

RRB JE
27th May 2019
Shift-1

Instructions

For the following questions answer them individually

Question 1

By whom was the modern periodic table given?

- A Bohr
- B Mendeleev
- C Einstein
- D Mosley

Answer: B

Question 2

Fix the symbols +, -, ×, ÷ appropriately in the box to fit the equation given here.

$$100 \square 25 \square 5 \square 5 \square 21 = 0$$

- A -, ÷, ÷, ×
- B ÷, +, ×, -
- C ÷, ×, -, +
- D ÷, -, ×, +

Answer: D

Explanation:

$$100 \square 25 \square 5 \square 5 \square 21 = 0$$

$$100 \div 25 - 5 \times 5 + 21 = 0$$

$$4 - 5 \times 5 + 21 = 0$$

$$4 - 25 + 21 = 0$$

$$0 = 0$$

Question 3

Complete the series.

5, 30, 25, 125, 120, 480, (...)

- A 483
- B 528
- C 498
- D 475

Answer: D

Explanation:

5, 30, 25, 125, 120, 480, (...)

$$5 \times 6 = 30$$

$$30 - 25 = 5$$

$$25 \times 5 = 125$$

$$125 - 120 = 5$$

$$120 \times 4 = 480$$

so next

$$480 - 475 = 5$$

Question 4

Who has the power to proclaim the state of emergency in India?

- A Chief Justice of India
- B Vice-President
- C President
- D Prime Minister

Answer: C

Question 5

Which of the following will best complete the relationship given below?

TEF : UGH :: KPQ : ?

- A LRS
- B LSR
- C NRS
- D RSL

Answer: A

Explanation:

TEF : UGH :: KPQ : ?

After T U comes

so

After K L will come

after EF GH comes

so

After PQ RS will come

LRS

Question 6

Which of the following is a waterborne disease?

- A Malaria
- B Cholera
- C Small pox
- D Influenza

Answer: B

Question 7

Reduce to lowest terms $\frac{368}{575}$.

A $\frac{25}{29}$

B $\frac{28}{29}$

C $\frac{16}{25}$

D $\frac{30}{25}$

Answer: C

Explanation:

$$\frac{368}{575}$$

both the number is factor of 23

$$\frac{23 \times 16}{23 \times 25}$$

$$\frac{16}{25}$$

Question 8

Complete the series.

2, 3, 7, 34, 50, (...)

A 184

B 175

C 193

D 163

Answer: B

Explanation:

2, 3, 7, 34, 50, (...)

Addition of squares and cubes

$$2 + 1^3 = 3$$

$$3 + 2^2 = 7$$

$$7 + 3^3 = 34$$

$$34 + 4^2 = 50$$

so

$$50 + 5^3 = 175$$

Question 9

If $\sin \theta + \sin^2 \theta = 1$, then find $\cos^2 \theta + \cos^4 \theta$

- A 1
- B -1
- C 2
- D -2

Answer: A

Question 10

Which is the strongest bone in the human body?

- A Thigh bone
- B Spinal cord
- C Ankle
- D Shin bone

Answer: A

Question 11

A heterogeneous mixture in which the solute particles do not dissolve but remain suspended throughout the bulk of the medium is known as-

- A Suspension
- B Unsaturated solution
- C Colloids
- D Saturated solution

Answer: A

Question 12

Simplify: $\frac{0.1 \times 0.1 + 0.2 \times 0.2}{0.3 \times 0.3 + 0.6 \times 0.6}$

- A $\frac{1}{3}$
- B $\frac{2}{9}$
- C $\frac{2}{3}$
- D $\frac{1}{9}$

Answer: D

Explanation:

$$0.1 \times 0.1 + 0.2 \times 0.2$$
$$0.3 \times 0.3 + 0.6 \times 0.6$$

apply bodmass rule

$$0.01 + 0.04$$
$$0.09 + 0.36$$

$$0.05$$
$$0.45$$

$$\frac{1}{9}$$

Question 13

At what rate percent will a sum of money double itself in 12 years?

A 8%

B $8\frac{1}{2}\%$

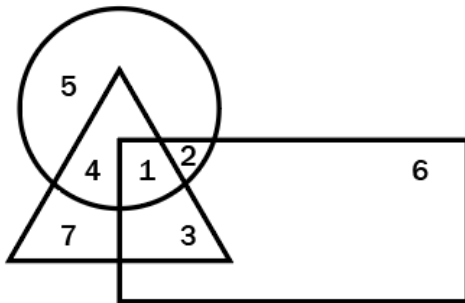
C $8\frac{1}{4}\%$

D $8\frac{1}{3}\%$

Answer: D

Question 14

In the given figure, the circle represents editors, triangle represents directors, and rectangle represents singers. Which region represents the persons who are editors and singers but not directors ?



A 2

B 4

C 1

D 3

Answer: A

Explanation:

the circle represents editors, triangle represents directors, and rectangle represents singers.

the circle represents editors = 5

triangle represents directors = 7

rectangle represents singers = 6

region represents the persons who are editors and singers = 2 or 1

region represents the persons who are editors and singers but not directors = 2

Question 15

Due to which force does the moon move around the Earth in its near circular orbit?

- A Mechanical force
- B Centrifugal force
- C Friction force
- D Centripetal force

Answer: D

Question 16

Which is the main source of almost all energy on Earth?

- A Atmosphere
- B Sun
- C Moon
- D Water

Answer: B

Question 17

The number of atoms or molecules or ions present in one mole of a substance is called-

- A Atomic number
- B Avogadro number
- C Mass number
- D Normality

Answer: B

Question 18

As we move down a group of the periodic table, the electron affinity-

- A Increases and then decreases
- B Decreases
- C Increases
- D Remains the same

Answer: B

Question 19

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

Statements:

$$C > U \leq S < T = O > D \geq Y, Z = O \leq P$$

Conclusions:

I. $Z > Y$

II. $C < O$

- A Either conclusion I or II is true
- B Only conclusion I is true
- C Only conclusion II is true
- D Both conclusions I and II are true

Answer: B

Explanation:

$$C > U \leq S < T = O > D \geq Y, Z = O \leq P$$

O is common in both the statement

here, in first statement

$$O > D \geq Y$$

$$= O > Y \dots(1)$$

In 2nd statement

$$Z = O \leq P$$

$$= Z = O \dots(2)$$

so, $Z > Y$ from (1) and (2).... True

Now for $C < O$

$$C > U \leq S < T = O > D \geq Y$$

$$C < O \dots \text{false}$$

Question 20

How much work is done in moving 2 Coulombs of charge across two points having a potential difference of 12 V?

- A 12 Joule
- B 18 Joule
- C 24 Joule
- D 6 Joule

Answer: C

Question 21

P and Q can do a work in 12 days and 16 days respectively. P started the work alone. After how many days should Q join P, so that the work is finished in 9 days?

- A 3

B 2

C 5

D 4

Answer: C

Explanation:

P = 12 days

Q = 16 days

total work = LCM(12,16) = 48

efficiency = $\frac{48}{12} = 4$

efficiency = $\frac{48}{16} = 3$

as we know that

efficiency multiplied by days = work

P works till the end and Q comes after some day

so

$$P_{time} \times P_{effi} + Q_{time} \times Q_{effi} = 48$$

$$9 \times 4 + Q \times 3 = 48$$

Q time = 4 days

Question 22

Which of these numbers is a multiple of 24?

A 35718

B 53784

C 31256

D 63810

Answer: B

Explanation:

Find two more numbers that **multiply** to make **24**. In this case, $1 \times 24 = 2 \times 12 = 3 \times 8 = 4 \times 6 = 24$ This means the factors of **24** are 1, 2, 3, 4, 6, 8, 12 and **24**

only 53784 which is divisible by all the factors of 24

Question 23

In a certain code language, 256 means 'you are good', 637 means 'we are bad', 358 means 'good and bad'. Find the code for 'and'.

A 3

B 8

C 5

D 2

Answer: B

Explanation:

256 means 'you are good', 637 means 'we are bad', 358 means 'good and bad'.

you are good = 256 (1)

we are bad = 637(2)

'good and bad'. = 358 (3)

select the common words

in 1 and 3

good =5

in 2 and 3

bad =3

so from 3 ,we get

and = 8

Question 24

P and Q can complete a job in 12 days and 16 days respectively. They work together for 4 days. What portion of work is left for completion?

A $\frac{3}{4}$

B $\frac{7}{12}$

C $\frac{6}{7}$

D $\frac{5}{12}$

Answer: D

Question 25

During a chemical reaction, atomic number _____.

A Changes with temperature

B Remains the same

C Changes

D Changes with volume

Answer: B

Question 26

Find the ODD fraction.

