: C

Explanation:

compound interest + P= $P(1 + \frac{R}{100})^n$

$$= \; 18500(1 + \frac{20}{100})^3$$

In Time, we can write 18 months as $1\frac{1}{2}$ years which can be written as 3 half years.

compound interest + P = 31968

So, Compound Interest will be,

compound interest = 31968 - 18500

So, Compound Interest is Rs.13468.

Question 20

Bacilli are bacteria which are?

A Comma-shaped

B Spherical

C Spiral

D Rod-shaped

   Answer: D

Question 21

The isotope deuterium of hydrogen has?

A One proton and one neutron

B One neutron and two protons

C No neutrons and one proton

D One electron and two neutrons

   Answer: A

Question 22

On which of the following river banks is the city of Agra located?

A Tapti

B Yamuna

C Ganga

D Sabarmati

   Answer: B

Question 23

Ram is facing towards east and Ravi is facing Ram and walking towards him. Ravi takes a left turn. Which direction is Ravi facing now?
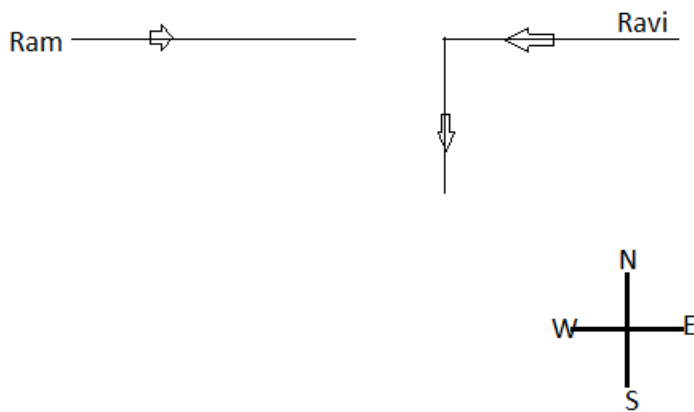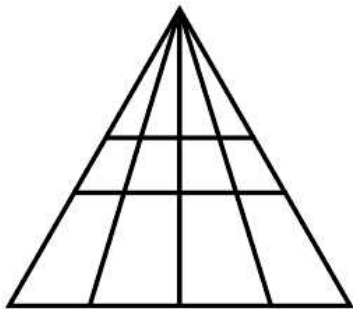
A East

B South west

C South east

D South

　　Answer: D

Explanation:

south direction

Question 24

How many triangles are their in the given figure?

A 21

B 26

C 30

D 34

　　Answer: C

Question 25

In a certain code, 'MEDICAL' is written as 'MEIDCAL'. How would 'POLICE' be written in that code?

A ILCEPO

B POCEIL

C PCELIO

D POILCE

   Answer: D

Explanation:

'MEDICAL' is written as 'MEIDCAL'

Here only the 3rd and 4th letters are interchanged which are D and I.

similarly

'POLICE' here we should interchange the 3rd and 4th letter LI =IL = 'POILCE'

Question 26

How are detergents called?

A Hard soaps

B Soapless soaps

C Carbolic soaps

D Soft soaps

   Answer: B

Question 27

Water holding capacity is the highest in?

A Loamy soil

B Sandy soil

C Clayey soil

D Silty soil

   Answer: C

Question 28

_____ is a sexually transmitted killer disease.

A AIDS

B Typhoid

C Jaundice

D Malaria

   Answer: A

Question 29

Michael Phelps of US is famous for?

A   Swimming

B   High jump

C   Pole vault

D   Horse riding

   Answer: A

Question 30

Simplify $3 + \cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{2+\frac{1}{4}}}}$ **?**

A $\frac{1}{12}$

B $\frac{3}{13}$

C $\frac{13}{49}$

D $\frac{48}{13}$

   Answer: D

Explanation:

$3 + \cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{2+\frac{1}{4}}}}$

$3 + \cfrac{1}{1+\cfrac{1}{1+\frac{1}{\frac{9}{4}}}}$

$3 + \cfrac{1}{1+\frac{1}{1+\frac{4}{9}}}$

$3 + \cfrac{1}{1+\frac{1}{\frac{13}{9}}}$

$3 + \frac{1}{1+\frac{9}{13}}$

$\frac{48}{13}$

Question 31

If '+' means '÷', '-' means 'x', 'x' means '-' and '÷' means '+', then (5 - 8 x 6 ÷ 11) + 9 = ?

A   5

B   20

C   15

D   12

   Answer: A

Explanation:

'+' means '÷', '-' means 'x', 'x' means '-' and '÷' means '+', then (5 - 8 x 6 ÷ 11) + 9 = ?

$(5 - 8 \times 6 \div 11) + 9$

$(5 \times 8 - 6 + 11) \div 9$

appl bodmass rule

$(40 - 6 + 11) \div 9$

$45 \div 9 = 5$

Question 32

Which of the following is a leguminous plant?

A Potato

B Pea

C Cabbage

D Tomato

   Answer: B

Question 33

If in a certain code, RAT = 40, CHAT = 33, then RETURN = ?

A 99

B 97

C 84

D 88

   Answer: B

Question 34

Which of the following is a source for quinine?

A Teak

B Cinchona

C Neem

D Bamboo

   Answer: B

Question 35

The product of two co-prime numbers is 117. Find their HCF.

A 117

B 1

C 13

D 7

Answer: B

Explanation:

Two **numbers** are **coprime** if their highest common factor is 1

Given ,The product of two co-prime numbers is 117

so the hcf should be 1

Question 36

Find the HCF of two consecutive even integers.

A 1

B 2

C -1

D 0

Answer: B

Explanation:

let take 4,6 a two consecutive even integers

6 = 2×3

4 = 2×2

select the highest common factor = 2

similarly take another no

let take 12,14 a two consecutive even integers

12 = $2 \times 2 \times 3$

14 = 2×7

select the highest common factor = 2

so the hcf is 2 only

Question 37

Simplify: $cos\,5° + cos24° + cos175° + cos204° + cos300°$

A $\frac{1}{12}$

B 0

C $\frac{1}{2}$

D 1

Answer: C

Question 38

The amount of air inspired and expired during normal respiration is known as?

A Vital capacity

B Tidal volume

C Minute volume

D Residual volume

   Answer: B

Question 39

What happens to the force of gravitation between two objects when the mass of one object is doubled?

A The force of gravitation is tripled

B The force of gravitation is halved

C The force of gravitation is four times

D The force of gravitation is doubled

   Answer: D

Question 40

If the radius of curvature of a convex mirror is 24 cm, what is its focal length?

A 12 cm

B 14 cm

C 24 cm

D 48 cm

   Answer: A

Question 41

If 53 * 13 = 33, 39 * 13 = 26 and 74 * 26 = 50, then what will be 37 * 21?

A 43

B 37

C 24

D 29

   Answer: D

Explanation:

53 * 13 = 33

$53. + 13 = \frac{66}{2}$

, 39 * 13 = 26

$39. + 13 = \frac{42}{2} = 26$

74 * 26 = 50,

$74. + 26 = \frac{100}{2} =$

37 * 21

$37. + 21 = \frac{58}{2} = 29$

Question 42

The sum of two numbers is 22. Five times of one number is equal to 6 times the other. Find the larger of the two numbers.

A 12

B 16

C 15

D 10

Answer: A

Explanation:

The sum of two numbers is 22. Five times of one number is equal to 6 times the other. Find the larger of the two numbers.

let the no. be P ,Q

P + Q = 22 (1)

ATQ

5P = 6Q (2)

put (1) in (2)

5(22-Q) = 6Q

Q = 10

so

P = 12

Question 43

Twinkling of stars at night happens due to?

A Scattering of light

B Reflection of light

C Dispersion of light

D   Atmospheric refraction

    Answer: D

Question 44

An article is sold at a certain price.Had it been sold at 60% of this price,there would have been a loss of 35%.What is the percentage profit now?

A $16\frac{2}{3}$

B $12\frac{1}{2}$

C   15

D $8\frac{2}{3}$

    Answer: D

Explanation:

let original s.p of article be 'Rs 100 , c.p = x

new s.p = 60% of 100 = Rs 60

cp - loss = sp

loss is 35%

x - 35x = 60

= 0.65 x = 60

x = $\frac{6000}{65}$

profit = $100 - \frac{6000}{65} = \frac{500}{65}$

profit % = $\frac{\frac{500}{65}}{\frac{6000}{65}} \times 100$

 = 8.33%

Question 45

Find the ODD one out from the given options.

A   HTI

B   GQI

C   DRM

D   ETN

    Answer: A

Question 46

Barium chloride on reacting with ammonium sulphate forms barium sulphate and ammonium chloride. Which of the following CORRECTLY represents the type of reaction involved?

A   Combination reaction

B   Combustion reaction

C   Oxidation reaction

D   Precipitation reaction

   Answer: D

Question 47

The sum of the ages of two cousins is 35. Ten years ago, the ratio of their ages was 2 : 1. What are their present ages?

A   30, 5

B   20, 15

C   28, 7

D   10, 25

   Answer: B

Explanation:
Sum of the C1+ C2 = 35

10 years ago

$$C1 - 10 + C2 - 10 = 2X + X$$

$$35 - 20 = 3X$$

x = 5

age before 10 years is 2X , X = 10 ,5

present age is = 10+10 =20

          = 5 + 10 =15

Question 48

What is the chemical name of limewater?

A   Sodium hydroxide

B   Calcium hydroxide

C   Ammonium hydroxide

D   Magnesium hydroxide

   Answer: B

Question 49

In a period, elements are arranged in the order of?

A   Decreasing charges in the nucleus

B   Constant charges in the nucleus

C   Equal charges in the nucleus

D   Increasing charges in the nucleus

   Answer: D

Question 50

Why are the tyres of the cars, trucks and bulldozers trea

A   To increase the speed of the vehicle

B   The treads of the tyres are meant to add beauty to its design

C   To decrease the friction

D   To increase friction and to give a better grip to them on the road

   Answer: D

Question 51

Which of the following elements is represented by the symbol "Si"?

A   Silicon

B   Sodium

C   Silver

D   Sulphur

   Answer: A

Question 52

Which word will best complete the relationship given below? Oil : Seed :: Metal : ?

A   Paper

B   Leather

C   Ore

D   Brick

   Answer: C

Question 53

Which technique is used to determine the depth of the sea, locate the underwater hills, valleys, submarines, icebergs etc.?

A   SONAR

B   Sound absorption

C   Infrasound

D   MRI

   Answer: A

Question 54

Find the missing number in the following series.
1, 1, 2, (...), 24, 120, 720

A 8

B 3

C 6

D 2

Answer: C

Explanation:
1, 1, 2, (...), 24, 120, 720

1

$1 \times 1 = 1$

$1 \times 2 = 2$

$2 \times 3 = 6$

$6 \times 4 = 24$

$24 \times 5 = 120$

and so on

Question 55

Find the selling price of an article, if a shopkeeper allows two successive discounts of 5% each on the marked price of Rs.80.

A Rs.72

B Rs.73

C Rs.72.20

D Rs.70.10

Answer: C

Explanation:
a shopkeeper allows two successive discounts of 5% each on the marked price of Rs.80.

S.P. = 95% of 95% of Rs. 80

$= Rs.\left(\frac{95}{100} \times \frac{95}{100} \times 80\right) = Rs.72.20$

Question 56

Find the selling price of an article, if a shopkeeper allows two successive discounts of 5% each on the marked price of Rs.80.

A Rs.72

B Rs.73

C Rs.72.20

D Rs.70.10

Answer: B

Question 57

Which of these is a fossil fuel?

A Alcohol

B Biogas

C Wood

D Coal

Answer: D

Question 58

A cube has numerically equal surface area and volume. Find the volume of the cube.

A 276 cubic units

B 162 cubic units

C 512 cubic units

D 216 cubic units

Answer: D

Explanation:
Given that

cube has numerically equal surface area and volume

$6 \times side^2 = side^3$

side = 6 cubic units

so volume = $side^3$

6^3 = 216 cubic units

Question 59

A 110 m long train crosses a pole in 12 seconds. What is the speed of the train in km/h?

A 49 km/h

B 27 km/h

C 30 km/h

D 33 km/h

Answer: D

Explanation:
As we know that

Speed = $\frac{distance}{time}$

Given

Let train length = 110m

Speed = $\frac{110}{12}$

Now change into km/ hr

= $\frac{110}{12} \times \frac{18}{5}$ = 33 km/hr

Question 60

Find the group of wrong alphabets in the following series.MA, WO, OE, SI, YM

A   SI

B   OE

C   WO

D   YM

Answer: C

Question 61

Chandigarh is the capital of which of the following states?

