SSC CGL 2012 Tier 1 1 July NZ Morning III

General Awareness

Instructions
For the following questions answer them individually

Question 1

The National Commission for Minorities was constituted in the year

A 1990

B 1992

C 1980

D 1989

Answer: B

Question 2

The first Indian who was chosen as the Secretary General of Commonwealth is

A Rakesh Verma

B Gopalaswami 60.

C Krishna Murthy

D Kamalesh Sharma

Answer: D

Question 3

In which systems of government is bicameralism an essential feature ?

A Federal system

B Unitary system

C Parliamentary system

D Presidential system

Answer: A

Question 4

Kuldip Nayer, a journalist, was appointed as a High Commissioner in

A Sri Lanka

B Australia

C UK

D Pakistan

Answer: C

Question 5

Which king is referred to as Devanampiya Piyadassi (Beloved of the Gods) in the inscriptions ?

A Asoka

B Harsha

C Bindusara

D Chandragupta Maurya

Answer: A

Question 6

Socialism succeeds in achieving

A higher standard of living of the people

B equal distribution of income in the society

C higher individual welfare in the society

D maximum social welfare in the society

Answer: B

Question 7

Monopolist resorts to price discrimination depending upon which factor?

A Elasticity of supply

B Elasticity of demand

C Law of demand

D Law of supply

Answer: B

Question 8

Economic planning is an essential feature of

A Socialist economy

B Capitalist economy

C Mixed economy

D Dual economy

Answer: A

Question 9

The HYV programme in India is also called as

A Traditional Agriculture

B New Agricultural Strategy

C White Revolution

D Blue Revolution

Answer: B

Question 10

The National Policy for Empowerment of Women was adopted in the year

A 2001

B 2005

C 1991

D 1995

Answer: A

Question 11

Ballots were first used in

A Australia

B USA

C Ancient Greece

D England

Answer: A

Question 12

The Rashtriya Barh Ayog (RBA) is related with

A Droughts and Floods

B Poverty Alleviation

C Floods

D Disaster Management

Answer: C

Question 13

Which of the following criteria is not used for the classification of human races ?

A Nose

B Hair

C Eyes

D Ear

Answer: D

Question 14

Railway coaches are mainly manufactured at

A Jamshedpur

B Chittaranjan

C Perambur

D Varanasi

Answer: C

Question 15

Fertilization occurs normally in the

A Cervix

B Vagina

C Fallopian tube

D Uterus

Answer: C

Question 16

People consuming alcohol in heavy quantities generally die of

A liver or stomach cancer

B weakening of heart muscles leading to cardiac arrest

C blood cancer

D Cirrhosis

Answer: D

Question 17

The organisms at the base of the grazing foodchain are

A Carnivores

B Decomposers

C Producers

D Herbivores

Answer: C

Question 18

Who was credited with the destruction of 'Chihalgani' , a group of powerful nobles ?

A Balban

B Qutbuddin Aibak

C Iltutmish

D Razia Sultan

Answer: A

Question 19

Bombay was given away as dowry to the English King Charles II for marrying the Princess of

A France

B Portugal

C Holland

D Denmark

Answer: B

Question 20

The Grand Trunk Road built by Shershah connected Punjab with

A Agra

B East Bengal

C Lahore

D Multan

Answer: A

Question 21

Name the Maratha Saint who was a contemporary of Shivaji.

A Saint Eknath

B Saint Tukaram

C Saint Dhyaneshwar

D Namdev

Answer: B

Question 22

The study of lake is called

A Topology

B Hydrology

C Limnology

D Potomology

Answer: C

Question 23

A series of lines connecting places having a quake at the same time are called

A Homoseismal lines

B Seismolines

C Coseismal lines

D Isoseismal lines

Answer: A

Question 24

'Lumen' is the unit of

A Illuminance

B Brightness

C Luminous flux

D Luminous intensity

Answer: C

Question 25

The transfer of date from a CPU to peripheral devices of computer is achieved through

A interfaces

B buffer memory

C modems

D computer ports

Answer: A

Question 26

Which of the following items is not used in Local Area Networks (LANs) ?

A Interface Card

B Cable

C Computer

D Modem

Answer: C

Question 27

The mass of 10 moles of water is

A 90 g

B 45 g

C 18 g

D 180 g

Answer: D

Question 28

Vitamin A is rich in

A Carrot

B Lime

C Beans

D Rice

Answer: A

Question 29

The high boiling point of water compared to hydrogen sulphide or hydrogen chloride is due to

A Dipole insulation

B Van der Waal's attraction

C Polar covalent bonding

D Hydrogen bonding

Answer: D

Question 30

Which is one of the important factors that determines the chemical properties of an element ?