18 24 51 108 18
72 , 96 , 204 , 432 , 90

A $\frac{24}{96}$

B $\frac{51}{204}$

C $\frac{108}{432}$

D $\frac{18}{90}$

Answer: D

Explanation:

$$\frac{18}{72} = 4$$

$$\frac{24}{96} = 4$$

$$\frac{51}{204} = 4$$

$$\frac{108}{432} = 4$$

$$\frac{18}{90} = 5$$

so odd $\frac{18}{90}$

Question 27

Arun went to a nearby city at a speed of 25 km/h and returned at 20 km/h. If the total time for the trip was 1 hour 48 minutes, what is the distance of his place from the city?

A 20 km

B 18 km

C 40 km

D 22 km

Answer: A

Explanation:

$$\text{Average speed} = \frac{2 \times 20 \times 25}{20 + 25} = \frac{100}{45} \text{ km/hr}$$

Time = 1 hr 48 min

$$= \frac{108}{60} = \frac{9}{5}$$

$$\text{Total Distance} = \frac{100}{45} \times \frac{9}{5} = 40 \text{ km}$$

Therefore, distance between house and office = $\frac{40}{2} = 20 \text{ km}$

Question 28

Three numbers in the ratio 3 : 4 : 5 have the LCM 2400. What is the HCF?

A 40

B 120

C 200

D 80

Answer: A

Explanation:

Let the numbers be 3x, 4x and 5x.

their L.C.M. = 60x.

So, 60x = 2400 or x = 40.

The numbers are (3 x 40), (4 x 40) and (5 x 40).

HCF

$$120 = 2 \times 2 \times 2 \times 3 \times 5$$

$$160 = 2 \times 2 \times 2 \times 2 \times 2 \times 5$$

$$200 = 2 \times 2 \times 2 \times 5 \times 5$$

H.C.F. = 40.

Question 29

Asbestos is a mineral fibre that can pollute air or water and cause-

- A Mesothelioma, lung cancer and asbestosis
- B Asbestosis
- C Mesothelioma
- D Lung cancer

Answer: A

Question 30

What type of lines are represented by the equations $6x - 3y + 10 = 0$ and $2x - y + 9 = 0$?

- A Parallel
- B Cannot be determined
- C Intersecting
- D Coincident

Answer: A

Question 31

Find $\tan 75^\circ$, by splitting 75° as $(45^\circ + 30^\circ)$.

- A $\frac{\sqrt{3}-1}{\sqrt{3}+1}$
- B $2 + \sqrt{3}$
- C $2\sqrt{3} - 1$
- D $2\sqrt{3} + 1$

Answer: B

Explanation:

$$\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$\tan 75^\circ$, by splitting 75° as $(45^\circ + 30^\circ)$.

$$\tan 45^\circ = 1$$

$$\tan 30^\circ = \tan \frac{1}{\sqrt{3}}$$

$$\tan(45 + 30) = \frac{\tan 45 + \tan 30}{1 - \tan 45 \times \tan 30}$$

$$\tan(A + B) = \frac{1 + \sqrt{3}}{1 - \sqrt{3}}$$

Question 32

What is the theme of 'National Girl Child Day', 2019?

- A Bridging health and social care
- B Leave no one behind
- C Let's bring change to the world
- D Empowering girls for a brighter tomorrow

Answer: D

Question 33

6 men and 2 boys can do five times as much work as one man and one boy. Find the ratio of the working capacity of a man to that of a boy.

- A 3 : 2
- B 3 : 1
- C 4 : 1
- D 1 : 3

Answer: B

Explanation:

let one man 1 day work = M

and 1 boy 1 day work = B

so one man and one boy 1 day work = M + B

6 Men and 2 Boys work = 6M + 2B

$$6M + 2B = 5(M + B)$$

$$= M = 3B$$

$$\frac{M}{B} = \frac{3}{1}$$

$$\Rightarrow M : B :: 3 : 1$$

Question 34

Find the ODD one out from the given options.

- A 154
- B 198
- C 168
- D 176

Answer: C

Explanation:

Addition of digits should be even

$$154 = 10$$

$$198 = 18$$

$$168 = 15$$

$$176 = 14$$

Question 35

Simplify: $4 + 44 + 444 + 4444 + 44444$

A 48384

B 49384

C 49380

D 49280

Answer: C

Explanation:

$$4 + 44 + 444 + 4444 + 44444$$

Assume above as

$$00004 + 00044 + 00444 + 04444 + 44444$$

then add it

$$49280$$

Question 36

Oxides of non-metals are _____ in nature.

A Amphoteric

B Basic

C Both acidic and basic

D Acidic

Answer: D

Question 37

Simplify: $\sqrt{64009} - \sqrt{53824}$

A 17

B 21

C 23

D $\sqrt{21}$

Answer: B

Explanation:

$$\sqrt{64009} - \sqrt{53824}$$

$$\sqrt{64009} = 253$$

$$\sqrt{53824} = 232$$

$$253 - 232 = 21$$

Question 38

Which word will best complete the relationship given below?

Taj Mahal : India :: Petra : ?

- A Denmark
- B Colombia
- C Jordan
- D Italy

Answer: C

Explanation:

Taj Mahal : India :: Petra : ?

Taj Mahal located in India

similarly

Petra located in Jordan

Question 39

How does a lubricant reduces friction between moving parts of a machine?

- A Lubricant increases the material's irregularities
- B Lubricant makes the moving parts tight
- C Lubricant tears the parts
- D The lubricant forms a thin film of surface between the moving parts so that they don't rub against each other directly

Answer: D

Question 40

When was Sri Lanka's first satellite Ravana 1 launched into space from NASA's Flight Facility?

- A March 2019
- B April 2019
- C February 2019
- D May 2019

Answer: B

Question 41

Simplify: $25 + 15 - 5 \times \frac{1}{2} \text{ of } 10 - [50 \div 10 - 5]$

- A 15
- B 10
- C 20
- D 25

Answer: A

Explanation:

$$25 + 15 - 5 \times \frac{1}{2} \text{ of } 10 - [50 \div 10 - 5]$$

Apply bodmass rule , before solve bracket

$$25 + 15 - 5 \times \frac{1}{2} \text{ of } 10 - [5 - 5]$$

$$25 + 15 - 5 \times \frac{1}{2} \text{ of } 10 - 0$$

$$25 + 15 - 5 \times 5$$

$$25 + 15 - 25$$

$$15$$

Question 42

Find the difference between the selling prices of two articles sold at 12.5% profit and 12.5% loss, if the cost price is Rs.400 each.

- A Rs.140
- B Rs.120
- C Rs.100
- D Rs.80

Answer: C

Explanation:

12.5% = profit%

Let us consider 400 as cost price

profit

$$\frac{12.5}{100} \times 400$$

$$= 50$$

Selling price will be ,

$$\text{Cost price} + \text{profit} = 400 + 50$$

$$\text{S.p} = 450$$

12.5% = loss%

Let us consider 400 as cost price

profit

$$\frac{12.5}{100} \times 400$$

= 50

Selling price will be ,

Cost price + loss = 100-50

S.p = 50

difference in their selling price = 150 - 50 = Rs 100

Question 43

Which of the following group of alphabets will best complete the relationship given below?

DFI : MOR :: LNQ : ?

A UWY

B UWZ

C UWX

D TUW

Answer: B

Explanation:

DFI : MOR :: LNQ : ?

DFI : MOR

the letters are in Alphabetical order

D E F GH I JKL M N O PQ R

similarly

L M N OP Q RST U V W XY Z

UWZ

Question 44

Which of the following is an olfactory indicator?

A Litmus paper

B Phenolphthalein

C Vanilla

D Red cabbage juice

Answer: C

Question 45

Convert into vulgar fraction: 0.2437

A $\frac{2413}{9999}$

B $\frac{2437}{9990}$

C 2413
9900

D 2437
9999

Answer: C

Question 46

Citrus fruits are considered a rich source of-

A Vitamin D

B Vitamin B

C Vitamin C

D Vitamin A

Answer: C

Question 47

Find the ODD one out from the given options.

A GF

B DC

C EF

D CB

Answer: C

Explanation:

here the second letter comes first in Alphabetical series the first letter comes

GF, here F comes first then G

DC, here C comes first then D

EF here F not comes first

CB here B comes first then C

Question 48

Which of the following gases turns limewater milky?

A Carbon dioxide

B Hydrogen

C Oxygen

D Both oxygen and carbon dioxide

Answer: A

Question 49

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

Statements:

- 1) Some trucks are bikes.
- 2) Some bikes are scooters.