A   Himachal Pradesh

B   Both Punjab and Haryana

C   Punjab

D   Haryana

Answer: B

Question 62

Which of the following statements about the modern periodic table is CORRECT?

A   It has 18 vertical columns known as groups

B   It has 7 horizontal rows known as groups

C   It has 7 vertical columns known as periods

D   It has 18 horizontal rows known as period

Answer: A

Question 63

One day in the evening, an eagle was flying towards sun and turned left. Again it took left turn. Which direction was the eagle flying now?

A   South

B   South west

C   East

D   South east

   Answer: C

Question 64

Thillana is one of the presentation styles of which dance form?

A   Bharatanatyam

B   Kuchipudi

C   Odissi

D   Kathak

   Answer: A

Question 65

Choose the alternative that best replaces the question mark in the given figure?

15	
90	75

18	
108	90

21	
?	105
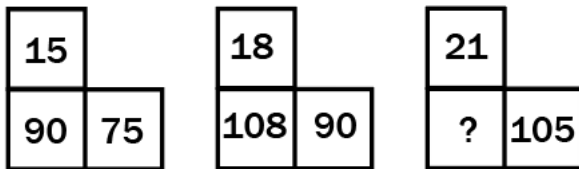
A   136

B   126

C   84

D   108

   Answer: B

Explanation:

15	
90	75

18	
108	90

21	
?	105
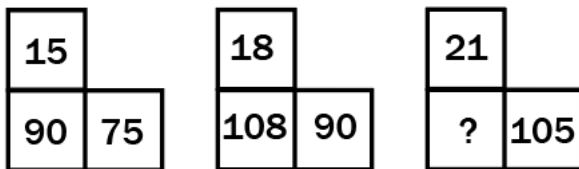
fig (1)The addition of 15 and 75 is equal to 90

similarly

fig (2)The addition of 18 and 90 is equal to 108

fig (3)The addition of 21 and 105 is equal to 126

Question 66

In this question, three statements are given followed by four conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

1) All gold are platinum.
2) Some platinum are silver.
3) All silver are diamonds.

Conclusions:

I. Some diamonds are platinum.
II. Some diamonds are gold.
III. Some silver are gold.
IV. Some platinum are diamonds.

A   Only conclusions I and IV follow

B   Only conclusions I and II follow

C   Only conclusion III follows

D   Only conclusions I and III follow

Answer: A

Explanation:
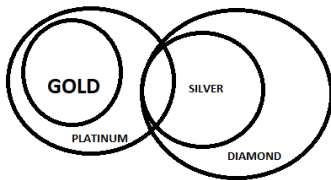
I. Some diamonds are platinum.

yes, some Diamonds are Platinum as shown in figure

II. Some diamonds are gold.

There is no connection between diamonds and gold

III. Some silver are gold.

There is no connection between silver and gold

IV. Some platinum are diamonds.

yes, some platinum are diamond as shown in figure

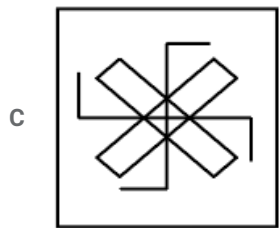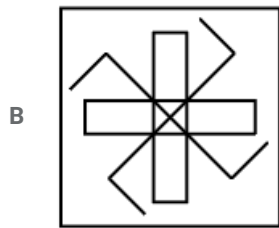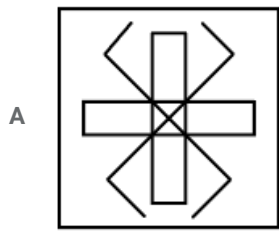so, Only conclusions I and IV follow

Question 67

To hear a distinct echo, what is the minimum time interval required between the original sound and the echo?

A   0.1 second

B   0.2 second

C   0.4 second

D   0.01 second

Answer: A

Question 68

Find the odd one out from the given options?
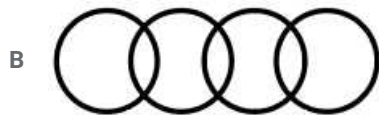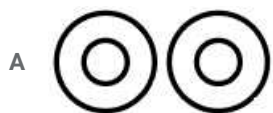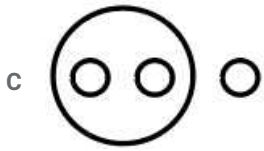

A

B

C

D
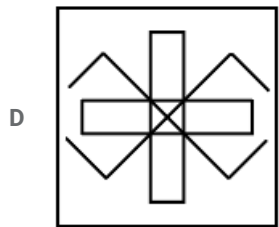
Answer: C

Explanation:
In all figure plus '+' sign is there but in option 3 cross 'x' sign is there so option 3 is odd

Question 69

choose the figure that best represents the relationship among the classes given below?
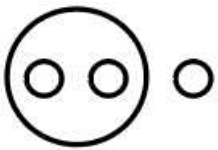Wheat, Grains, Onion, Maize

A

B

C

D

Answer: C

Explanation:
Wheat, Grains, Onion, Maize

Wheat and Maize comes under Grains

Onion comes under Vegetable which is different from grains

the two smaller circle inside the big circle is Wheat and Maize and big circle is Grains and the small circle outside is onion

Question 70

Which of these does NOT have an optical lens?

A   Periscope

B   Stethoscope

C   Telescope

D   Microscope

   Answer: B

Question 71

Which gas is typically produced when metal reacts with acids?

A   Oxygen

B   Nitrogen

C   Hydrogen

D   Carbon dioxide

   Answer: C

Question 72

If $cot\theta = \frac{a}{b}$ **then find the value of** $\frac{cos\theta + sin\theta}{cos\theta - sin\theta}$

A $\frac{a-b}{a+b}$

B $\dfrac{a^2}{b^2}$

C $\dfrac{b}{a}$

D $\dfrac{a}{b}$

Answer: A

Question 73

Read the following information carefully and answer the question given below.
Eight captains of different cricket teams—Australia, New Zealand, India, Pakistan, Sri Lanka, England, WestIndies and South Africa are sitting around a circular table and are facing the centre, but not necessarily in thesame order. Indian captain sits third to the left of the Sri Lankan captain. Only two people sit between theAustralian captain and West Indies captain. Neither the Australian captain nor West Indies captain is an immediate neighbour of the Indian captain. The captain of South Africa sits second to the right of the England captain. England captain is not an immediate neighbour of the Indian captain. The Australian captain sits third to the left of the Indian captain. Captains of Pakistan and New Zealand are not immediate neighbours. Pakistan captain sits third to the left of the England captain.
Which of the following captains sits exactly between the captain of India and West Indies?

A Sri Lanka

B South Africa

C Pakistan

D Australia

Answer: C

Question 74

The sum of three numbers is 100. The ratio of the first number to the second number is 4 : 9 and the ratio of the second to the third number is 3 : 4. Find the second number.

A 28

B 30

C 36

D 24

Answer: C

Explanation:
let the first no be A, second no be B and third no. C

$\dfrac{A}{B} = \dfrac{4}{9}$

$\dfrac{B}{C} = \dfrac{3}{4}$

B is common in both so we have to balance the B

$\dfrac{A}{B} = \dfrac{4 \times 3}{9 \times 3}$

$\dfrac{B}{C} = \dfrac{3 \times 9}{4 \times 9}$

$\dfrac{A}{B} = \dfrac{12}{27}$

$$\frac{B}{C} = \frac{27}{36}$$

so

12x + 27x + 36x = 100

75x = 100

$x = \frac{4}{3}$

so,second no = 27x = 36

Question 75

Which community gets special provision for certain services in Article 336?

A   Sikh community

B   Hindu community

C   Anglo-Indian community

D   Muslim community

Answer: C

Question 76

Complete the series. CJ, PU, ND, LG, (...)

A   RE

B   JE

C   KS

D   VV

Answer: B

Question 77

A sum of money at Simple Interest amounts to Rs.815 in 3 years and Rs.854 in 4 years. What is the sum?

A   Rs.698

B   Rs.690

C   Rs.700

D   Rs.650

Answer: A

Explanation:
1 year = 854 - 815 =39

for 1 yr Simple intrest=39

3 year SI = 39×3 = 117

so = 815-117 = 698

Question 78

Which of the following is/are rich in vitamin-A?

A   Tomato

B   Oranges

C   Apple

D   Carrot

   Answer: D

Question 79

simplify $\sqrt{0.01 + \sqrt{0.0225}}$

A   16

B   0.4

C   4

D   0.04

   Answer: B

Question 80

In which of the following lists is Economic planning placed?

A   Concurrent list

B   State list

C   Union list

D   Both State list and Union list

   Answer: A

Question 81

What is the total surface area of a solid cylinder whose radius is half the radius of a circle of area 154 m and height is the same as its radius?

A $312 m^2$

B $132\ m^2$

C $123\ m^2$

D $231\ m^2$

   Answer: D

Explanation:
areaof circle = $\pi \times r^2$

$154 \, m = \pi \times r^2$

$r = 7 \, m$

cyclinder

height H = radius of circle r

R = $\frac{7}{2} = 3.5m$

$TSA = 2\pi \times R \times (R + H)$

$= 2\pi \times 3.5 \times (3.5 + 7)$

$= 231 m^2$

Question 82

P, Q and R enter into a partnership investing Rs.35000, Rs.45000 and Rs.55000. Find their respective share in the annual profit of Rs.40500.

A   Rs.10500, Rs.13500, Rs.18500

B   Rs.10500, Rs.13500, Rs.16500

C   Rs.10500, Rs.13500, Rs.17500

D   Rs.10500, Rs.13500, Rs.19500

Answer: B

Explanation:

Invested Amount is in the ratio $= 35000 : 45000 : 55000$

$7 : 9 : 11$

total ratio = 27

P = $\frac{P'share}{totalshare} \times 40500$

= $\frac{7}{27} \times 40500$ =Rs.10500

Q = $\frac{Q'share}{totalshare} \times 40500$

= $\frac{9}{27} \times 40500$ =Rs.13500

P = $\frac{R'share}{totalshare} \times 40500$

= $\frac{11}{27} \times 40500$ =Rs.16500

Question 83

Complete the series.167, 334, 668, 1336, (...)

A   2653

B   2681

C   2672

D   2661

Answer: C

Explanation:

167, 334, 668, 1336, (...)

$167 + 167 = 334$

$334 + 334 = 668$

$668 + 668 = 1336$

so,

$1336 + 1336 = 2672$

Question 84

The Simple Interest after 10 years at some rate will be Rs.600 on a certain sum. If the principal is trebled after 5 years, what will be the total interest at the end of tenth year?

A Rs.600

B Rs.1500

C Rs.900

D Rs.1200

Answer: D

Explanation:
let the original rate be R percent per year, the principal amount be P, time T

Given is SI = 600 = $\frac{P \times R \times T}{100}$

Hence $P \times R$ = 6000

SI for first five years will be 300 at the end of first 5 years.

When P is trebled for next five years, the SI for those five years will be = $\frac{3P \times R \times 5}{100}$ = $\frac{P \times R \times 15}{100}$ = $\frac{15 \times 6000}{100}$ = 900

so, the total interest will be 300 + 900 = 1200

Question 85

Efficiencies of P, Q, R and S in doing a job are in the ratio 2 : 3 : 5 : 4. The wages paid for the job are Rs.4200. Who is paid the largest amount and how much is paid?

A R, Rs.2000

B S, Rs.1600

C R, Rs.1500

D P, Rs.2000

Answer: C

Explanation:
Total work = lcm (10,24,6)= 120 days

P's effiency = 2x

Q's effiency = 3x

R's effiency = 5x

S's effiency = 4x

tot effiency = 14x

P'wage = $\frac{totwage}{toteffi} P'seffiency$

$\frac{4200}{14x} 2x = 600Rs$

Q'wage = $\frac{totwage}{toteffi} Q'seffiency$

$\frac{4200}{14x} 3x = 900Rs$

R'wage = $\frac{totwage}{toteffi} R'seffiency$

$\frac{4200}{14x} 5x = 1500Rs$

S'wage = $\frac{totwage}{toteffi} R'seffiency$

$\frac{4200}{14x} 4x = 1200Rs$

R paid the largest amount = 1500Rs

Question 86

A, B, C, D, E, F, G and H are sitting around a circle facing the center. B is third to the right of F and third to theleft of H. C is fourth to the left of A. A is not an immediate neighbour of F and B. E is not an immediateneighbour of B. G is second to the right of D.
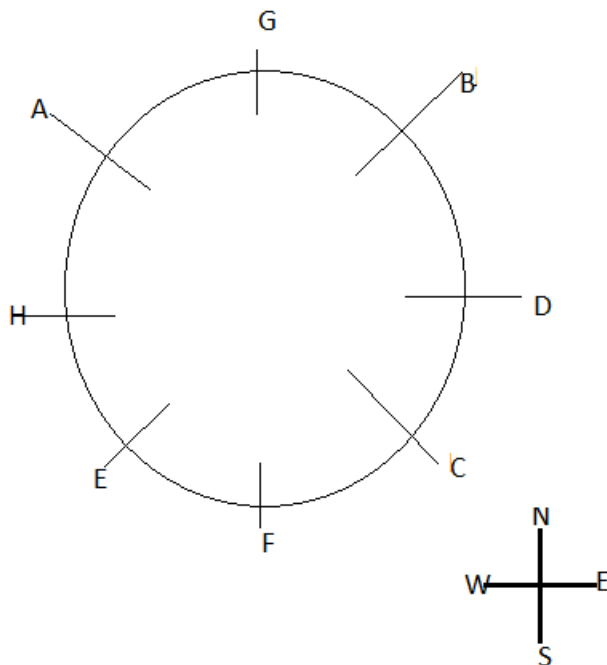Who is to the immediate right of H?