A Number of electrons

B Number of neutrons

C Number of protons

D All of the above

Answer: A

Question 31

The Central Drug Reasearch Institute of India is located at

A Madras

B Lucknow

C Delhi

D Bangalore

Answer: B

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Question 32

Which of the following cereals was among the first to be used by man ?

A Rye

B Wheat

C Barley

D Oat

Answer: B

Question 33

Which of the following wheat species are being cultivated in India ?

A Club wheat

B Durum wheat

C Emmer wheat

D Bread wheat

Answer: B

Question 34

What is the example of a 'dissipative force' ?

A Electrostatic force

B Magnetic force

C Gravitational force

D Frictional force

Answer: D

Question 35

If a resistive wire is elongated, then its resistance?

A decreases

B remains constant

C increases

D All of the above

Answer: C

Question 36

If a magnet has a third pole, then the third pole is called ?

A defective pole

B consequent pole

C extra pole

D arbitrary pole

Answer: B

Question 37

How many spokes are there in the Dharmachakra of the National Flag ?

A 14

B 18

C 22

D 24

Answer: D

Question 38

The latest official language of the U.N. is

A Russian

B Arabic

C Chinese

D Spanish

Answer: B

Question 39

Srikrishna Committee Report, which was made public in 2011, is related to

A rejuvenation of higher education

B demand for a separate Telangana State

C ragging in educational institutions

D impeachment of Justice Dinakaran

Answer: B

Question 40

The latest book 'Kurukshetra to Kargil' is written by

A Suryanath Singh

B Kunal Bhardwaj

C Karan Singh

D Kuldip Singh

Answer: D

Question 41

The Educational Development Index (EDI) Report, released in 2011, is led by

A Tamil Nadu

B Puducherry

C Kerala

D Lakshadweep

Answer: C

Question 42

Shunglu Committee, which submitted its report in 2011, is related to

A Commonwealth Games scandal

B reforms in the Insurance sector

C revamp of Defence management

D management of Cooperative Sector

Answer: A

Question 43

The National Football Championship (Santosh Trophy 2017 - 18) was won by

A Kerala

B Punjab

C Manipur

D Goa

Answer: A

Question 44

The organisation involved primarily with environmental planning is

A CIFRI

B ICAR

C CSIR

D NEERI

Answer: D

Question 45

What would be the impact of global warming on mangrove forests ?

A They will grow more luxurious

B Large areas of mangroves will be submerged

C Their role as carbon sinks will become more important

D Both (a) and (c) above

Answer: D

Question 46

The sweet taste of fruits is due to

A Lactose

B Fructose

C Maltose

D Ribose

Answer: B

Question 47

The most endangered Asiatic top predator on the edge of extinction is

A Black Bear

B Asiatic Lion

C Siberian Tiger

D Dhole

Answer: D

Question 48

Analects is the sacred book of

A Confucianism

B Judaism

C Shintoism

D Taoism

Answer: A

Question 49

The seat of Madhya Pradesh High Court is located at

A Gwalior

B Indore

C Bhopal

D Jabalpur

Answer: D

Question 50

The brightest planet is

A Venus

B Mercury

C Jupiter

D Mars

Answer: A

English

Instructions

In the following questions, some parts of the sentences have errors and some have none. Find out which part of a sentence has an error. If a sentence is free from error, then your answer is (d), i.e., No error.

Question 51

You do not (a)/ look as (b)/ your brother. (c)/ No error (d)

A You do not

B look as

C your brother.

D No error

Answer: B

Question 52

My elder brother (a)/ is six (b)/ foot high.(c)/ No error (d)

A My elder brother

B is six

C foot high.

D No error

Answer: C

Question 53

Without no proof of your guilt (a)/ the only course open to me (b)/ is to dismiss the case. (c)/ No error (d)

A Without no proof of your guilt

B the only course open to me

C is to dismiss the case.

D No error

Answer: A

Question 54

As we see it, (a)/ she appears to be unreasonable (b)/ anxious about pleasing her husband. (c)/ No error (d)

A As we see it,

B she appears to be unreasonable

C anxious about pleasing her husband.

D No error

Answer: B

Question 55

The scissor is (a) / lying on (b)/ the table. (c)/ No error (d)

A The scissor is

B lying on

C the table.

D No error

Answer: A

Instructions

In the following questions, sentences are given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four as your answer.

Question 56

The Union Budget is likely to be presented on February 26, two days ahead of the ___ date.

A critical

B conventional

C suitable

D convenient

Answer: B

Question 57

I am sorry___ the mistake.

A from

B with

C for

D at

Answer: C

Question 58

He ____her that she would pass.

A insured

B ensured

C assumed

D assured

Answer: D

Question 59

Your father _____worry. I'm a very careful driver.

A needn't

B none

C can't

D doesn't

Answer: A

Question 60

The ____chosen for construction of the building is in the heart of the city.