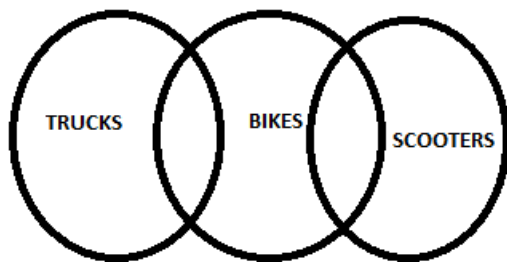
Conclusions:

- I. Some trucks are scooters.
- II. All bikes are scooters.

- A Both conclusions I and II follow
- B Only conclusion I follows
- C Neither conclusion I nor II follows
- D Only conclusion II follows

Answer: C

Explanation:



- I. Some trucks are scooters.

There is no connection between trucks and scooters. so we cant say anything about it

- II. All bikes are scooters.

Some bikes are scooters not all bikes

so, Neither conclusion I nor II follows

Question 50

What is the relation between the frequency ν and the time period T of a sound wave?

A $\nu = \frac{1}{\sqrt{T}}$

B $v = \frac{1}{T^2}$

C $v = T$

D $v = \frac{1}{T}$

Answer: D

Question 51

If selling price of 'n' pens is the same as cost price of 10 pens and there is 100% gain, then find the value of 'n'.

A 5

B 6

C 8

D 10

Answer: A

Question 52

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

Eight friends—J, K, L, M, N, O, P and Q are sitting around a circle facing the center. J is second to the right of P who is third to the right of K. M is second to the left of O who sits between P and J. L is not a neighbour of K or N.

Which of the following groups of persons have the first person sitting between the other two?

A PJO

B OPM

C MPO

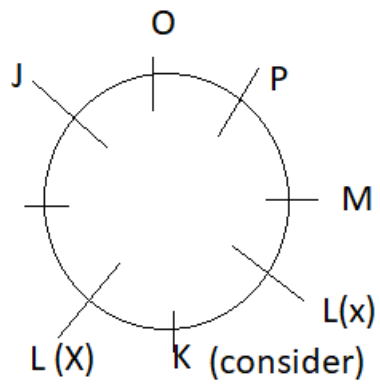
D OPJ

Answer: D

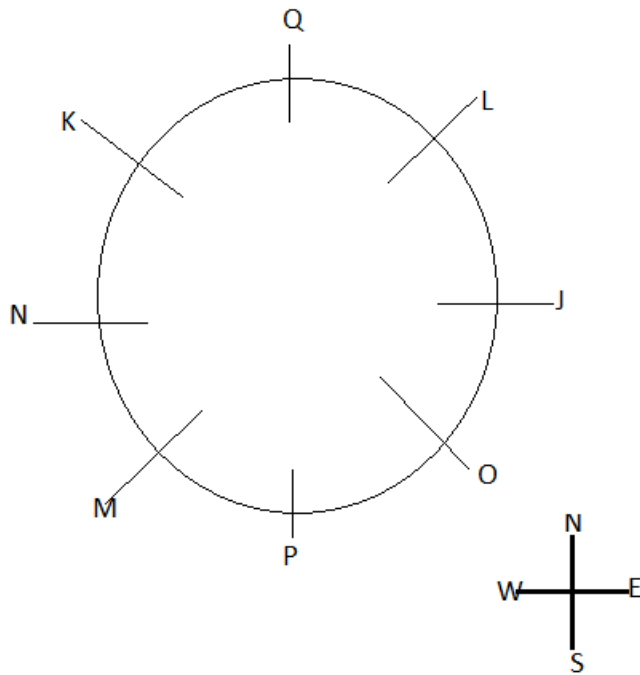
Explanation:

OPJ

giv3en



so only one place left for L



Question 53

A policeman left his police post and proceeded south 4 km. Then he turned left proceeded 4 km to reach the point B. From B, he proceeded left to reach another place C which is 4 km away. In which direction has he to go to reach his police post?

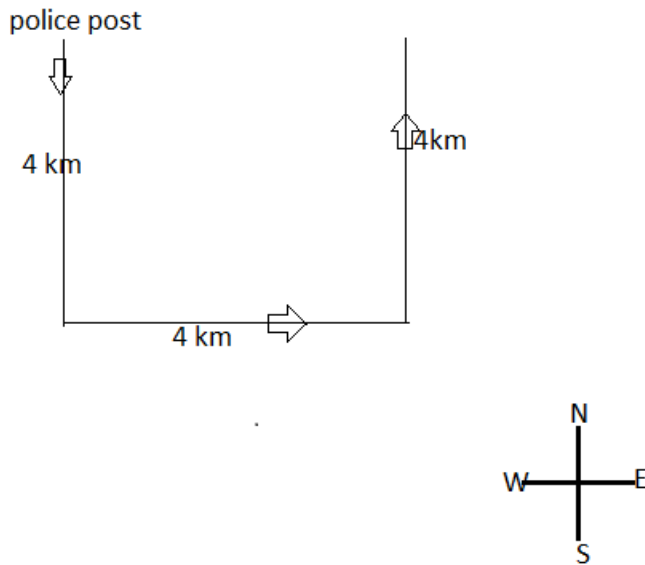
- A East
- B West

C South

D North

Answer: B

Explanation:



He has to move west to reach police post

Question 54

Daughter's age is one-fourth of her father's age. Five years hence, she will be one-third of his age. Further after five years, what will be the ratio of her age to that of her father?

A 2 : 5

B 5 : 2

C 3 : 4

D 3 : 5

Answer: A

Explanation:

Let D be the daughter's age and F be the father's age

ATQ

$$D = \frac{1}{4}F \dots 1$$

after 5 years

$$D + 5 = \frac{1}{3}(F + 5) \dots 2$$

put 1 in 2

$$\frac{1}{4}F + 5 = \frac{1}{3}(F + 5)$$

D = 10 years

F = 40 years

so 5 years hence ,

D = 15 years

F = 45 years

Again 5 years after

D = 20 years

F = 50 years

ratio

$$D : F = 20 : 50 = 2 : 5$$

Question 55

If 'LBAEHC' is coded as 'BLEACH', then which of the following is coded as 'NBOLZKMH'?

A BOLNHMKZ

B BONKZLHM

C BNOLKZMH

D BNLOKZHM

Answer: D

Explanation:

'LBAEHC' is coded as 'BLEACH'

first two letters are interchanged LB BL

middle two letters are interchanged AE EA

last two letters are interchanged HC CH

similarly

'NBOLZKMH'

first two letters are interchanged NB BN

Second and third letters are interchanged OL LO

Fourth and fifth letters are interchanged ZK KZ

last two letters are interchanged MH HM

BNLOKZHM

Question 56

With which sport is Narain Karthikeyan associated?

A Tennis

B Golf

C Auto racing

D Squash

Answer: C

Question 57

Find the missing group of alphabets in the following series.

A, CD, GHI, (...), UVWXY

A LMNO

B MNOP

C MPNO

D MONP

Answer: B

Explanation:

A, CD, GHI, (...), UVWXY

A B **CD** EF **GHI** JKL **MNOP** QRST **UVWXY**

bold letters are in alphabetical series in the gap of 1, 2, 3 ...letters

Question 58

Who among the following was popularly known as the 'Frontier Gandhi'?

A Abdul Ghaffar Khan

B Asfandiyar Wali Khan

C Muhammad Ali Jinnah

D Maulana Abul Kalam Azad

Answer: A

Question 59

Purkinje fibers are specialized -

A Glandular cells in skin

B Muscle fibres in the heart

C Neurons in the brain

D Cells in blood

Answer: B

Question 60

If both object distance 'u' and image distance 'v' from a concave mirror is -20 cm and both object size and image size is 4 cm, then what is the radius of curvature 'R' of the mirror?

A -20 cm

B -10 cm

C -18 cm

D -15 cm

Answer: A

Question 61

The word aqueous (aq) is written if the reactant or product is present as a/an-

A Concentrated solution

B Isotonic solution

C Solution in kerosene

D Solution in water

Answer: D

Question 62

What was the purpose of 'Project arrow' in postal department started in the year 2008?

A Improvement in core operations of post offices

B Focusing on money remittances and savings bank

C All of the options

D Enhancing the quality of services in mail delivery

Answer: C

Question 63

Two cars P and Q start from the opposite direction of 100 km apart. Car P reaches a distance of 30 km, and car Q reaches a distance of 25 km. What is the distance between the two cars?

A 55 km

B 45 km

C 35 km

D 25 km

Answer: B

Explanation:

Distance between the cars = 100 km

P covered = 30 km

Q covered = 25 km

distance left = $(100 - 30 - 25) = 45$ km

Question 64

How many triangles are there in the given figure?



A 15

B 18

C 16

D 14

Answer: B

Question 65

Which of the following is essentially a solo dance?