A E

B A

C F

D G

  Answer: A

Explanation:

E immediate right of H

Question 87

The town of Paranda is located on Green lake. The town of Akram is to the west of Paranda. Tokhada is to the east of Akram but to the west of Paranda. Kokran is east of Bopri but west of Tokhada and Akram. If they are all in the same district, which town is the farthest west?

A   Paranda

B   Kokran

C   Akram

D   Bopri

   Answer: D

Question 88

If 10.98 × 10.98 + 10.98K + 0.02 × 0.02 is a perfect square, then find the value of 'K'.

A   0.4

B   0.2

C   0.04

D   0.02

   Answer: C

Question 89

Which of the following options will best complete the relationship given below?
8(246)3
3(213)7
3(???)5

A   516

B   615

C   156

D   165

   Answer: C

Explanation:
8(246)3
3(213)7
3(???)5

8(246)3 = $8 \times 3 = 24$

$\qquad 2 + 4 = 6$

3(213)7 = $3 \times 7 = 21$

$\qquad 2 + 1 = 3$

3(???)5 = $3 \times 5 = 15$

$$1 + 5 = 6$$

Question 90

Which of the following has comparatively high electrical resistance and is used in the circuit to reduce current?

A   Semi conductor

B   Resistor

C   Conductor

D   Insulator

Answer: B

Question 91

In Indian history, who was also known as Alamgir?

A   Aurangzeb

B   Babur

C   Jahangir

D   Akbar Top

Answer: A

Question 92

In the right angle triangle the sides are in the ratio 1:1: $\sqrt{2}$ .find the cosAcosB-sinAsinB

A   0

B $\frac{1}{2}$

C $\frac{1}{\sqrt{2}}$

D   1

Answer: A

Question 93

Which of these sports is NOT a board (table) game

A   Squash

B   Chess

C   Carrom

D   Billiards

Answer: A

Question 94

Which mineral is essential for bones?

A Iron

B Sulphate

C Calcium

D Zinc

    Answer: C

Question 95

Simplify: $106 \times 106 + 94 \times 94$

A 23032

B 21032

C 20032

D 20072

    Answer: D

Explanation:

$106 \times 106 + 94 \times 94$

apply bodmass

106×106 = 11236

94×94 =8836

$106 \times 106 + 94 \times 94$ = 20072

Question 96

A person clapped his hands near a cliff and heard the echo after 4 seconds. What is the distance of the cliff from the person when the speed of the sound is 344 m/s?

A 300 m

B 600

C 688

D 344

    Answer: C

Explanation:

A person clapped his hands near a cliff and heard the echo after 4 seconds.

so.

the sound traveled twice the distance between him/her and the cliff.

Distance between cliff and person = $\frac{4}{2} \times 344$

= 688 m

Question 97

The common transport form of sugar in plants is?

A   Sucrose

B   Galactose

C   Fructose

D   Glucose

   Answer: A

Question 98

Which of the following is a weak base

A NH_4OH

B $Ca(OH)_2$

C   NaOH

D   KOH

   Answer: A

Question 99

Which of the following is rich in dietary fibre?

A   Apples

B   White bread

C   Noodles

D   Ice-cream

   Answer: A

Question 100

Which was the first satellite to be sent into space?

A   Vanguard

B   Rohini

C   Sputnik 1

D   Explorer 1

   Answer: C

Instructions

For the following questions answer them individually

Question 1

An alarm was set at 11 AM on Monday on a clock that was set correctly at 1 AM on Sunday, but the clock started gaining 20 seconds every 24 hours. What was the actual time when the alarm went off?

A 10:31:40 AM

B 10:51:20 AM

C 10:30:00 AM

D 11:30:00 AM

   Answer: E

Explanation:

Total time between sunday at 1 AM to monday at 11 AM =24hours + 10hours = 34 hours

Now total gain in seconds in 34 hours = $\frac{20}{24}$×34= $\frac{85}{3}$

The actual time at which alarm went off is

=10:59:(60-$\frac{85}{3}$)

=10:59: $\frac{95}{3}$

=10:59:32

Question 2

If 8 # 2 @ 4 = 12 and 5 # 4 @ 2 = 18, then what will be 4 # 8 @ 3?

A 26

B 29

C 32

D 13

   Answer: B

Explanation:
Here,

 # is ×(multiplication)

@ is -(substraction)

So,

8#2@4=12 will be 8×2-4=12

5#4@2=18 will be 5×4-2=18

Then 4#8@3 will be 4×8-3=29

Question 3

Complete the series.

A, C, A, E, A, G, A, I, A, (...)

A Q

B K

C P

D N

Answer: B

Explanation:

The pattern of series is every next A adds next consequent odd no

A + 1 = C

A + 3= E

and so on A + 9 = K

Question 4

'A' is to the south east of 'C', 'B' is to the east of 'C' and north east of 'A'. If 'D' is to the north of 'A' and north west of 'B', then what is the direction of 'C' with respect to 'D'?
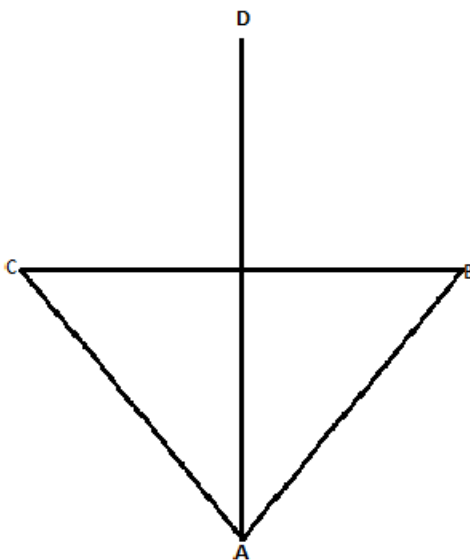
A   South west

B   North west

C   South east

D   North east

Answer: A

Explanation:

C is to the southwest of D

Question 5

Where are the Elephanta Caves located?

A   Konark

B Bengaluru

C Mumbai

D Jaipur

Answer: C

Question 6

Find the equivalent fraction pairs from the following fractions.

$$\frac{2}{5}, \frac{8}{11}, \frac{42}{63}, \frac{57}{63}, \frac{48}{120}, \frac{2}{3}$$

A $\left(\frac{2}{5}, \frac{8}{11}\right)$

B $\left(\frac{42}{63}, \frac{2}{3}\right)$

C $\left(\frac{2}{5}, \frac{48}{120}\right)$

D $\left(\frac{2}{5}, \frac{48}{120}\right)$ and $\left(\frac{42}{63}, \frac{2}{3}\right)$

Answer: D

Explanation:
Equate every fraction with other remaining fractions one by one

If the product of numerator of one and denominator of other is equal to product of denominator of one and numerator of the other than that pair is said to be equivalent

Lets take fraction $\frac{2}{5}$ and $\frac{48}{120}$

2×120 = 5 × 48

240 = 240

So, $\frac{2}{5}$ and $\frac{48}{120}$ are equivalent

Similarly

$\frac{42}{63}$ and $\frac{2}{3}$ are equivqlent

Question 7

If $\sqrt{2x-1} - \sqrt{x-4} = 2$, then find the value of 'x'.

A 13 , 5

B 6 ,-9

C -13 ,-5

D -13 ,5

Answer: A

Explanation:
$\sqrt{2x-1} = 2 + \sqrt{x-4}$

Squaring both sides we will get

$(\sqrt{(2x-1)})^2 = (2 + \sqrt{(x-4)})^2$

2x - 1 = 4 + (x-4) + 4 $\sqrt{x-4}$

2x -x - 1 = 4 $\sqrt{x-4}$

x - 1 = 4 $\sqrt{x-4}$

Again squaring both sides ,

$(x-1)^2 = 4(\sqrt{(x-4)})^2$

x^2 + 1 -2x = 16(x-4)

x^2 + 1 - 2x = 16x - 64

x^2 -18x + 65 = 0

On solving the above equation ,we get two rational roots that are 13 and 5

Question 8

A man started from a place. After walking a kilometer, he turns left. Then walking for half a kilometer, he again turns left. He is going eastwards. Towards which direction did he start?

A East

B West

C South

D North

Answer: C

Question 9

The pupil is a part of

A Kidney

B Eye

C Bone Marrow

D Gall Bladder

Answer: B

Question 10

When atoms bond together chemically, _____ are formed.

A Elements

B Molecules

C Both Elements and Alloys

D Alloys

Answer: B

Question 11

In which phase of the moon, is the moon invisible?

A Gibbous Moon

B Crescent Moon

C New Moon

D Full Moon

Answer: C

Question 12

Who was first Indian to be elected as the President of the United Nations?

A Vijayalakshmi Pandit

B Annie Besant

C Sarojini Naidu

D Indira Gandhi

Answer: A

Question 13

Edges of a cuboid are in the ratio 1 : 2 : 3. Its surface area is 88 cm^2. What is its volume?

A $120cm^3$

B $64cm^3$

C $48cm^3$

D $24cm^3$

Answer: C

Explanation:
let edges of cuboid be 1x, 2x, 3x

given surface area=88cm^2

total surface area of cuboid =2(lw+wh+hl)

$$88=2(1x*2x+2x*3x+3x*1x)$$

$$88=2*(2 \ x^2+6x^2+3x^2)$$

$$88=2*11 \ x^2$$

$$88=22 \ x^2$$

$$x^2=\frac{88}{22}$$

$$x^2=4$$

$$x=2$$

dimension of cuboid are 2cm,4cm and 6cm

volume of cuboid = l*b*h

$$=2*4*6$$

$$=48 \ cm^3$$

Question 14

Which of the following states of India is the largest producer of lignite coal?

A   Maharstra

B   Gujarath

C   Madhya pradesh

D   Tamilnadu

Answer: D

Question 15

Which type of lens is a natural lens present in the human eye?

A   Bifocal

B   Progressive

C   Convex

D   Concave

Answer: C

Question 16

The drying of milk of lime (white washing) is due to the action of-

A   Nitrogen in air

B   Oxygen in air

C   Carbon dioxide in air

D   Hydrogen in air

Answer: C

Explanation:
Whitewash cures through a reaction with carbon dioxide in the atmosphere to form calcium carbonate in the form of calcite, a type of reaction generally known as carbonation or by the more specific term, carbonation.

Question 17

Find the ODD one out from the given options.

A   APQ

B   DTJ

C   LCI

D   BJV

Answer: C

Explanation:

If we add the values of alphabet in the given options ,all have values greater than 30 except LCI whose value is less than 30

A + P + Q = 34

D + T + J = 34

L + C + I = 24

B + J + V = 37

Question 18

A and B invest some amount in the ratio 3 : 5 in a business. After 6 months, C joins them with an investment equal to that of B. In what ratio should the yearly profit be shared among A, B and C?

A 3 : 5 : 6

B 6 : 10 : 5

C 6 : 7 : 5

D 3 : 5 : 4

Answer: B

Explanation:

Ratio of investment of A and B is 3:5

A and B invests for 12 months whereas C invests for 6 months

Given investment of C is equal to that of B

Profit = investment * time

P = I * T

Ratio of their profit will be= A : B : C

3*12 : 5*12 : 5*6

6 : 10 : 5

so the ratio in which the profit would be shared among A,B and C is 6:10:5

Question 19

Interest on Rs.800 in 3 years at 4% Simple Interest equals twice the interest on Rs.300 at 8% in 'n' years,thenfind 'n'.

A 3

B 1.5

C 2

D 4

Answer: C

Explanation:

$SI = \dfrac{P*R*T}{100}$

Given,

$\dfrac{800*3*4}{100} = 2*\dfrac{300*8*n}{100}$

96=2*24n

96=48n

$n = \dfrac{96}{48}$

n=2

Question 20

In a certain code, 'JOVIAL' is written as 'NQZKEN'. How would 'FIGURE' be written in that code?