A Kuchipudi

B Manipuri

C Kathak

D Mohiniattam

Answer: D

Question 66

What is a sponge in biology?

A A fungus

B A plant

C A fossil

D An animal

Answer: D

Question 67

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

Seven persons—L, M, N, O, P, Q and R like different colours—red, blue, white, pink, green, black and yellow, but not necessarily in the same order. They all have different hobbies (or they like different activities) shooting, travelling, dancing, gardening, hunting, painting and writing, but not necessarily in the same order. The hobby of O is shooting. The one whose hobby is gardening likes pink colour. L likes yellow colour. The one whose hobby is writing likes green colour. The hobby of Q is dancing. Neither O nor Q likes black colour. The one whose hobby is painting and travelling does not like black colour. The hobby of L is not travelling. The one whose hobby is travelling does not like red and white colour; O does not like red colour. The hobby of P is neither hunting nor gardening. P does not like green colour. R does not like green and black colour. The hobby of M is not writing.

Which of the following is the hobby of P?

- A Writing
- B Hunting
- C Travelling
- D Gardening

Answer: C

Explanation:

Travelling is the hobby of P

given

O	Shooting	black x red x
	Gardening	Pink
L		Yellow
	Writing	Green
Q	Dancing	black x

painting ---> no blk colour

L ---> no travelling

travelling --> no red white and black

P---> no hunting no gardening
'no green

R ---> no green no black , M ---> no writing

final figure

O	Shooting	White
R	Gardening	Pink
L	Painting	Yellow
N	Writing	Green
Q	Dancing	Red
P	Travelling	Blue
M	Hunting	Black

Question 68

"Theory of Natural selection" was proposed by -

- A Erasmus Darwin
- B Charles Huxley
- C Charles Darwin
- D Morgan

Answer: C

Question 69

Which of the following gases causes acid rain along with sulphur dioxide and carbon monoxide?

- A Hydrogen
- B Oxygen
- C Nitrogen oxides
- D Carbon dioxide

Answer: C

Question 70

What is the SI unit of electric current?

- A Volt (V)
- B Joule (J)

- C Ampere (A)
- D Coulomb (C)

Answer: C

Question 71

Find the ODD one out from the given options.

- A BY
- B AZ
- C EV
- D CW

Answer: D

Explanation:

BY = B is in the second position of alphabetical series similarly Y is in the second position of the reverse alphabetical series
AZ = A is in the first position of alphabetical series similarly Z is in the first position of the reverse alphabetical series
EV = E is in the Fifth position of alphabetical series similarly V is in the fifth position of the reverse alphabetical series
CW = C is in the third position of alphabetical series similarly W is in the fourth position of the reverse alphabetical series
so CW is odd

Question 72

Find the roots of $2x^2 - 15x + 28$.

- A Both negative
- B Not real
- C One positive, other negative
- D Both positive

Answer: D

Explanation:

$$2x^2 - 15x + 28.$$

$$2x^2 - 8x - 7x + 28$$

$$2x(x - 4) - 7(x - 4)$$

$$(x - 4)(2x - 7) = 0.$$

$$x=4, x=\frac{7}{2}$$

Both positive

Question 73

Complete the series.

55, 59, 65, 73, 83, 95, 109, (...)

- A 125

B 138

C 129

D 136

Answer: A

Explanation:

55, 59, 65, 73, 83, 95, 109, (...)

$$55 + 4 = 59$$

$$59 + 6 = 65$$

$$65 + 8 = 73$$

$$73 + 10 = 83$$

$$83 + 12 = 95$$

$$95 + 14 = 109$$

so,

$$109 + 16 = 125$$

Question 74

The mineral (ions) necessary for coagulation of blood is-

A Sodium

B Potassium

C Calcium

D Chlorine

Answer: C

Question 75

During setting of plaster of Paris-

A Both mass is expanded and heat is liberated

B Combustion takes place

C Heat is liberated

D Mass is expanded

Answer: A

Question 76

If the first number and the second number is 25% and 50% more than the third number respectively, find the respective ratio between the first and the second number.

A 2 : 1

B 1 : 2

C 5 : 6

D 6 : 5

Answer: C

Explanation:

Two numbers are respectively 25% (A) and 50% (B) more than a third number (C)

let the no = 100

Then A = 125 and B = 150. The ratio of A:B = 125:150

5:6

Question 77

Complete the series.

536, 268, 134, 67, (...)

A 33.5

B 34.6

C 31.4

D 35.2

Answer: A

Explanation:

536, 268, 134, 67, (...)

$$536 \times 0.5 = 268$$

$$268 \times 0.5 = 134$$

$$134 \times 0.5 = 67$$

so,

$$67 \times 0.5 = 33.5$$

Question 78

In this question, a statement is given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statement:

The minimum qualification for a job is graduation. However, candidates who have appeared for the final year of graduation may also apply.

Conclusions :

I. All candidates who have yet to graduate will be there in the list of selected candidates.

II. All candidates having graduation as their minimum qualification will be there in the list of selected candidates.

A Neither conclusion I nor II follows

B Both conclusions I and II follow

C Only conclusion I follows

D Only conclusion II follows

Answer: D

Explanation:

From the given statement, we can not say that all candidates having which are yet to graduate will be selected as there may be the possibilities of the selection of some or all already graduate students, so the first statement will not hold true. For the second statement we can say that if the minimum qualification is graduation so all the selected candidates will be either minimum graduate or postgraduate too. Hence, the second statement will follow.

So, statement II follows.

Question 79

A man is standing on a platform which is 70 m long. A train crosses the platform in 5.5 seconds, but it crosses the man in 2 seconds. What is the length of the train?

- A 60 m
- B 45 m
- C 80 m
- D 40 m

Answer: D

Question 80

Which of the following is NOT a routine session of the Indian Parliament?

- A Monsoon Session
- B Winter Session
- C Budget Session
- D Summer Session

Answer: D

Question 81

In which Indian state is a greater part of the desert located?

- A Gujarat
- B Punjab
- C Rajasthan
- D Haryana

Answer: C

Question 82

A sum of money at 8% Simple Interest was placed in a deposit for 7 years. The matured amount was then invested in a scheme offering 10% Compound Interest compounded annually, thereby procuring an interest of Rs.1638 in 2 years. What was the original sum?

- A Rs.6200
- B Rs.8000

C Rs.7500

D Rs.5000

Answer: D

Question 83

The loss incurred in a sale of an article is equal to 60% of the selling price of the article. What is the actual loss per cent?

A 28%

B 40%

C 37.5%

D 25%

Answer: C

Question 84

Which vaccine is used for the prevention of Tuberculosis?

A BCG

B ABC

C CSD

D AMG

Answer: A

Question 85

What is the other name of Soccer?

A Hockey

B Basket ball

C Football

D Polo

Answer: C

Question 86

The sum of the ages of a father and son is 45. Six years ago, their ages were in the ratio 10 : 1. How old will the son be after six years?

A 20

B 16

C 15

D 19

Answer: C

Explanation:

$$F + S = 45 \dots (1)$$

before 6 years

$$F - 6 + S - 6 = 10X + X$$

$$F + S - 12 = 11X \dots (2)$$

PUT (1) IN (2)

$$45 - 12 = 11X$$

$$3 = X$$

X is the age of son before 6 years = 3

so present age = 3 + 6 = 9 years

so the age after 6 years = 9 + 6 = 15 years

Question 87

P, Q and R are the volumes of a cone, hemisphere and a cylinder with equal radius and height. What is the value of $P : Q : R$?

A 2 : 1 : 3

B 1 : 2 : 3

C 3 : 4 : 2

D 1 : 3 : 2

Answer: B

Explanation:

vol of cone : vol of hemisphere : vol of cylinder

$$\frac{1}{3} \times \pi \times r^2 \times h : \frac{2}{3} \times \pi \times r^3 : \pi \times r^2 \times h = P:Q:R$$

having equal radius and height

$$\frac{1}{3} \times \pi \times r^2 \times r : \frac{2}{3} \times \pi \times r^3 : \pi \times r^2 \times r = P:Q:R$$

1 : 2 : 3

Question 88

Which organisms cause infectious diseases?

A All of the options

B Protozoa

C Worms

D Viruses

Answer: A

Question 89

With which of the following sports is Santosh Trophy associated?

- A Badminton
- B Football
- C Hockey
- D Cricket

Answer: B

Question 90

How is the refractive index of a material related to the speed of light in air?

- A $\text{Refractive index} = \text{Speed of light in air} + \text{Speed of light in material}$
- B $\text{Refractive index} = \text{Speed of light in air} / \text{Speed of light in material}$
- C $\text{Refractive index} = \text{Speed of light in air} \times \text{Speed of light in material}$
- D $\text{Refractive index} = \text{Speed of light in material} / \text{Speed of light in air}$

Answer: B

Question 91

The greatest quantity of air that can be expelled after a maximum inspiratory effect is-

- A Lung volume
- B Residual volume
- C Vital volume
- D Tidal volume

Answer: A

Question 92

In a certain code, 'AWAKE' is written as 'ZVZJD'. How is 'FRIEND' written in that code?

- A EQMHDC
- B EQHMDC
- C EQHDMC
- D EHQDMC

Answer: C

Explanation:

'AWAKE' is written as 'ZVZJD'

coded letter is just before the given letter

A before Z

W before V

A before Z

K before J

E before D

similarly for FRIEND

F before E

R before Q

I before H

E before D

N before M

D before C

so the coded word = EQHDMC

Question 93

Find the missing alphabet in the following series.

A, C, F, (...), O

A R

B M

C P

D J

Answer: D

Explanation:

A, C, F, (...), O

here the series is in Alphabetical order

and the alphabets are missing in serial number like 1,2, 3,4 so on

A B C DE F GHI J KLMN O

Question 94

The Arjun is a third generation _____ developed by India's Defence Research and Development Organisation (DRDO), for the Indian Army.

A Light combat aircraft

B Helicopter

C Main battle tank

D Jet fighter

Answer: C

Question 95

A hemispherical metallic solid is melted and recast into a cone of equal radius 'R'. If the height of the cone is H, then:

A $H = 2R$

B $H = R$

C $H = \frac{R}{2}$

D $H = \frac{R}{3}$

Answer: A

Explanation:

When we change shape of a solid figure, volume remains constant

Vol of hemisphere = Vol of cone

$$\frac{2 \times R^3}{3} \pi = \frac{1 \times R^2}{3} \pi \times H$$

$$2R = H$$

Question 96

How much material is wasted when a solid cone of height 24 cm and radius 8 cm is recast into a solid cylinder of radius 6 cm and height 6 cm?

A 64%

B 37.5%

C 57.8%

D 52%

Answer: C

Explanation:

cone

height = $h = 24\text{cm}$

radius = $r = 8\text{cm}$

volume = $v = ?$

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

$$v = \frac{\pi \times 8^2 \times 24}{3}$$

$$v = 512\pi\text{cm}^3$$

cylinder

height = $h = 6\text{cm}$

radius = $r = 6\text{cm}$

volume = $v = ?$

$$v = \pi \times r^2 \times h$$

$$v = \pi \times 6^2 \times 6$$

$$v = 216\pi\text{cm}^2$$

wasted material

= volume of cone - volume of cylinder

$$= 512\pi - 216\pi$$

$$= 296\pi cm^3$$

percentage

$$512\pi : 100 :: 296\pi : x$$

$$\frac{296\pi}{512\pi}100 = x$$

$$296 \times 100 / 512 = x$$

$$0.5781 \times 100 = x$$

$$57.81 \% = x$$

so percentage of wasted material is 57.81%

Question 97

Which of the following is a 'Surface to Air Missile'?

- A Brahmos
- B K-15 Sagarika
- C Agni
- D Trishul

Answer: D

Question 98

Simplify: $\cos \theta(1 - \tan \theta) + \sin \theta(1 - \cot \theta)$

- A $\tan \theta + \cot \theta$
- B $\sin \theta - \cos \theta$
- C $\sin \theta + \cos \theta$
- D 0

Answer: D

Question 99

If the potential difference across the ends of a conductor is halved, what happens to the current flowing through it?

- A It gets doubled
- B It gets increased
- C It gets halved
- D It gets decreased

Answer: C

Question 100

In which of the following places is Malampuzha dam located?

- A Chandigarh

B Pune

C Palakkad

D Papanasam

Answer: C

RRB JE
27th May 2019
Shift-2

Instructions

For the following questions answer them individually

Question 1

Which energy of fossil fuel is transformed into electrical energy at thermal power plants?

- A Hydro electric energy
- B Tidal energy
- C Solar energy
- D Chemical energy

Answer: D

Question 2

Two trains of equal lengths take 10 seconds and 15 seconds respectively to cross a telegraph post. If the length of each train is 120 m, in what time will they cross each other traveling in the opposite direction?

- A 12 seconds
- B 10 seconds
- C 20 seconds
- D 15 seconds

Answer: A

Explanation:

Speed of the first train = $\frac{120}{10} = 12$ m/s

Speed of the second train = $\frac{120}{15} = 8$ m/s

Relative speed = $(12 + 8) = 20$ m/s

So, required time = $\frac{(120+120)}{20} = 12$ sec

Question 3

_____ is a standard for wireless broadband communication for high speed data.

- A 8VSB
- B LTE
- C Dolby digital
- D Gps one

Answer: B

Question 4

Niacin is a form of-

- A Vitamin B3
- B Vitamin B1
- C Vitamin B2
- D Vitamin B4

Answer: A

Question 5

Why do gymnasts apply some coarse substance on their hands?

- A The coarse substance gives a shiny, beautiful look to their hands
- B The substance causes to sweat more and the hands become wet
- C To increase friction for better grip
- D The coarse substance makes the hands slip on the ground easily

Answer: C

Question 6

The Lucknow Pact of 1916 was made between-

- A The moderates and the extremists
- B Indian National Congress and British Government
- C Indian National Congress and All India Muslim League
- D British Government and All India Muslim League

Answer: C

Question 7

Which of the following substances will NOT give carbon dioxide on treatment with dilute acid?

- A Baking soda
- B Limestone
- C Marble
- D Lime

Answer: D

Question 8

Covalent compounds-

- A Are poor conductors of electricity
- B Are formed by the sharing of electrons in the bonding atoms
- C Have low melting and boiling point
- D All of the options

Answer: D

Question 9

If 'O' is the circumcentre of a triangle ABC and OD is perpendicular to BC , then find $\angle BOD$.

- A $\left(\frac{1}{2}\right) \angle A$
- B $\angle A$
- C $90^\circ - \angle A$
- D $2\angle A$

Answer: B

Explanation:

In triangle BOC and triangle COD

$BO = CO$ ----- (Both are radius)

$\angle BDO = \angle CDO = 90^\circ$

OD is common in both triangle

So, $\angle BOD = \angle COD$ ----- i

As we know that angle at centre is double the angle at the circumference

$\angle BOC = 2\angle BAC$

$2\angle BOD = 2\angle BAC$ ----- (from i)

$\angle BOD = \angle BAC$

Hence, $\angle BOD = \angle A$

Question 10

"Systema Nature" was written by -

- A Aristotle
- B Haeckel
- C John Ray
- D Carolus Linnaeus

Answer: D

Question 11

Which of the following will turn blue litmus red?

- A Washing soda solution
- B Limewater
- C Vinegar
- D Baking soda solution

Answer: C

Question 12

What is the theme of 'World Wildlife Day', 2019?

- A Forests and education - learn to love forests
- B Wetlands and climate change
- C Act to change laws that discriminate
- D Life below water: for people and planet

Answer: D

Question 13

Find the greatest among these fractions.

$\frac{5}{11}$, $\frac{3}{15}$, $\frac{12}{11}$, $\frac{4}{7}$, $\frac{9}{12}$

A $\frac{12}{11}$

B $\frac{4}{7}$

C $\frac{9}{12}$

D $\frac{3}{15}$

Answer: A

Explanation:

As we can see that only fraction $\frac{12}{11}$ has numerator more than its denominator,

So, greatest fraction will be $\frac{12}{11}$

Question 14

What is the weight of an object?

- A It is the area occupied by the object
- B It is the force with which it is attracted towards the Earth
- C It is the volume of the object
- D It is the inertia of the object

Answer: B

Question 15

Ages of a mother and daughter are in the ratio 12 : 5. Ten years hence, she will be twice as old as her daughter. What is the sum of their ages at present?

- A 75
- B 60
- C 85
- D 65

Answer: C

Explanation:

Let the age of mother and father be $12x$ and $5x$ respectively

According to the question,

$$\frac{(12x+10)}{(5x+10)} = \frac{2}{1}$$

$$12x + 10 = 10x + 20$$

$$2x = 10$$

$$x = 5$$

Therefore, required sum = $12x + 5x = 17x = 85$ years

Question 16

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

Statements:

- 1) Some flats are apartments.
- 2) No apartment is a hall.
- 3) Some halls are rooms.

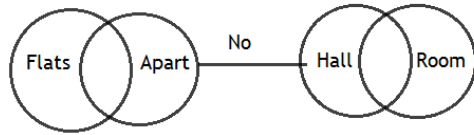
Conclusions:

- I. At least some rooms are flats.
- II. No apartment is a room.