A JKKVWG

B JKKWVG

C JKKWGV

D JKWKVG

   Answer: B

Explanation:

Each letter of the word JOVIAL follows the pattern +3 and +1 alternatively .

 J + 3 = N

 O + 1 = Q

 V + 3 = Z

 I + 1 = K

 A + 3 = E

 L + 1 = N

 Similarly, FIGURE is JKKWVG

Question 21

Which of the following is NOT a root?

A cabbage

B Beetroot

C Turnip

D Radish

   Answer: A

Question 22

In a certain code language, 'TELEPHONE' is written as 'ENOHPELET'. How is 'ALIGATOR' written in that code?

A ROTAGILE

B ROTAGILA

C ROTEGILA

D ROTAGIAL

   Answer: B

Explanation:

Here the entire word is reversed from left to right

so,code for ALIGATOR is ROTAGILA

Question 23

Which of these statements is NOT true?Which of these statements is NOT true?

A   Proteins are inactive at low temperatures

B   Proteins denature by change in pH

C   Proteins are not affected by temperature

D   Proteins denature at high temperature

   Answer: C

Question 24

Who was the first Indian woman to feature on an Indian stamp after 15 August 1947 ?

A   Kasturba Gandhi

B   Saroji naidu

C   MeeraBhai

D   Rani Laxmibai

   Answer: C

Question 25

If $\tan A + \tan B = a$ and $\cot A + \cot B = b$, then $\frac{1}{a} - \frac{1}{b}$ is equal to ....

A $\sin(A + B)$

B $\cos(A + B)$

C $\cot(A + B)$

D $\tan(A + B)$

   Answer: C

Explanation:
$\tan A + \tan B = a$ ---(1)

$\cot A + \cot B = b$ ---(2)

From equation (1), $\frac{1}{tanA} + \frac{1}{tanB}$ = a

Or $\frac{cotA+cotB}{cotAcotB}$ = a

Or $\frac{B}{cotAcotB}$ =a

Or $\frac{b}{a}$ = cot A cot B

Now, $\cot(A + B)$= $\frac{cotAcotB-1}{cotA+cotB}$

$$\cot(A+B) = \frac{\frac{v}{a}-1}{b}$$

$$\cot(A+B) = \frac{b-a}{ab}$$

$$\cot(A+B) = \left(\frac{b}{ab}\right) - \left(\frac{a}{ab}\right)$$

$$\cot(A+B) = \frac{1}{a} - \frac{1}{b}$$

Question 26

Which of the following statements is FALSE?
1. Focal length of a convex lens is positive.
2. Focal length of a concave lens is negative.
3. All measurements to the right of the optic centre are positive.
4. All measurements to the left of the optic centre are positive.

A   Statement 1 only

B   Statement 2 only

C   Statement 3 only

D   Statement 4 only

   Answer: D

Question 27

What is the SI unit of pressure?

A   Newton N

B   Newton metre N-m

C   Newton per metre N / m

D   Pascal Pa

   Answer: D

Question 28

The formula of current I = _____ /time (t).

A   Resistance (R)

B   Power (P)

C   Charge (Q)

D   Volt (V)

   Answer: C

Question 29

Which of the following Articles in the Constitution grants us the Right to Equality?

A Article 32

B Article 368

C Article 14-18

D Article 23-24

  Answer: C

Question 30

Five friends A, B, C, D and E are sitting on a benchfacing north. A is sitting next to B. D is sitting next to C. D is not sitting with E. E is on the left end of the bench. C is on the second position from theright. A sits to the right of B. A and C aresitting together. Whoissitting in the middle of the bench?

A C

B D

C B

D A

  Answer: D

Explanation:
1. E is one the left end of the bench

 2.C is second from right

 3. A and C are sitting together

 CASE 1 :

  E __ A C __
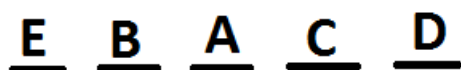
CASE 2:

  E __ __ C A

CASE 2 is not possible because, A sits right to B

1. D is sitting next to C

2. D is not sitting with E

  E B A C D

So, A is in the middle of the bench.
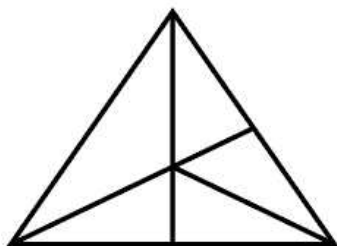
Question 31

Blue litmus when added to an acidic solution changes to

A Green

B White

C Violet

D Red

  Answer: D

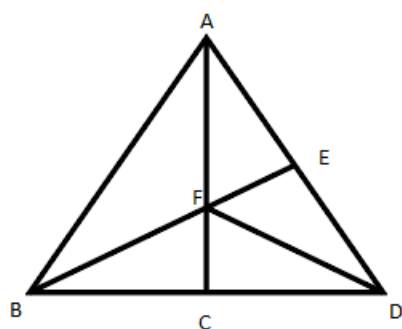**Question 32**

How many triangles are there in given figure?

A   19

B   10

C   12

D   15

  Answer: C

Explanation:

Number of small triangles given in the figure = 5 which are triangles AFB , BCF , CFD , DFE , EFA

Number of small triangles consisting of 2 triangles in the figure = 4 whch are triangles ABC ,ADC, DFA , BFD

Number of small triangles consisting of 3 triangles in the figure = 2 which are triangles BED , CAD

Number of biggest triangles consisting all the small triangles = 1 which is triangle ABD

Total triangles = 5+4+2+1

          = 12

Question 33

Which of the following is used as an antiseptic to sterilise wounds and syringes in hospitals?

A   Propanol

B   Ethyl alcohol

C   Butanol

D   Methanol

  Answer: B

Question 34

If 832.58 - 242.31 = 779.84 - a, find the value of 'a'

A 189.57

B 179.57

C 199.57

D 295.05

Answer: A

Explanation:
832.58 - 242.31 = 779.84 - a

590.27 = 779.84 - a

a = 779.84 - 590.27

a = 189.57

Question 35

Which of the following hockey players was awarded with Rajiv Gandhi Khel Ratna Award?

A Leslie Claudius

B Udham Singh

C Dhanraj Pillay

D All of the options

Answer: C

Question 36

From where is the solar energy obtained?

A Sea

B Moon

C Sun

D Stars

Answer: C

Question 37

Find the greatest numberthat can be formed outof the digits 9, 0, 8, 7, 9.

A 90987

B 99870

C 98970

D 99780

Answer: B

Explanation:
we may say the procedure of forming the greatest number is as follows

a) The smallest digit is placed at one's place

b) The next greater digit is placed at tens place

c) The next greater digit is placed at hundreds place and so on

d) The greatest digit is placed at the highest place of the number

Hence by using the above concept greatest number that can be formed out of the digits 9,0,8,7,9

Is = 99870

Question 38

Which number is a factor of all numbers?

A 2

B 0

C -1

D 1

Answer: D

Question 39

On what factor does the colour of scattered light depend upon?

A The amount of impurity

B The colour of the scattering particles

C The refractive index of the particles

D The size of the scattering particles

Answer: D

Question 40

In the given figure, the circle represents writers, triangle represents engineers, and square represents dancers. Which region represents writers and dancers but not an engineers?
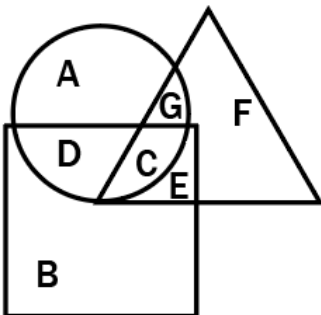
A D

B C

C   G

D   A

    Answer: A

Explanation:

In the above diagram it is clearly showing that

Circle contains = A,D,C,G it is related to writers

Triangle contains=G,C,E,F it is related to engineers

Square contains = D,C,E,B it is related to dancers

Where we got from the question the region represents writers and dancers but not an engineers?

Answer is D because from the above explanation we got to know that is writers and dancers contains D where Engineers not contains D hence the answer is chosen as D

Question 41

Total age of x and y is 15 years more than the sum of the ages of y and z. What is the value of(x - z)?

A   9

B   10

C   12

D   15

    Answer: D

Explanation:
x+y=15+(y+z)

x+y-y-z=15

x-z=15

So, (x-z) is 15 years

Question 42

Three of the following four of alphabets and numerals have the same relationship between their elements as in the case of the pair ROUT : 5487 and hence form a group. Which of the following does not belong to the group?

A   OUR : 485

B   OUT : 487

C   ROT : 587

D   TOR : 745

    Answer: C

Explanation:
ROUT: 5487

Where R=5, O=4, U=8, T=7

Where in the options R O T is given has 5 8 7

But correct answer is 5 4 7 because R=5, O=4, T=7

In these type of problems we should use eliminate options methods to get solutions in the early time

Question 43

Compare Rolling friction and Sliding friction

A   Rolling friction is always equal to sliding friction

B   Rolling friction is either greater or equal to sliding friction

C   Rolling friction is smaller than the sliding friction

D   Rolling friction is greater than sliding friction

   Answer: C

Question 44

The Union HomeSecretary of India recently launched an online portal named for the a grant for security Clearance?

A   "e-Sahaj"

B   "e-Filing"

C   "e-Clearance"

D   "e-Security"

   Answer: A

Question 45

With which of the following sports is Koneru Humpy associated?

A   Chess

B   Golf

C   Batminton

D   Hockey

   Answer: A

Question 46

Complete the series.
458, 435, 415, 398, 384, (...)

A   373

B   327

C   382

D   358

Answer: A

Question 47

Find the value of $tan10° tan15°\ tan80°\ tan75°$

A $\quad \frac{1}{3}$

B $\quad 1$

C $\quad \frac{2}{3}$

D $\quad \frac{3}{3}$

   Answer: B

Explanation:
We have (tan10 tan15 tan80 tan75)

= Where tan(90-θ)=cotθ hence tan80=tan(90-10)=cot 10

Where cotθ is the inverse of tanθ

= In the same way tan75=tan(90-15)=cot 15

= Where cot 10=(1/tan10) & cot 15=(1/tan15)

=(tan10 × tan15 × $\frac{1}{tan10}$ × $\frac{1}{tan15}$)

= 1

Question 48

When is 'National Sports Day' celebrated?

A   August 15

B   July 27

C   August 29

D   November 12

   Answer: C

Question 49

Which of these medical instruments usually has a metal needle attached to it?

A   Thermometry

B   Syringe

C   Stethoscope

D   Spatula

   Answer: B

Question 50

CE-20 is a/an _____ that was developed by ISRO .

A   Aircraft carrier

B   High thrust cryogenic engine

C   Multirole fighter aircraft D)

D   Main battle tank

   Answer: B

Question 51

f time upstream = n $\times$ time downstream and speed in still water is 'x' and speed of stream is 'y', then find x : y.

A $\frac{n}{2}$

B $\frac{n+1}{n-1}$

C $\frac{n}{n-1}$

D $\left(\frac{n-1}{n+1}\right)$

   Answer: B

Question 52

When the number 42 is misread as 24, what is the percentage error?

A   18%

B   42.86%

C   55.34%

D   28%

   Answer: B

Explanation:

A number was Read as 24 but it was actually 42. So 42-24 is the error so 18 is the error

Now 18 we have to represent as a percent if 42 so 18× $\frac{100}{42}$ is the error percent which is

Option b answer=42.86%

Question 53

Complete the series.

4, 5, 8, 15, 30, (...)

A   78

B   72

C   61

D   69

Answer: C

Explanation:

step by step explanation

Adding the next term is the concept to solve this type of problems

4+1=5

5+3=8

8+7=15

15+15=30

30+y=x

Now let's look at the series 1,3,7,15,y

1×2+1=3

3×2+1=7

7×2+1=15

15×2+1=31

y=31

Then X=30+y

     X=30+31

     X=61

Question 54

Three friends—P, Q and are living in the same locality. The house of Q is to the east of P's house, and R's house is to the south of P's house. What is the direction of R's house with respect to Q's house?

A   South

B   North

C   North-west

D   South-west

Answer: D

Question 55

Find the total surface area of a hemispherical bowl of thickness 'd' and internal radius 'r'.

A $4\pi r^2 + 4\pi rd + 3d^2$

B $\pi(4r^2 + 3rd + d^2)$

C $\pi(4r^2 + 6rd + 3d^2)$

D $4\pi r^2 + 6\pi rd + 3d^2$

Answer: C

Question 56

In which part of the body is thyroid gland situated?