- A Neither conclusion I nor II follows
- B Only conclusion I follows
- C Only conclusion II follows
- D Both conclusions I and II follow

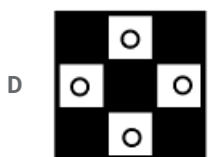
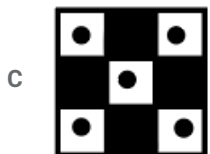
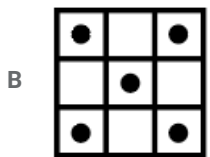
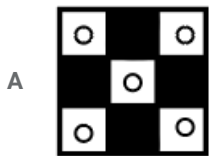
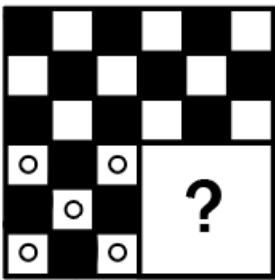
Answer: A

Explanation:



Question 17

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



Answer: D

Explanation:

If we see the figure then we see option D figure will complete the pattern.

Question 18

Where is the Forest Research Institute located?

- A Dehradun
- B New Delhi
- C Lucknow
- D Bhopal

Answer: A

Question 19

Find the remainder when $(12^{13} + 12)$ is divisible by 13.

- A 11
- B 2
- C 12
- D 1

Answer: A

Explanation:

$$(12^{13} + 12) \div 13$$

We can write this as

$$\frac{12^{13}}{13} + \frac{12}{13}$$

Negative remainder for $\frac{12^{13}}{13} = -1^{13} = -1$

Negative remainder for $\frac{12}{13} = -1$

So, $-1 + -1 = -2$

Therefore, required remainder = $13 - 2 = 11$

Question 20

The profit on the sale of a product is 25%. What will be the loss per cent, if the values of cost price and selling price are interchanged?

- A Loss of 16%
- B Loss of 25%
- C Loss of 12%
- D Loss of 20%

Answer: D

Explanation:

let CP=100. PROFIT=25% SO SP=125.

now interchange CP and SP.

CP=125 SP =100

LOSS=25.

LOSS% = $25/125 \times 100 = 20\%$

SHORTCUT METHOD.

25%=1/4 so CP= 4 SP= 5

INTERCHANGE

CP=5 SP=4 so loss = $1/5=20\%$

Question 21

Which of the following is a host in the life cycle of tape worm?

- A Rabbit
- B Monkey
- C Fish
- D Pig

Answer: D

Question 22

In what ratio should water be mixed with some milk to gain $16\frac{2}{3}\%$ on selling it at cost price?

- A 1 : 6
- B 2 : 3
- C 6 : 1
- D 3 : 4

Answer: A

Question 23

Find the ODD one out from the given options.

- A 3 : 12
- B 1 : 2
- C 2 : 5
- D 4 : 17

Answer: A

Explanation:

3:12 is not in its simplified form

its simplified form is 1:4.

rest 3 ratios are in their simplified form..

Question 24

Mani is facing east. He looks time in his watch, it shows as 3 O'clock. Which direction do hour and minute hands point respectively?

- A West and north
- B South and east
- C East and north
- D South and west

Answer: B

Question 25

Which of the following cities was adjudged India's cleanest city for the third straight year in 2019?

- A Chennai
- B Bengaluru
- C Delhi
- D Indore

Answer: D

Question 26

Find the median value for the number of goals in 10 matches 1, 3, 2, 5, 8, 6, 4, 7, 1 and 9.

- A 4
- B 8
- C 7
- D 4.5

Answer: D

Explanation:

arrange the numbers in ascending order 1 1 2 3 4 5 6 7 8 9

median= middle term after arranging in ascending order in case of odd number terms.

for even number terms mean of middle two terms.

so middle term is 4 and 5 , average =4.5.

Question 27

Which of the following diseases affects the blood cells in the human body?

- A Meningitis
- B Polio
- C Small pox
- D Leukemia

Answer: D

Question 28

Which state of India is famous for the snake boat races?

- A Karnataka
- B Andhra Pradesh
- C Maharashtra
- D Kerala

Answer: D

Question 29

Balaji walks 8 m straight and took left turn to cover a distance of 5 m. Again he took left and he is facing north. Which direction is he now from the starting point?

- A South west
- B South east
- C North west
- D North east

Answer: B

Question 30

Sort the following materials in ascending order of their respective refractive indices - Water, Glass, Air.

- A Glass, Water, Air
- B Water, Air, Glass
- C Air, Water, Glass
- D Glass, Air, Water

Answer: C

Question 31

A mixture of sand and sugar is an example of-

- A Heterogeneous mixture

- B Suspension
- C Colloidal solution
- D Homogeneous mixture

Answer: A

Question 32

The term "Bogey" is associated with-

- A Hockey
- B Golf
- C Swimming
- D Tennis

Answer: B

Question 33

Find the ODD one out from the given options.

- A 125
- B 729
- C 1321
- D 27

Answer: C

Explanation:

125 729 27 are CUBES of 5 9 and 3. 1321 is not a cube. 1331 is cube of 11.

Question 34

What are the names of the three bones in the middle ear?

- A Radius, ulna, hammer
- B Femur, hammer, tibia
- C Hammer, anvil, stirrup
- D Humerus, clavicle, stirrup

Answer: C

Question 35

In the reaction $MgO + CO \rightarrow Mg + CO_2$, the substance oxidised is-

- A Magnesium
- B Magnesium oxide
- C Carbon dioxide
- D Carbon monoxide

Answer: D

Question 36

Which of the following cities is located on the banks of the river Gomati?

- A Prayagraj
- B Kanpur
- C Ghaziabad
- D Lucknow

Answer: D

Question 37

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

Eight persons— M, N, O, P, Q, R, S and T are sitting around a circular table for a meeting facing center. M is second to the right of S who is third to the right of N. P is second to the left of R who sits between S and M. O is not a neighbour of N or Q.

Which of the following is the CORRECT position of Q?

- A To the immediate right of P
- B To the immediate right of N
- C Second to the right of N
- D To the immediate left of N

Answer: B

Question 38

ECG senses the electrical forces produced by-

- A Stomach
- B Heart
- C Kidney
- D Brain

Answer: B

Question 39

The organ of Corti is concerned with-

- A Seeing
- B Hearing
- C Lactic acid
- D Balancing

Answer: B

Question 40

Find the ODD one out from the given options.

- A P
- B D
- C E
- D B

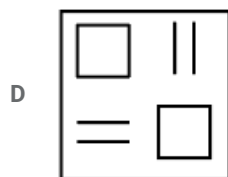
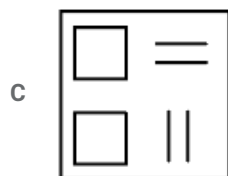
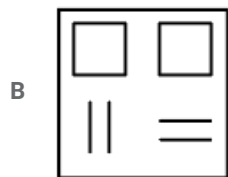
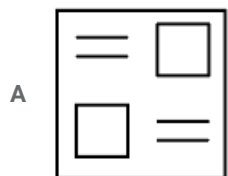
Answer: C

Explanation:

P D B are consonants and E is a vowel.

Question 41

Find the ODD one out from the given options.



Answer: A

Explanation:

in option B C D parallel lines are perpendicular to each other , IN OPTION A lines are parallel to each other.

Question 42

Find the least number to be added to 1780 to make the sum a perfect square.

- A 69
- B 46
- C 72
- D 49

Answer: A

Explanation:

40 - 1600

41 - 1681

42 - 1764

43 - 1849

so 69 should be added to 1780.

Question 43

What is the value of $\cos 55^\circ + \sin 55^\circ$?

- A $2 \sin 35^\circ$
- B $2 \cos 35^\circ$
- C $\sqrt{2} \cos 10^\circ$
- D $2 \sin 10^\circ$

Answer: C

Question 44

A number when divided by 10, 9 and 8 separately leaves remainders 9, 8 and 7 respectively. What is the least of such numbers?

- A 359
- B 719
- C 353
- D 1359

Answer: A

Explanation:

NUMBER = LCM OF 10 9 8 - k, $k = 10-9, k=9-8, k=8-7$, so here $k=1$

$$=360-1=359$$

Question 45

Find the missing group of alphabets in the following series.

JD, LI, (...), SP, XR

- A OM
- B DP
- C WC
- D GT

Answer: A

Explanation:

For 1 letter $J+2=L$, $L+3=O$, $O+4=S$, $S+5=X$

For 2 letter $D+5=I$, $I+4=O$, $O+3=P$, $P+2=R$. SO missing pair is OM

Question 46

If 9 men and 12 boys can do a piece of work in 4 days and 4 men and 16 boys can do the same piece of work in 6 days, how long will 6 men and 24 boys take to complete the same work?