A   Chest

B   Abdomen

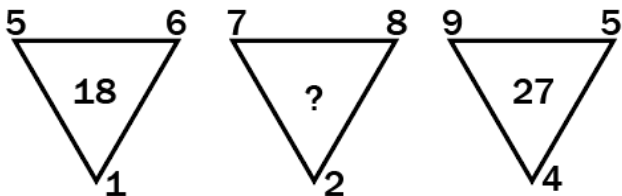C   Throat

D   Head

Answer: C

Question 57

A jar of milk contains 40% water. A part of it is replaced by another milk containing 19% water. Now the percentage of water is 26%. What quantity of milk was replaced?

A $\frac{1}{5}$

B $\frac{2}{3}$

C $\frac{1}{3}$

D $\frac{2}{5}$

Answer: B

Question 58

Choose the Alternative that best replaces the question mark in the given figure?

A   41

B   32

C   39

D   27

Answer: C

Question 59

Which of the following attractive forces exists between different layers of graphite?

A   Electromagnetic forces

B   Columbic forces

C   Gravitational forces

D Vander Waals forces

Answer: D

Question 60

The light rays that are used for eliminating bacteria in test tubes used in pathology labs are

A Microwave radiations

B Ultra Violet radiations

C X-Rays

D Infrared rays

Answer: B

Question 61

A train running at a speed of 60 km/hr crosses a pole in 9 seconds. What is the length of the train?

A 324 m

B 120 m

C 150 m

D 180 m

Answer: C

Question 62

The protein in haemoglobin is

A Albumin

B Hem

C Globin

D Globulin

Answer: C

Question 63

Solve for x and y: 9x + 3y + 12 = 0; 18x + 6y+ 24 =0

A No unique solution. There are infinitely many solutions x = 1 ; y = 7

B x = 1 ; y = 7

C x = 4 ; y = - 16

D x = 2 ; y = - 10

Answer: A

Explanation:

Take first Equation and multiply this equation by 2 9x+3y+12=0;

After multiplication of the equation it becomes 18x+6y+24=0

Then

18x+6y+24=0

18x+6y+24=0 hence by solving these two equations we got this answer it is no unique solutions

---

Question 64

Find the missing group ofalphabets in the following series. WCC....MM..RH

A CW

B WC

C MM

D HR

   Answer: D

Question 65

If doubling a number and adding 20 to the result gives the same answer as multiplying the numberby 8 and taking away 4 from the product, find the number.

A 2

B 3

C 4

D 6

   Answer: C

Explanation:

let the number be X

According to the question

2x+20=8x-4 ;

On solving the equation

8x-2x=20+4

6x=24

X=4

Question 66

Sixteen women working 7 hours a day will complete a job in 48 days. How many women are needed to complete the same job in 32 days working 12 hours a day?

A 17

B 14

C 12

D 10

    Answer: B

Explanation:

by using this trick solve this type of problems

$$\frac{womenormen \times days \times hours}{workers} = \frac{womenormen \times days \times hours}{workers}$$

Women×days×hours=women×days×hours

16×7×48=women×32×12

Women= $\frac{16 \times 7 \times 48}{32 \times 12}$

Women=14 days

Question 67

Find the value of $\cos(A+B)$**, if** $\tan A = \frac{3}{4}$ **and** $\tan B = \frac{5}{12}$ **and** A **and** B **are in quadrant I.**

A $\frac{33}{65}$

B $\frac{16}{65}$

C 1

D $\frac{15}{48}$

    Answer: A

Explanation:

Using this formula ⇒tan(a+b)=$\frac{tanA+tanB}{1-tanA.tanB}$

⇒then substitute tana and tanb values

⇒$\frac{3/4+5/12}{1-3/4 \times 5/12}$

tan(a+b)=$\frac{56}{33}$

To find the cos (a+b)

Use this formula $\sec^2 a$=1+$\tan^2 a$

Where in formula replace a by a+b

$\sec^2(a+b)$=1+$\tan^2(a+b)$

    =1+$(\frac{56}{33})^2$

    = $\frac{4225}{1089}$

$\sec^2(a+b)$= $(\frac{65}{33})^2$

Therefore sec(a+b)=$\frac{65}{33}$

And we know that The reciprocal of cosine function is secant

Hence cos(a+b)=$\frac{33}{65}$

Question 68

Who was the first Indian to receive the Nobel Prize?

A   Amartya Sen

B   Rabindranath Tagore

C   Mother Teresa

D   Har Gobind Khorana

    Answer: B

Question 69

The Simple Interest on a certain sum at the rate of 5% per annum for 3 years is Rs.1260. Find the Compound Interest for that sum at the same rate and for the same period.

A   Rs.1448.05

B   Rs.1324.05

C   Rs.1384.05

D   Rs.1428.05

    Answer: B

Explanation:

Given data in the question is clearly, Rate=5%

Time=3years

Simple interest=1260₹

Formula is Simple interest=$\frac{principal \times rate\,of\,interest \times time}{100}$

So we can write as, principal=$\frac{simple\,interest \times 100}{rate\,of\,interest \times time}$

$$= \frac{1260 \times 100}{5 \times 3}$$

Principal =8400₹

Before finding compound interest we need to find amount

Formula for amount is

Amount=principal×$(1+\frac{rate}{100})^n$

$\quad$ =8400×$(1+\frac{5}{100})^3$

$\quad$ =8400×$(\frac{105}{100})^3$

$\quad$ =8400×$(\frac{21}{20})^3$

By solving we get Amount=9724.05₹

To calculate compound interest formula is C.I=A-P

That is compound interest=Amount-principal

$\quad\quad\quad\quad\quad$ =₹(9724.05-8400)

$\quad$ Compound interest=1324.05₹

Question 70

Which number will best complete the relationship given below?

343 : 7 :: 729 : ?

A 12

B 11

C 9

D 7

Answer: C

Explanation:
where 343=7×7×7

In the same way 729=9×9×9

OR

Cube of √343=7
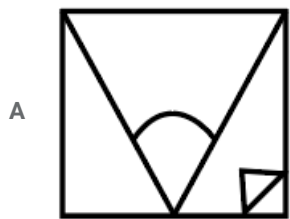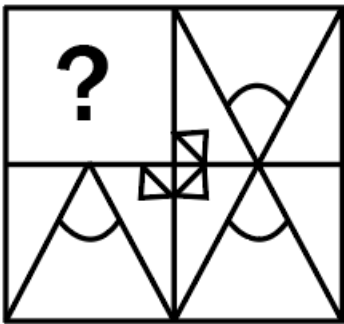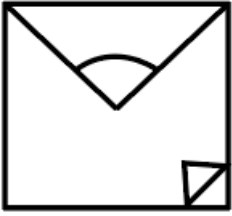
Cube of √729=9

Question 71

choose from the alternative from the figure that best completes the pattern given below?

A

B

C
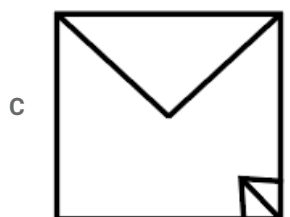
D

Answer: A

Explanation:
clearly, option A completes the original figure which looks like the figure given below

This problem is based on the concept is figure completion

Figure completion is a process to find out the missing part of an incomplete figure to complete it

In this type of questions, a figure is given and a part of it is missing, generally one by fourth part of the figure and the candidate is asked to find that missing part from the given set of answer figures

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Question 72

Which city is called 'The Pink City of India'?

A   Jaipur

B   Pathankot

C   Jodhpur

D   kalka

Answer: A

Question 73

'A' sells a suitcase to 'B' at 10% profit. 'B' sells it to 'C' at 30% profit for Rs.2860. What is the cost price for 'A'?

A   1000

B   1600

C   2000

D   2200

Answer: C

Explanation:
According to the question

Let the cost price of the suitcase for A be ₹x, then

110% of 130% of x =2860

$x \times \frac{110}{100} \times \frac{130}{100} = 2860$

$x = \frac{2860}{110} \times \frac{100}{130} \times \frac{100}{1}$

x=₹2000

Question 74

Find the average speed when the first half of a journey is done at a speed of 60 km/h and the second half at a speed of 40 km/h.

A   45 km/h

B   50 km/h

C   48 km/h

D   52 km/h

   Answer: C

Explanation:

Average speed = $\frac{(2xy)}{(x+y)}$

$= \frac{(2 \times 60 \times 40)}{(60+40)}$ = 48 km/h

Other method :

Let the total distance be 100 km

Time taken in 1st half = $\frac{50}{60} = \frac{5}{6}$

Time taken in 2nd half = $\frac{50}{40} = \frac{5}{4}$

Total time taken in 100 km = $\frac{5}{4} + \frac{4}{5} = \frac{25}{12}$

Average speed = $\frac{Total\ distance}{Total\ timetaken}$

$= \frac{100}{\frac{25}{12}} = \frac{100 \times 12}{25}$ = 48 km/h

Question 75

The most abundant metal in the earth crust is

A   Calcium

B   Aluminium

C   Iron

D   Sodium

   Answer: B

Question 76

In the following question, correct the equation by interchanging the two signs.
$4 \times 3 - 6 \div 2 + 7 = 8$

A $- \ and \ \times$

B $+ \ and \ \div$

C $+ \ and \ -$

D $\times \ and \ \div$

   Answer: C

Explanation:
$4 \times 3 - 6 \div 2 + 7 = 8$

$12 - 6 \div 2 + 7 = 8$

$12 - 3 + 7 = 8$

$12 + 3 - 7 = 8$ (We are interchnaging $-$ to $+$ and $+$ to minus)

$8 = 8$

Question 77

The length of a rectangular plot is thrice its breadth. If the area of the rectangular plot is 867 m^2,then what is the length of the rectangular plot ?

A 68 m

B 17 m

C 34 m

D 51 m

Answer: D

Explanation:
Let the breadth of the rectangle be x

So, lenght of the rectangle be 3x

Area of rectangle = $Length \times Breadth$

According to the question,

$3x \times x$=867 m^2

x^2=289

x=17

Required length = 51 m

Question 78

Complete the series.
5, 6, 14, 45, 184,(...)

A 917

B 876

C 925

D 902

Answer: C

Explanation:
5, 6, 14, 45, 184,(?)

$5 \times 1 + 1$=6

$6 \times 2 + 2$=14

$14 \times 3 + 3$=45

$45 \times 4 + 4$=184

$184 \times 5 + 5$=925

Required number = 925

Question 79

Which of the following is India's first indigenous nuclear ballistic missile submarine?

A   INS Kalvari

B   INS Arihant

C   INS Shalki

D   INS Sindhugosh

Answer: B

Explanation:
INS Arihant is **India's first indigenous nuclear submarine**. The Arihant was launched on 26 July 2009, the anniversary of Vijay Diwas (Kargil War Victory Day) by former Prime Minister Dr Manmohan Singh's wife Gursharan Kaur. INS Arihant is armed with four K-4 **submarine** launched **ballistic missile** with a range of 3,500 km.

Question 80

Simplify: $1.2 \times 2.5 \times 0.5$

A   150

B   0.15

C   15

D   1.5

Answer: D

Explanation:
$1.2 \times 2.5 \times 0.5$

$(1.2 \times 0.5) \times 2.5$

0.6×2.5

1.5

Question 81

Read the following information carefully and answer the question given below.

Eight colleagues—A,B,C,D, E, F, G and are sitting around circular table facing the center but not necessarily in the same order. Each one of them holds a different post—Manager, Secretary, Chairman, President, Vice President, Group Leader, Financial Advisor and Managing Director.
A sits third to the right of the Managing Director, and only two people sit between the Managing Director and H. The Vice President and the Secretary are immediate neighbours. Neither A nor H is a Vice President or a Secretary. The Vice President is not an immediate neighbour of the Managing Director. The Managers its second to the left of E. E is not an immediate neighbour of H. The Manager is an immediate neighbour of both the Group Leader and the Financial Advisor. The Financial Advisors its third to the right of B. B is not the Vice President. C sits to the immediate right of the Chairman. A is not the Chairman. F is not an immediate neighbour of A. G is not an immediate neighbour of the Manager.
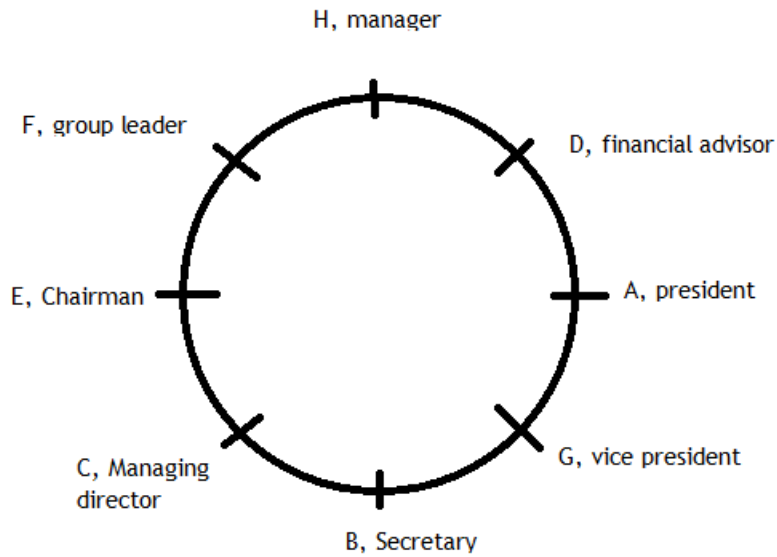
Who among the following sits third to the left of E?

A   Secreatary

Answer: D

Explanation:

H, manager

F, group leader

D, financial advisor

E, Chairman

A, president

C, Managing director

G, vice president

B, Secretary

So, Financial Advisor sits third to the left of E.

Question 82

Which number will best complete the relationship given below?
15 : 65 :: 24 : ?

A 130

B 103

C 126

D 134

Answer: C

Explanation:
$15 \times 4 + 5 = 65$

$24 \times 5 + 6 = 126$

Question 83

Find the ODD one out from the given options?

A

B

C

D
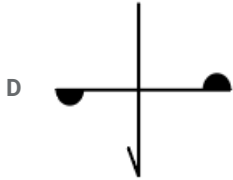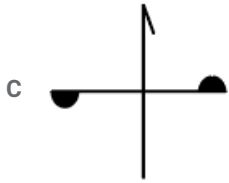
Answer: B

Question 84

A sum of Rs.16400 is borrowed to be paid back in 2 years by equal payments allowing 5% Compound Interest. Find the annual payment.

A Rs.7600

B Rs.7495

C Rs.7590

D Rs.8820

Answer: D

Explanation:

Let x be the instalment amount

As we know that for equal instalment,

$$P = \frac{x}{(1+\frac{r}{100})^1} + \frac{x}{(1+\frac{r}{100})^2}$$

$$16400 = \frac{x}{(1+\frac{5}{100})^1} + \frac{x}{(1+\frac{5}{100})^2}$$

$$16400 = \frac{20x}{21} + \frac{400x}{441}$$

$$16400 = \frac{820x}{441}$$

$$x = \frac{16400 \times 441}{820}$$

x = 8820

Required annual payment = Rs 8820

Question 85

The electron distribution in an aluminium atom is

A 2, 8, 3

B 8, 2, 3

C 2, 8, 2

D 2, 3, 8

Answer: A

Question 86

Which medical technique is used to find out stones in kidney and gall bladder, which is also used for examining the foetus during pregnancy?

A Electrocardiography

B Ultrasonography

C Magnetic resonance imaging

D Echocardiography

Answer: B

Question 87

Find the HCF of $2 \times 3^2 \times 5^2, 5 \times 3 \times 2^2 \ and \ 5^2 \times 3 \times 2^2$

A 30

B 90

C 60

D 150

Answer: A

Explanation:

$2 \times 3^2 \times 5^2$

$5 \times 3 \times 2^2$

$5^2 \times 3 \times 2^2$

Common factor = $2 \times 3 \times 5 = 30$

Question 88

Accordingto law of refraction whatis said about the incident ray, refracted ray and the normal to the interface of two transparent media at the point of incidence?

A All have the same angle

B All lie in the same plane

C All are refracted

D All have the same length

Answer: B

Question 89

With which of the following is the term 'Olfactory' associated?

A   See

B   Feel

C   Smell

D   Hear

   Answer: C

Question 90

Jaundice is a disease of the _____.

A   Liver

B   Heart

C   Lung

D   Eye

   Answer: A

Question 91

Which of the following reactions is an example of endothermic reaction?

A   Burning of natural gas

B   Decomposition of ferrous sulphate

C   Dilution of sulphuric acid

D   Dissolution of sodium hydroxide in wate

   Answer: B

Question 92

Whichof the following is NOT a contagious disease?

A   Measles

B   Arthritis

C   Influenza

D   Typhoid

   Answer: B

Question 93

If 14 * 64 = 39, 25 * 37 = 31 and 9 * 17 = 13, then whatwill be 52 * 46?

A 49

B 51

C 42

D 38

Answer: A

Explanation:
14 * 64 = 39, 7 + 32 = 39

25 * 37 = 31, 12.5 + 18.5 = 31

9 * 17 = 13, 4.5 + 8.5 = 13

So, 52 * 46 = 26 + 23 = 49

Question 94

Find the missing number in the following series.
1, 6, 15, (...), 45, 66, 91

A 25

B 28

C 26

D 27

Answer: B

Explanation:
1, 6, 15,(?), 45, 66, 91

1 + 5 = 6

6 + 9 = 15

15 + 13 = 28

28 + 17 = 45

45 + 21 = 66

66 + 25 = 91

Question 95

Which of the following transactions is the best when considering the corresponding profit percentage?

A Cost price Rs.60, profit Rs.24

B Cost price Rs.40, profit Rs.15

C Cost price Rs.36, profit Rs.18

D Cost price Rs.50, profit Rs.24

Answer: C

Explanation:

Profit % = $\frac{P \times 100}{C.P}$ = 40%

For A, Profit % = $\frac{24 \times 100}{60}$ = 40%

For B, Profit % = $\frac{15 \times 100}{40}$ = 37.5%

For C, Profit % = $\frac{18 \times 100}{36}$ = 50%

For D, Profit % = $\frac{24 \times 100}{50}$ = 48%

Required transaction = C

Question 96

Non-metals like sulphur and chlorine are found on the of the periodic table.

A   Middle

B   Right handisde

C   Zigzag

D   Left hand side

Answer: B

Question 97

Which of the following is a chemical change?

A   Evaporation of alcohol

B   Crushing a can

C   Rusting of iron

D   Melting of ice

Answer: C

Question 98

Sum of numerator and denominator of a fraction is 13. Adding 3 and 9 to the numerator and denominator respectively, the fraction becomes 2/3. What is the product of the numerator and denominator of the original fraction?

A   30

B   42

C   24

D   45

Answer: B

Explanation:

Let the numerator be x and denominator be y

$x + y = 13, x = 13 - y$ ----- i

According to the question,

$$\frac{(x+3)}{(y+9)} = \frac{2}{3}$$

$3x + 9 = 2y + 18$

$3x - 2y = 9$ -------ii

From i and ii,

$3(13 - y) - 2y = 9$

$39 - 3y - 2y = 9$

$-5y = -30$

$y = 6$

So, $x = 7$

Required product = 42

Question 99

Who among the following will be ICC's Chief Executive Officer after the 2019 World Cup?

A   KevinRoberts

B   Thabang Moroe

C   Tom Harrison

D   Manu Sawhney

Answer: D

Question 100

When was the Central Pollution Control Board constituted?

A   1970

B   1974

C   1986

D   1981

Answer: B

Instructions

For the following questions answer them individually

Question 1

According to World Health Organization, the soft water has 0 to ＿＿＿ milligram per litre as $CaCO_3$.

A 120

B 60

C 30

D 90

   Answer: B

Question 2

Find the ODD one out from the given options.

A Bus

B Auto

C Van

D Car

   Answer: B

Explanation:

Bus, Van, Car are 4 wheeler

whereas, Auto is 3 Wheeler

Question 3

Ten years ago, the ages of father and son were in the ratio 3 : 1. Ten years hence this ratio will be 2 : 1. What is the age of the father now ?

A 70

B 75

C 65

D 55

   Answer: A

Question 4

If 'PEOPLE' is coded as 'PLPOEE', how is 'TREND' coded?

A TNERD

B TREDN

C DNERT

D NDETR

   Answer: A

Explanation:
PEOPLE' is coded as 'PLPOEE

here first and last letter is same P,E

middle letters interchange in themselves OP PO

second last and second first E L =L E

similarly With TREND

here first and last letter is same T,D

middle letters interchange in themselves E E

second last and second first R N = N R

TNERD

Question 5

When a decomposition reaction is carried out by heating, it is called?

A Thermal decomposition

B Electrolytic decomposition

C Photo decomposition reaction

D Non electrolytic decomposition reaction

   Answer: A

Question 6

If the selling price is doubled, then profit triples. What is the profit per cent?

A 100%

B 120%

C 80%

D 60%

   Answer: A

Explanation:
let the selling price be SP

Cost price be CP

profit be P

As we know that

 P=SP-CP

ATQ

3P= 2SP-CP

3 (SP-CP)=2SP-CP

SP=2CP

Profit% = $\frac{(SP-CP)}{100}CP$

=100%

Question 7

Sneha wants to go to the market. She starts from her home which is in the north and comes to the crossing.The road to her left ends in a park and straight ahead is the office complex, and market is located direct opposite to the park. In which direction is the market to the crossing?

A   South

B   North

C   East

D   West

Answer: D

Question 8

Which of these places was founded in 1577 by Guru Ram Das?

A   Ludhiana

B   Amritsar

C   Chandigarh

D   Jalandhar

Answer: B

Question 9

Who is the present captain of India's men National field hockey team?

A   Akashdeep Singh

B   Harmanpreet Singh

C   Rupinder Pal Singh

D   Manpreet Singh

Answer: D

Question 10

Six boys - A, B, C, D, E, F are standing in one row, and six girls—G, H, I, J, K, L are standing in another row in such a way that each girl faces one boy, not necessarily in the same order. G is to the immediate right of the girl who is facing E, the boy at the extreme right. Only B is between D and E. F is to the immediate left of A and to the immediate right of C. I is facing A and is to the immediate left of H. L is third to the left of J.

Which of the following boys is to the immediate left of D?

A F

B B

C A

D E

Answer: C

Question 11

If the frequency of a sound wave is 100 Hz, then what is its time period?

A 0.1 second

B 0.01 second

C 10 seconds

D 1 second

Answer: B

Question 12

The cooking gas (LPG) mainly consists of ?

A Ethene

B Propene

C Propane and Butane

D Ethyne

Answer: C

Question 13

Complete the series.

4, 4, 8, 24, 96, (...)

A 461

B 448

C 493

D 480

Answer: D

Explanation:
4, 4, 8, 24, 96, (...)

$4 \times 1 = 4$

$4 \times 2 = 8$

$8 \times 3 = 24$

$24 \times 4 = 96$

so

$96 \times 5 = 480$

Question 14

A right circular cylinder just encloses a sphere of radius 6 cm. If A and B are their curved surface areas, then:

A Cannot be determined

B A = B

C A < B

D A > B

   Answer: B

Question 15

Complete the series.

38, 35, 34, 31, 30, (…)

A 28

B 27

C 25

D 24

   Answer: B

Question 16

Which of these diseases is communicable?

A Plague

B Cancer

C Diabetes

D Hypertension

   Answer: A

Question 17

Complete the series.

B, C, F, G, J, K, (…)

A O

B M

C N

D P

Answer: C

Question 18

The liquid portion of blood is called

A Serum

B Lymph

C Water

D Plasma

Answer: D

Question 19

What day of the week will 1 January 2022 be?

A Saturday

B Monday

C Thursday

D Sunday

Answer: A

Question 20

Which of these is a hill station in Rajasthan?

A Panchgani

B Nainital

C Mount Abu

D Kasauli

Answer: C

Question 21

If a convex lens forms a real inverted same size image at 30 cm, then the object is placed _____ in front of the lens.

A 30 cm

B 40 cm

C 10 cm

D 20 cm

Answer: A

Question 22

Find the HCF of 513, 1134 and 1215.

A 36

B 27

C 18

D 33

Answer: B

Explanation:

take the hcf of 513,1134,1215 by taking factorization

$513 = 3 \times 3 \times 3 \times 19$

$1134 = 3 \times 2 \times 3 \times 3 \times 3 \times 7$

$1215 = 3 \times 3 \times 3 \times 3 \times 3 \times 5$

by taking common

$hcf = 3 \times 3 \times 3 = 27$

Question 23

A sum of Rs.25000 amounts to Rs.32000 in 4 years. What is the rate of interest?

A 8%

B 6%

C 6.5%

D 7%

Answer: D

Explanation:

S.I= $\frac{P \times R \times T}{100}$

7000 = $\frac{25000 \times R \times 4}{100}$

T = 7 years

Question 24

Find the least number that is divisible by 12, 18, 21, and 30

A 1020

B 1260

C 1620

D 1060

Answer: B

Explanation:

$12 = 2 \times 2 \times 3$

$18 = 2 \times 3 \times 3$

$21 = 3 \times 7$

$30 = 2 \times 3 \times 5$

Select the common terms

LCM = $2 \times 2 \times 3 \times 3 \times 5 \times 7$

= 1260

Question 25

How is the ammeter connected in all circuits to measure current flowing in it?