- A 4 days
- B 7 days
- C 6 days
- D 5 days

Answer: A

Explanation:

$$(9M + 12B) * 4 = (4M + 16B) * 6$$

$$36M + 48B = 24M + 96B$$

$$1M = 4B$$

now 6M and 24B will take . $24B = 6M$ so it equals to $6M + 6M = 12M$.

and 9M and 12B , $12B = 3M$, $= 3M = 9M = 12M$.

SO when 12M takes 4 days so $6M + 24B = 12M$ TAKES 4 DAYS.

Question 47

Which of the following is the first member of alkyne homologous series?

- A Ethene
- B Ethyne
- C Propyne
- D Methane

Answer: B

Question 48

Which of the following will best complete the relationship given below?

MOQ : STW :: ACE : ?

A HKG

B HIK

C GHK

D KIH

Answer: C

Explanation:

MOQ is coded as STW

M +6 S

O+5 T

Q+6 W.

so ACE will be written as GHK

Question 49

If object is placed at 25 cm in front of a concave mirror of focal length 15 cm, then find out the image distance v.

A -32.5 cm

B 38 cm

C -37.5 cm

D 32.5 cm

Answer: C

Question 50

In a certain code, 'NATION' is coded as 'OCWMTT'. How would 'COUNTRY' be written in that code?

A DCXRYCF

B DPXRYXF

C DQXRYXF

D DCXRYXF

Answer: C

Explanation:

NATION is written as OCWMTT .

NO +1

ABC +2

TUVW +3

IJKLM +4

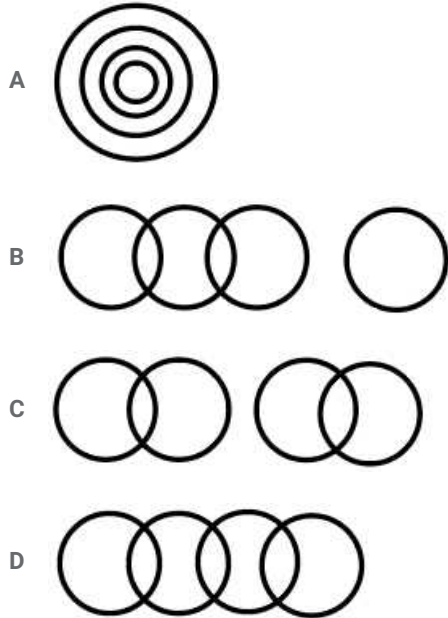
OPQRST +5

NOPQRST +6

so for COUNTRY Code will be DQXRYXF

Question 51

Choose the figure that best represents the relationship among the classes given below.
Word, Sentence, Alphabet, Paragraph



Answer: A

Explanation:

the alphabets are A to Z . Alphabets will form word . Words together will form sentences and sentences will form paragraph.

Question 52

When was the Planning Commission set up?

- A 1947
- B 1965
- C 1975
- D 1950

Answer: D

Question 53

What is the area of a circular track that runs around a circle with circumference 440 m, having a width of 7 m?

- A $3856 m^2$
- B 3234 .
- C $3900 m^2$

D 3204 m^2

Answer: B

Explanation:

$$\text{Circumference} = 2 \times \frac{22}{7} \times R = 440$$

so Radius of circle=70

now radius of track=7 so RADIUS of bigger circle=77.

AREA of TRACK = AREA OF BIGGER CIRCLE - AREA OF SMALL CIRCLE

$$= \frac{22}{7} \times 77 \times 77 - \frac{22}{7} \times 70 \times 70$$

$$= 3234 \text{ m}^2$$

Question 54

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

Statements:

1) No lion is tiger.

2) No tiger is leopard.

Conclusions:

I. No lion is leopard.

II. All leopards are lions.

A Only conclusion I follows

B Neither conclusion I nor II follows

C Both conclusions I and II follow

D Only conclusion II follows

Answer: B

Question 55

When is 'World Water Day' observed?

A March 23

B March 21

C March 20

D March 22

Answer: D

Question 56

What does the power rating 100 W on an electric bulb mean?

A The bulb consumes electrical energy of 100 kilo Joule per hour

B The bulb consumes electrical energy of 100 Joule per minute

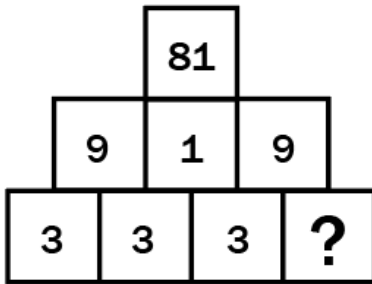
C The bulb consumes electrical energy of 100 Joule per hour

D The bulb consumes electrical energy of 100 Joule per second

Answer: D

Question 57

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



A 4

B 2

C 3

D 1

Answer: C

Explanation:

To make result 81 of each row in figure 3 is required

row 1=81

row 2= $9 \times 9 = 81$

row 3= $3 \times 3 \times 3 \times 3 = 81$

Question 58

The inspiration of Liberty, Equality and Fraternity was derived from-

A French Revolution

B Indian Revolution

C American Revolution

D Russian Revolution

Answer: A

Question 59

If 'MISTAKE' is coded as 9765412 and 'RANKED' is coded as 348120, how is 'DISTANT' coded?

A 0756485

B 0765485

C 0765458

D 0765845

Answer: B

Question 60

Who among the following is NOT a hockey player?

- A Jaipal Singh
- B Birendra Lakra
- C Manohar Topno
- D Mishal Benjamin Lakra

Answer: D

Question 61

The ratio between the length and the breadth of a rectangular park is 3 : 2. If a man cycling along the boundary of the park at the speed of 12 km/h completes one round in 8 minutes, find the area of the park in square metres.

- A 153600 m^2
- B 15360 m^2
- C 30720 m^2
- D 307200 m^2

Answer: A

Question 62

Two pipes P, Q can fill a cistern in 12 and 15 minutes separately. P is open for 4 minutes and turned off. In how much time will the remaining part be filled by Q?

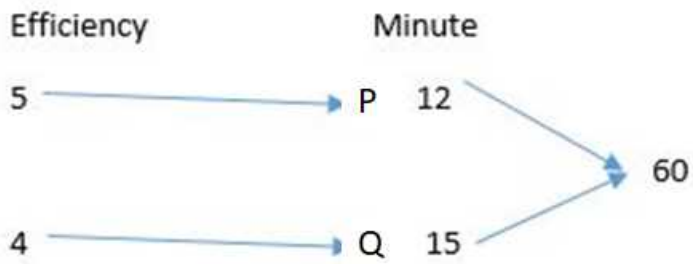
- A 9 minutes
- B 11 minutes
- C 10 minutes
- D 12 minutes

Answer: C

Explanation:

Two pipes, P and Q, fill a tank in 12 Min and 15 min respectively. That means,

Let total tank capacity 60L



that mean

P filled tank in 1 minute=5L

Q filled tank in 1 minute=4L

tank filled by P in 4 min is = 4×5

= 20

Then Pipe P is closed

So tank Capacity left $60-20=40$

i.e filled by Q only

Total time taken by Q to filled remaining part of tank is

$\frac{\text{total tank capacity left}}{\text{Efficiency of Q}}$

= $\frac{40}{4}$

=10 minutes

So, the time taken by Q is 10 minutes

Question 63

Rs.800 becomes Rs.956 in 3 years at a certain rate of Simple Interest. If the rate of interest is increased by 4%, what amount will Rs.800 become in 3 years?

- A Rs.1052
- B Rs.1025
- C Rs.1020.80
- D Rs.1054

Answer: A

Question 64

In a certain code, 'ABC DEF'is written as 'ZYX WVU". How would 'ADULT' be written in that code?

- A ZFWOU
- B ZWFOG
- C ZWUOU
- D ZWFOR

Answer: B

Explanation:

'ABC DEF' is written as 'ZYX WVU'

from given we get

A=Z B=Y C=X D=W E=V F=U

so from this we get each alphabet replaced by same position alphabet from reverse order.

A=Z

B=Y

C=X

D=W

E=V

F=U

G=T

H=S

I=R

J=Q

K=P

L=O

M=N

So ADULT=ZWFOG

Question 65

Complete the series.

540, 270, 90, 45, 15, (...)

A 6.5

B 7.9

C 6.8

D 7.5

Answer: D

Question 66

A clock started at noon. By 10 minutes past 7, the hour-hand will move through

A 200°

B 215°

C 60°

D 210°

Answer: B

Question 67

Find the missing group of alphabets in the following series.

LY, IP, GI, (...), TA

- A IP
- B VT
- C DL
- D HD

Answer: D

Question 68

A cuboid with dimensions $l \times b \times h$ is cut to get planks measuring $l \times 0.5b \times 0.4h$. How many planks will you get?