A   In parallel

B   Across

C   In series

D   In line

    Answer: C

Question 26

In a certain code, 'HUNTER' is coded as 'UHNTRE'. How is 'MANAGE' coded in that code?

A   MNAAEG

B   MAANGE

C   AMNAEG

D   EGNAAM

    Answer: C

Explanation:

'HUNTER' is coded as 'UHNTRE'

here last two letter interchange in themselves ER RE

middle letters are same NT

first two letter interchange in themselves HU UH

similarly

MANAGE

here last two letter interchange in themselves GE EG

middle letters are same NA

first two letter interchange in themselves MA AM

AMNAEG

Question 27

Simplify: $\dfrac{\sin 3A}{\sin A} + \dfrac{\cos 3A}{\cos A}$

A $2\sin A$

B $2\cos A$

C $4\cos 2A$

D -2

Answer: C

Question 28

In which part of the human ear is amplification of sound done by 3 bones?

A Middle ear

B Auditory nerve

C Inner ear

D Outer ear

Answer: A

Question 29

Pure ghee costing Rs.100 per kilogram and vegetable oil costing Rs.50 per kilogram are mixed in some ratio and sold at Rs.96 per kilogram so as to gain 20%. In what ratio is ghee and oil mixed?

A 3 : 4

B 3 : 2

C 2 : 3

D 4 : 3

Answer: B

Explanation:

Cost of pure ghee= Rs.100 per kg

After adulteration cost of ghee = Rs.50 per kg

Selling price of mixture = Rs.96 per kg

Profit=20%

To find the ratio of the mixture

profit = $96 \times \dfrac{20}{100}$

=approx. RS 19

 cost price=selling price - profit

=96-19

= RS 77

Rounding off to nearest 10 that is 77=80

Now by using the allegation rule we have

Cost of 1 kg ghee = 100, cost of 1 kg vegetable oil=50

Cost price =80

Hence 80-50=30

So 100-80=20

=30:20

=3:2

Question 30

Which of the following is a use of ethanol?

A All of the options

B Manufacturing paints

C In alcoholic drinks

D In cough syrups

Answer: A

Question 31

What is the length of the greatest rod that can be placed in a hall 12 m long, 4 m broad and 3 m high?

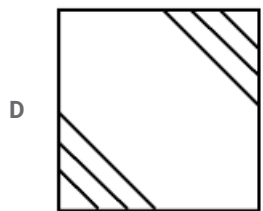**A** 9 m

B 18 m
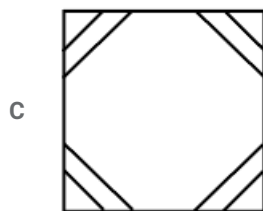
C 13 m

D 15 m
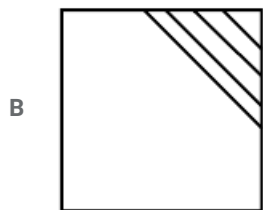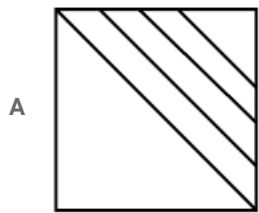
Answer: C
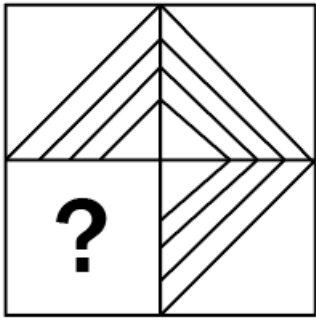
Question 32

A group of more than three atoms carrying a charge is known as _____ ion.

A Di atomic

B Mono atomic

C Tri atomic

D Polyatomic

Answer: D

Question 33

Choose the alternatives from the figure that best completes the pattern given below?

A

B

C

D

Answer: A

Question 34

Which of these plants is mainly found in deserts?

A   Teak

B   Cactus
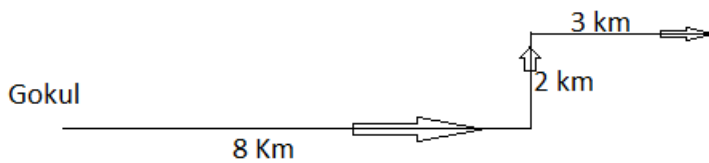
C   Oak

D   Eucalyptus

Answer: B

Question 35

Gokul walks 8 km from his home towards east. He turns left to cover 2 km, and he turns right and walks 3 km. Find the distance he travelled towards east?

A 5 km

B 8 km

C 14 km

D 11 km

Answer: D

Explanation:

total distance = 8 km + 3 km = 11km east

Question 36

Which of the following is NOT a celestial object?

A Stars

B Sun

C Ocean

D Planets

Answer: C

Question 37

Which of the following diseases is a disease of the lung?

A Tuberculosis

B Cancer

C Tetanus

D Allergy

Answer: A

Question 38

What is the shape of the Cocci bacteria?

A Spherical

B Rod shaped

C Comma-shaped

D Spiral

Answer: A

Question 39

Which organ in the human body regulates the sugar content in the blood?

A Pancreas

B Liver

C Stomach

D Gall bladder

Answer: A

Question 40

Simplify : $5 + 4 \times 5^2 + 4 \times 5^3 + 4 \times 5^4 + 4 \times 5^5$

A 5^8

B 5^4

C 5^6

D 5^2

Answer: C

Question 41

In what time will a train 100 m long cross an electric pole, if its speed is 144 km/h?

A 2.5 seconds

B 12.5 seconds

C 4.25 seconds

D 5 seconds

Answer: A

Question 42

Where did Google launch its first drone delivery service in 2019?

A India

B United States

C Australia

D England

Answer: C

Question 43

What is the minimum temperature to which a fuel must be heated so that it may catch fire and start burning?

A Normal temperature

B Neutral temperature

C Boiling temperature

D Ignition temperature

Answer: D

Question 44

The acceleration experienced by an object during a free fall is independent of its-

A Velocity

B Pressure

C Mass

D Energy

Answer: C

Question 45

What is the aim of the 'Young Scientist Programme' for students, which was recently launched by ISRO?

A To impart basic knowledge of research

B To impart basic knowledge of space technology

C   To impart basic knowledge of biology

D   To impart basic knowledge of computers

Answer: B

Question 46

P and Q can do a work individually in 15 days and 20 days respectively. Find the respective ratio of their efficiencies.

A   5 : 4

B   4: 5

C   4 : 3

D   3 : 4

Answer: C

Question 47

In universal indicators, red colour shows a pH of

A   0 to 3

B   4 to 7

C   12 to 14

D   8 to 11

Answer: A

Question 48

Two stations A and B are 110 km apart on a straight line. One train starts from A at 7 a.m. and travels towards B at 20 km/h. Another train starts from B at 8 a.m. and travels towards A at a speed of 25 km/h. At what time will they meet?

A   11 a.m.

B   10 a.m.

C   9 a.m.

D   10.30 a.m.

Answer: D

Question 49

What digit will come in the place of 'a' in the number 1a5a01, if it is divisible by 11?

A   5

B   6

C   4

D   8

Answer: D

Explanation:
According to the **divisibility rule** of **11**, we must subtract and then add the digits in an alternating pattern from left to right. If the answer is 0 or **11**, then the result is **divisible by 11**.

here in this no.

1a5a01

we apply the rule

$$1 - a + 5 - a + 0 - 1 = 5 - 2a$$

5 -2a must be divisible by 2

so we have to check the option

5 =a

5-2a =-5

6

5-2a =-7

4

5-2a =-3

8

5-2a =-11 which is divisible by 11

Question 50

Which disease is prevented with the help of Salk's vaccine?

A   Measles

B   Polio

C   Chicken pox

D   Small pox

   Answer: B

Question 51

Find the wrong number in the given series.

6, 12, 21, 36, 56, 81

A   21

B   12

C   36

D   56

   Answer: B

Explanation:
6, 12, 21, 36, 56, 81

$12 - 6 = 6$

$21 - 12 = 9$

$36 - 21 = 15$

$56 - 36 = 20$

$81 - 56 = 25$

so wrong term is first two it should be

$11 - 6 = 5$

$21 - 11 = 10$

so wrong term is 12

Question 52

To which of the following family of elements does potassium belong?

A   Halogens

B   Alkaline earth metals

C   Noble gases

D   Alkali metals

   Answer: D

Question 53

P takes 10 days and Q takes 24 days to complete a work. With the help of R, they all work together and finish it in 6 days. Find the payment they receive out of a total remuneration of Rs.1000.

A   P-Rs.500; Q-Rs.400; R-Rs.100

B   P-Rs.400; Q-Rs.350; R-Rs.250

C   P-Rs.600; Q-Rs.250; R-Rs.150

D   P-Rs.500; Q-Rs.350; R-Rs.150

   Answer: C

Explanation:
P = 10 days

Q= 24 days

P+Q+R = 6 days

Total work = lcm (10,24,6)= 120 days

P's effiency = $120 \div 10$ =12

Q's effiency = $120 \div 24$ =5

(P+Q+R)'s effiency = $120 \div 6$ = 20

to find out R's effi = (P+Q+R)'s effiency -P's effiency-Q's effiency = 20 -12-5 = 3

P'wage = $\frac{totwage}{toteffi} P'seffiency$

   $\frac{1000}{20} 12 = 600Rs$

Q'wage = $\frac{totwage}{toteffi} Q'seffiency$

$\frac{1000}{20} 5 = 250 Rs$

R'wage = $\frac{totwage}{toteffi} R'seffiency$

$\frac{1000}{20} 3 = 150 Rs$

Question 54

Which of the following will best complete the relationship given below?
BAT : YZG :: EMU : ?

A VFN

B FNV

C FVN

D VNF

Answer: D

Explanation:
BAT : YZG :: EMU : ?

A B C D E F G H
1 2 3 4 5 6 7 8
I J K L M N O P
9 10111213141516
Q R S T U V W X
1718192021222324
Y Z
2526
 here B is opposite to Y

 A is opposite to Z

 T is opposite to G

similarly

E is opposite to V

M is opposite to N

U is opposite to F

Question 55

If '$+$' means '$-$', '$-$' means '$+$', '$\div$' means '$\times$' and '$\times$' means '$\div$', then

$18 \times 3 \div 4 - 5 + 3 = ?$

A 21

B 29

C 26

D 31

Answer: C

Explanation:
'$+$' means '$-$', '$-$' means '$+$', '$\div$' means '$\times$' and '$\times$' means '$\div$'

$18 \times 3 \div 4 - 5 + 3 = ?$

so

$18 \div 3 \times 4 + 5 - 3 = ?$

apply BODMAS rule

$6 \times 4 + 5 - 3 = ?$

$24 + 5 - 3 = ?$

=26

Question 56

In some machines, why is using oil as a lubricant not advisable?

A   Oil makes the movement of the parts tough

B   Sometimes oil leaks into the parts of the machine causing undesirable obstruction of working

C   Oil sometimes increases friction

D   Oil makes the machine parts and the whole place dirty

Answer: B

Question 57

Vedha walked 15 m from point A in the east direction and turned south and walked 8 m to reach point B. Whatis the distance between point A and point B?

A   12 m

B   18 m

C   15 m

D   17 m

Answer: D

Question 58

Which satellite is dedicated as India's first multi wavelength space observatory?

A   Astrosat

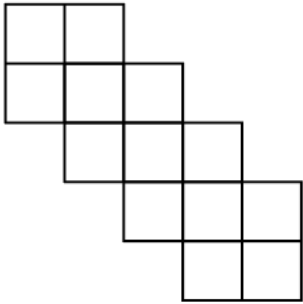B   SARAL

C   SRMSAT

D   Jugnu

Answer: A

Question 59

Which organ in the human body helps to maintain balance?

A Heart

B Liver

C Ear

D Brain

Answer: D

Question 60

How many squares are their in the given figure?

A 15

B 21

C 19

D 17

Answer: D

Question 61

What is the name of the border line between India and China?

A Radcliffe Line

B Line of Control

C Jaigaon

D McMohan Line

Answer: D

Explanation:
The McMahon **Line** is the demarcation **line between** the Tibetan region of **China** and the North-east region of **India** proposed by British colonial administrator Henry McMahon at the 1914 Simla Convention signed **between** British and Tibetan representatives

Question 62

A certain sum of money invested at Compound Interest, compounded annually, amounts to Rs.338 at the rate of 4% per annum for 2 years. Find the sum.

A Rs.320

B Rs.318.52

C Rs.315

D Rs.312.50

 Answer: D

Question 63

Two trains 100 m and 80 m in length are moving in the same direction, with speeds 51 m/s and 42 m/s respectively. In what time will they cross each other?