- A 5
- B 4
- C 20
- D 10

Answer: A

Question 69

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

Seven persons— P, Q, R, S, T, U and V like different colours—orange, blue, white, red, green, black and yellow, but not necessarily in the same order. They all have different hobbies (or they like different activities) driving, swimming, sailing, shopping, running, dancing and camping, but not necessarily in the same order.

The hobby of S is driving. The one whose hobby is shopping likes red colour. P likes yellow colour. The one whose hobby is camping likes green colour. The hobby of U is sailing. Neither S nor U likes black colour. The one whose hobby is dancing, and swimming does not like black colour. The hobby of P is not swimming. The one whose hobby is swimming does not like orange and white colour; S does not like orange colour. The hobby of T is neither running nor shopping. T does not like green colour. V does not like green and black colour. The hobby of Q is not camping.

Who among the following has the hobby of camping?

- A R
- B Q
- C V
- D P

Answer: A

Question 70

Which of the following affects the stomach?

- A Asthma

- B Colic
- C Spondylitis
- D Migraine

Answer: B

Question 71

What is the expansion of IRNSS?

- A Indian Rural Navigation Searching System
- B Indian Regional Navigation Satellite System
- C International Rocket Navigation Satellite System
- D Indian Renal and Nephrological Scientific Studies

Answer: B

Question 72

A number when divided by a divisor, leaves a remainder of 24. When twice that number is divided by the same divisor, the remainder is 15. What is the divisor?

- A 33
- B 23
- C 9
- D 35

Answer: A

Explanation:

Let's just assume the number be N

and the divisor be D

we know that

$$Number = Divisor \times quotient + Remainder$$

$$N = D \times K + 24, \text{ (where k is the quotient)}$$

When twice the number that is 2N

$$2 \times N = 2 \times D \times k + 48 \quad [\text{i.e } 2 \times 24 = 48]$$

As the remainder of 2N divided by D is 15, therefore 48 must go into the quotient in the form $\frac{33}{D}$

Therefore the divisor is $48 - 15 = 33$

Question 73

Rutherford's alpha particles scattering experiment resulted into the discovery of-

- A Proton
- B Nucleus in the atom

C Electron

D Neutron

Answer: B

Question 74

If $x\%$ of $10.8 = 32.4$, then find ' x '.

A 100

B 400

C 300

D 200

Answer: C

Question 75

In a school, 12% of the total number of students are good in sports. $\frac{3}{4}$ th of the total number of students are interested in co-curricular activities, 10% of the total number like music. The remaining 15 students do not want to participate in the above activities. What is the total number of students?

A 450

B 500

C 400

D 600

Answer: B

Question 76

On a sum of money, the Simple Interest for 2 years is Rs.660 while the Compound Interest for two years is Rs.696.30, the rate of interest being the same. Find the rate of interest.

A 10%

B 12.75%

C 11%

D 13%

Answer: C

Question 77

Goitre is a disease caused by-

A Deficiency of iodine

- B Defective growth hormone
- C Overeating
- D Excessive secretion of thyroxin

Answer: A

Question 78

Find the LCM of two consecutive integers a and b.

- A $\frac{ab}{2}$
- B $2ab$
- C $4ab$
- D ab

Answer: D

Question 79

If the frequency of a sound wave is 50 Hz, then what is its time period?

- A 0.05 s
- B 0.2 s
- C 0.5 s
- D 0.02 s

Answer: D

Question 80

Two inlet pipes P and Q can fill a tank in 10 hours and 12 hours separately. There is an outlet R that can let out water from the tank fully in 30 hours. If all the pipes are opened simultaneously, how much time will it take to fill the tank completely?

- A 5 hours 30 minutes
- B 6 hours 40 minutes
- C 14 hours 45 minutes
- D 6 hours 30 minutes

Answer: B

Question 81

Who among the following is an Indian social activist associated with Narmada Bachao Andolan?

- A Silverine Swer
- B Patricia Mukhim
- C Medha Patkar

D V. Mohini Giri

Answer: C

Question 82

$$2 + 3 \cdot 1^{4+5}$$

Evaluate:

A $\frac{157}{68}$

B $\frac{21}{110}$

C $\frac{5}{46}$

D $\frac{68}{157}$

Answer: D

Explanation:

Simplify the equation

$$2 + 3 \cdot 1^{\frac{21}{5}}$$

=

$$= 2 + \frac{1}{\frac{68}{21}}$$

$$= 2 + \frac{1}{\frac{21}{68}}$$

$$= \frac{1}{\frac{157}{68}}$$

$$= \frac{68}{157}$$

Question 83

If $3x - y = 5$, find the value of $\frac{8^x}{2^y}$.

A 64

B 32

C 16

D 256

Answer: B

Explanation:

Given that

$$\frac{8^x}{2^y} \quad \text{equation 1}$$

$$3x - y = 5 \quad \text{equation 2}$$

Now find the value of x

$$3x = 5 + y$$

$$x = \frac{5+y}{3}$$

Now put the value of x in equation 1

we get

$$= \frac{8}{2^y}$$

we know that $2^3 = 8$ equation 3

Using the above equation 3

$$= \frac{2^{3(5+y)/3}}{2^y}$$

$$= \frac{2^{(5+y)}}{2^y}$$

Now minimize the equation

$$= 2^{(5+y-y)}$$

$$= 2^5$$

$$= 32 \quad \text{Ans}$$

Question 84

Which word will best complete the relationship given below?

Grain : Stock :: Paper : ?

- A String
- B Collection
- C Heap
- D Bundle

Answer: D

Question 85

In blast furnace, iron oxide is reduced by-

- A Limestone
- B Carbon monoxide
- C Silica
- D Carbon

Answer: B

Question 86

What happens to the resistance of all pure metals on raising the temperature?

- A Remains unaffected
- B Becomes negligible
- C Increases

D Decreases

Answer: C

Question 87

If ' \times ' means '+', '+' means ' \times ' and '-' means ' \div ', then find the value of $(1 \times 2) + (3 \times 4) - (4 \times 5) + 9$.

A 9

B 21

C 3

D 12

Answer: B

Question 88

The chemical symbol P stands for-

A Polonium

B Palladium

C Potassium

D Phosphorus

Answer: D

Question 89

Ages of a mother and daughter are in the ratio 9 : 2. The daughter was born when the mother was 28 years. How old is the daughter?

A 4 years

B 6 years

C 8 years

D 12 years

Answer: C

Question 90

20 pens costing Rs.60 are sold at 5 pens for Rs.25. What is the profit per cent?

A $33\frac{1}{3}\%$

B 25%

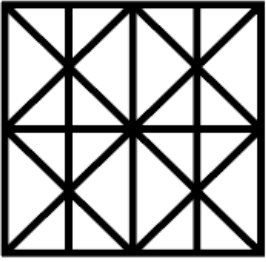
C $66\frac{2}{3}\%$

D 15%

Answer: C

Question 91

How many straight lines are there in the given figure?



- A 16
- B 14
- C 19
- D 23

Answer: B

Question 92

Hema starts from her home eastward in order to go to school. She took right turn and took left to reach school. Which direction was her school from home?

- A North east
- B North west
- C South east
- D South west

Answer: C

Question 93

The most abundant element in the human body is-

- A Oxygen
- B Nitrogen
- C Carbon
- D Calcium

Answer: A

Question 94

What is the light on the moon which makes it visible to us from Earth?

- A Moon gets light from artificial satellites revolving around the Earth
- B Moon gets light from Earth

C Sunlight falls on moon and the illuminated part of the moon is visible to us

D Moon has it's own light

Answer: C

Question 95

Complete the series.

AAZ, FEX, KIU, POQ, (...)

A XUP

B WUO

C UUR

D UUL

Answer: D

Question 96

In a 300 m race, P beats Q by 22.5 m or 6 seconds. What is Q's time over the course?

A 80 seconds

B 86 seconds

C 78 seconds

D 76 seconds

Answer: A

Question 97

Which of the following is a popular folk dance of Maharashtra?

A Dandiya

B Bhangra

C Garba

D Tamasha

Answer: D

Question 98

The structure of the eye which serves to refract and focus light rays upon retina is called -

A Cornea

B Lens

C Pupil

D Iris

Answer: B

Question 99

Which of the following exhibits maximum number of valence electrons?

A Na

B P

C Al

D Si

Answer: B

Question 100

Find the median of the discrete values.

$(a + 4), (a - 3.5), (a - 2.5), (a - 3), (a - 2), (a + 0.5), (a + 5)$ and $(a - 0.5)$.

A $a - 0.75$

B $a - 1.5$

C $a - 1.25$

D $a - 2.5$

Answer: C