A 18 seconds

B 30 seconds

C 25 seconds

D 20 seconds

 Answer: D

Explanation:

speed = $51m/s - 42m/s = 9m/s$

speed = $\frac{length of train 1 + length of train 2}{time}$

9 = $\frac{100+80}{time}$

time = $\frac{120}{9}$

 20 seconds

Question 64

If $3\left(\frac{2}{5}\right) + 1\left(\frac{2}{9}\right) = 4\left(\frac{4}{5}\right) - a$, find the value of '$a$'.

A $\frac{6}{25}$

B $\frac{16}{9}$

C $\frac{4}{45}$

D $\frac{11}{45}$

 Answer: B

Explanation:

$3\left(\frac{2}{5}\right) + 1\left(\frac{2}{9}\right) = 4\left(\frac{4}{5}\right) - a$

break the right hand part

$3\left(\frac{2}{5}\right) + 1\left(\frac{2}{9}\right) = 4 \times 2\left(\frac{2}{5}\right) - a$

$3\left(\frac{2}{5}\right) + 1\left(\frac{2}{9}\right) = 8\left(\frac{2}{5}\right) - a$

$1\left(\frac{2}{9}\right) + a = 8\left(\frac{2}{5}\right) - 3\left(\frac{2}{5}\right)$

$1\left(\frac{2}{9}\right) + a = 5\left(\frac{2}{5}\right)$

$1\left(\frac{2}{9}\right) + a = 2$

$a = 2 - 1\left(\frac{2}{9}\right)$

$= \frac{16}{9}$

Question 65

A sum of Rs.1100 was taken as a loan. This is to be paid in two equal instalments. If the rate of interest is 20% per annum, compounded annually, find the amount payable in each instalment.

A   Rs.720

B   Rs.620

C   Rs.670

D   Rs.600

Answer: A

Question 66

Find the ODD one out from the given options.

A   Leopard

B   Cougar

C   Elephant

D   Cheetah

Answer: C

Question 67

Find the missing number in the following series.

8 , 6 , 8 , 14 , 30 , (…) , 233

A   77

B   55

C   72

D   60

Answer: A

Question 68

Archery is the national game of?

A   Bhutan

B   Denmark

C   Sri Lanka

D Switzerland

Answer: A

Question 69

Which Indian city is famous for the embroidery work called 'Chikankari'?

A Hyderabad

B Puri

C Ahmedabad

D Lucknow

Answer: D

Question 70

If 9 # 3 @ 4 = 31 and 8 # 7 @ 2 = 58, then what will be 5 # 6 @ 7?

A 40

B 47

C 37

D 52

Answer: C

Explanation:

9 # 3 @ 4 = 31 and 8 # 7 @ 2 = 58

the no. we are getting is big so,mul and add plus should be there

consider # = multily

@ = plus

9 # 3 @ 4 = 31

$9 \times 3 + 4$

apply bodmas rule

$27 + 4$ = 31

similary

$8 \times 7 + 2$

apply bodmas rule

$56 + 2$ = 58

so

$5 \times 6 + 7$

apply bodmas rule

$30 + 7$ = 37

Question 71

If $\frac{a}{b}$ is a fraction, where $a = b - 3$ and $\frac{(a+10)}{b} - \frac{a}{b} = \frac{10}{7}$, then find $\frac{a}{b}$.

A $\frac{4}{7}$

B $\frac{5}{8}$

C $\frac{8}{11}$

D $\frac{2}{5}$

Answer: A

Question 72

K-shell is the _____ energy level.

A Third

B Fourth

C First

D Second

Answer: C

Question 73

Read the following information carefully and answer the question given below.
A, B, C, D, E, F, G and H are sitting around a circle facing the center. B is third to the right of F and third to the left of H. C is fourth to the left of A. A is not an immediate neighbor of F and B. E is not an immediate neighbor of B. G is second to the right of D.

A E and D

B H and D

C C and E

D C and H

Answer: C

Question 74

Which of the following districts won the platinum of Web Ratna Award in Digital India Awards 2018?

A Chennai

B Kurukshetra

C Aurangabad

D Koraput

Answer: B

Question 75

Which of the following former Indian Presidents served for the shortest duration?

A   Dr. Zakir Husain

B   Dr. Rajendra Prasad

C   R. Venkataraman

D   Neelam S. Reddy

   Answer: A

Question 76

Which are the BRIC countries?

A   Brazil, Russia, India and Canada

B   Britain, Russia, India and China

C   Brazil, Russia, India and China

D   Britain, Russia, India and Canada

   Answer: C

Question 77

The process of movement of molecules from a higher concentration place to a lower concentration places is

A   Condensation

B   Evaporation

C   Diffusion

D   Sublimation

   Answer: C

Question 78

If $a(a + b + c) = 45; b(a + b + c) = 75$ and $c(a + b + c) = 105$, then find the value of $a^2 + b^2 + c^2$.

A   83

B   625

C   225

D   90

   Answer: A

Explanation:
ATQ

$a \times (a + b + c)$ = 45 (i)

$b \times (a + b + c)$ = 75 (ii)

$c \times (a + b + c)$ = 105 (iii)

Adding (i), (ii) and (iii), we get:

  (a + b + c) (a + b + c) =45 + 75 + 105

(a + b + c) (a + b + c) = 225

Taking square root on both sides of above eqn we get:

(a + b + c) = 15

Put the value of (a + b + c) in eqn.s (i), (ii) and (iii), we get:

$a \times 15 = 45$

$b \times 15 = 75$

$c \times 15 = 105$

so,

a = 3, b = 5, c = 7

So, we have

(a^2 + b^2 + c^2) = 3^2 + 5^2 + 7^2

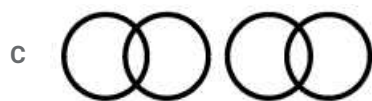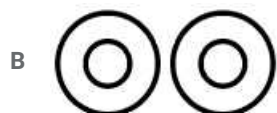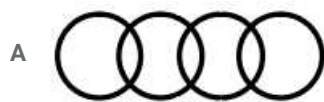= 9 + 25 + 49

=83.

Question 79

Choose the figure that best represents the relation ship among the classes given below?

Teachers, Language, Hindi, Educated

A

B

C

D

 Answer: B

Explanation:
teacher should be educated

whereas hindi is language

Question 80

The price of a book was first increased by 25% and then reduced by 20%. What is the change in its original price?

A   10% increase

B   No change

C   5% decrease

D   10% decrease

   Answer: B

Explanation:

let the price of the book be Rs100

Increase 25% = $\frac{125}{100}100$

= 125Rs

decrease 20% = $\frac{80}{100}125$

=100Rs

Net change in the price

= $\frac{100-100}{100\times100}$

= no change

Question 81

What should be the smallest integer in place of * if the number 502*693 is exactly divisible by 9?

A   3

B   2

C   4

D   0

   Answer: B

Explanation:

number 502*693

if the sum of the digits are evenly **divisible** by 9

$5 + 0 + 2 + * + 6 + 9 + 3 = 25$

which is not divisible 9 so, by adding 2 which is smallest no. we get 27

Question 82

Sodium metal is stored in?

A   Kerosene

B   Ether

C   Water

D   Acetone

   Answer: A

Question 83

Which nutrient provides the maximum energy on breakdown?

A   Fibres

B   Proteins

C   Fats

D   Carbohydrates

   Answer: C

Question 84

If and b are supplementary angles find the value of

$$\frac{\tan A + \tan B}{1 - \tan A \tan B}$$

A   0

B   1

C   -1

D $\frac{1}{2}$

   Answer: A

Question 85

Find the ODD one out from the given options.

A   162, 18

B   117, 13

C   171, 19

D   304, 16

   Answer: D

Question 86

The radius of a sphere is 3 times the radius of a cylinder. If their volumes are equal, find the height of the cylinder.

A   3 times its radius

B   27 times its radius

C   36 times its radius

D   Equal to its radius

   Answer: C

Explanation:

radius of sphere = 3 radius of cyclinder

let R be the radius of sphere

and r be the the radius of cyclinder

R = 3r

vol of sphere =vol of cyclinder

$\frac{4}{3}\pi \times R^3 = \pi \times r^2 \times h$

$\frac{4}{3}\pi \times (3r)^3 = \pi \times r^2 \times h$

h = 36r

h =36 times its radius

6

Question 87

Limestone, chalk and marble are different forms of?

A   Sodium hydroxide

B   Ammonium hydroxide

C   Calcium hydroxide

D   Calcium carbonate

   Answer: C

Question 88

Simplify: $(5 + 0.5 + 0.005 + 0.0005 + 0.05) \times 2$

A   11.011

B   10.111

C   11.111

D   11.001

   Answer: C

Explanation:

$(5 + 0.5 + 0.005 + 0.0005 + 0.05) \times 2$

$(5.0000 + 0.5000 + 0.0050 + 0.0005 + 0.0500) \times 2$

now add the no.

5.5555×2

11.111

Question 89

Find the value of $\sin 60° \cos 30° + \cos 60° \sin 30°.$

A $\frac{1}{2}$

B $\frac{3}{4}$

C 1

D $\frac{1}{4}$

   Answer: C

Explanation:

$\sin 60° \cos 30° + \cos 60° \sin 30°$

$\sin 60° = \frac{\sqrt{3}}{2}$

$\cos 30° = \frac{\sqrt{3}}{2}$

$\cos 60° = \frac{1}{2}$

$\sin 30° = \frac{1}{2}$

$\sin 60° \cos 30° + \cos 60° \sin 30°$

$\frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{2} + \frac{1}{2} \times \frac{1}{2} = 1$

Question 90

If in a certain code 'COLOURED' is written as 'XDPDNAQZ', then how will 'ORDER' be written in that code?

A DAZQA

B DAQZA

C ADZQA

D DAZAQ

   Answer: A

Question 91

Which of the following is equal to Hertz?

A s^{-1}

B $m\,s^{-2}$

C s

D m/s

   Answer: A

Question 92

Which Article of Indian Constitution gives the procedure for impeachment of the President?

A Article 42

B Article 59

C Article 48

D Article 61

   Answer: D

Question 93

which number will best complete the relationship given below?

6 : 24 :: 120 : ?

A 212

B 215

C 229

D 210

   Answer: D

Question 94

Complete the series.
ABZ, BCY, CDX, DEW, (...)

A FEV

B DEV

C DEF

D EFV

   Answer: D

Question 95

Choose the best alternative that best replaces the ? in the given figure?

16	36	64
4	6	?
15	13	11
11	7	3

A 8

B 3

C 6

D 5

Answer: A

Question 96

An ammeter has _____ resistance, so that it passes maximum current through it.

A Infinite

B Very less

C Very high

D High

Answer: B

Question 97

Which of the following teams won the final in Vijay-Hazare Trophy 2018?

A Rajasthan

B Mumbai

C Delhi

D Punjab

Answer: B

Question 98

Which is the longest muscle in the body?

A Gracilis

B Soleus

C Sartorius

D Trapezius

Answer: C

Question 99

A vessel contains 20 litres containing milk and water in the ratio 3 : 2. Ten litres of this milk is removed and replaced with equal amount of pure milk. If this process is repeated once again, find the final ratio of milk and water.

A 4 : 1

B 5 : 3

C 9 : 1

D 1 : 4

Answer: C

vessel contains 20 l in the ratio milk and water of 3: 2

so

3x +2x = 20l

x = 4 l

so ,milk = 12l

    water = 8 l

ATQ

Ten litres of this milk is removed and replaced with equal amount of pure milk

when we removed anything the ratio remains same

so milk and water ratio is 3: 2 only

 now vessel contains 10 l in the ratio milk and water of 3: 2

3x +2x = 10l

x = 2 l

so ,milk = 6l

water = 4 l

and 10 l pure milk is added so milk = 16 l and water = 4 l

ratio = 4 : 1

this process is repeated once again that is ,Ten litres of this milk is removed and replaced with equal amount of pure milk

so milk and water ratio is 4 : 1 only

now vessel contains 10 l in the ratio milk and water of 4 : 1

4x +x = 10l

x = 2 l

so ,milk = 8l

water = 2l

and 10 l pure milk is added so milk = 18 l and water = 2 l

ratio = 9 : 1

Question 100

Find the least perfect square that is divisible by 21, 36 and 66.

A 214344

B 213444

C 231444

D 214434

   Answer: B

Explanation:
21, 36 and 66.

we have to first calculate lcm

21 = 3×7

36 =$2 \times 2 \times 3 \times 3$

66=$2 \times 3 \times 11$

lcm = $2 \times 2 \times 3 \times 3 \times 7 \times 11 = 2772$

so the no = $\frac{213444}{2772} = 77$