A cite

B slight

C sight

D site

Answer: D

General Science Notes for SSC CGL

Instructions

In the following questions, out of the four alternatives, choose the one which best expresses the meaning of the given word as your answer.

Question 61

Nexus

A connection

B distance

C deficit

D difference

Answer: A

Question 62

Mammoth

A straight

B huge

C wild

D greedy

Answer: B

Question 63

Hyperbole

A expansion

B imitation

C decoration

D exaggeration

Answer: D

Question 64

Eulogy

A apology

B address

C speech

D praise

Answer: D

Question 65

Menacingly

A dangerously

B threateningly

C harmfully

D hideously

Answer: B

Instructions

In the following questions, choose the word opposite in meaning to the given word as your answer.

Question 66

Impeccable

A faulty

B tedious

C flashy

D boring

Answer: A

Question 67

Amalgamate

A separate

B combine

C assimilate

D integrate

Answer: A

Question 68

Zenith

A climax

B crisis

C acme

D nadir

Answer: D

Question 69

Influx

A reflex

B deflection

C effluent

D exodus

Answer: D

Question 70

Orderly

A semitic

B colic

C democratic

D chaotic

Answer: D

Instructions

In the following questions, four alternatives are given for the idiom/ phrase printed in bold in the sentence. Choose the alternative which best expresses the meaning of the idiom/phrase as your answer.

Question 71

Ram is very calculative and always has an axe to grind.

A has no result

B works for both sides

C has a private agenda

D fails to arouse interest

Answer: C

Explanation:
'an axe to grind'means to have a hidden agenda. Option C, which is the closest must be the right answer.

Question 72

The police looked all over for him but drew a blank.

A did not find him

B put him in prison

C arrested him

D took him to court

Answer: A

Explanation:
You draw a blank when you attempt to recall something and fail, or when you try to come up with a solution to a problem, but fail. Option A which the closest must be the right choice.

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Question 73

On the issue of marriage, Sarita put her foot down.

A stood up

B was firm

C got down

D walked fast

Answer: B

Explanation:
'put(one's) foot down' means to be inflexible in one's position or decision. Option B which is closest must be the right choice.

Question 74

His investments helped him make a killing in the stock market.

A lose money quickly

B plan a murder quickly

C murder someone quickly

D make money quickly

Answer: D

Explanation:
'to make a killing' means to have a great success, especially in making money. Option D which is the closest is the right answer.

Question 75

There is no gainsaying the fact that the country is in difficulties.

A ignoring

B hiding

C forgetting

D denying

Answer: D

Explanation:
Gainsaying means 'to declare to be false or deny'. Option D which is closest is the right choice.

Instructions

In the following questions, a part of the sentence is printed in bold. Below are given alternatives to the bold part at (a), (b) and (c) which may improve the sentence. Choose the correct alternative. In case no improvement is needed, your answer is (d).

Question 76

Sordid and sensational books tend to vitiate the public taste.

A divide

B distract

C distort

D No improvement

Answer: B

Question 77

By studying AIDS has engaged many researchers in the last decade.

A Important study

B Now that the study

C The study of

D No improvement

Answer: C

Question 78

His Master's thesis was highly estimated and is now being prepared for publication.

A was highly discussed

B was highly commended

C is highly appraised

D No improvement

Answer: B

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Question 79

No sooner had she realized her blunder than she began to take corrective measures.

A then she began to take

B than she began taking

C when she began to take

D No improvement

Answer: D

Question 80

A good scholar must be precise and possess originality .

A must be precise and original

B must be possess precision and original

C must be precision and possess originality

D No improvement

Answer: A

Instructions

In the following questions, out of the four alternatives, choose the one which can be substituted for the given words/sentence.

Question 81

One who loves books

A Bibliophile

B Bibliophagist

C Bibliophoebe

D Bibliographer

Answer: A

Question 82

Speaking without preparation

A Deliberate

B Fluent

C Loquacious

D Extempore

Answer: D

Question 83

Special trial of the Head of State by Parliament

A Impingement

B Infringement

C Impeachment

D Impediment

Answer: C

Question 84

Someone able to use both hands with equal skill

A Ambivalent

B Amphibious

C Ambiguous

D Ambidextrous

Answer: D

Question 85

Cure for all diseases

A Curable

B Panacea

C Incurable

D Curative

Answer: B

Instructions

In the following questions, there are four different words out of which one is correctly spelt. Find the correctly spelt word.

Question 86

A pleintive

B sustein

C villain

D alleince

Answer: C

Question 87

A cornissioner

B commissionar

C commisioner

D commissioner

Answer: D

Question 88

A aprentice

B advertise

C treatice

D sencitive

Answer: B

Question 89

A suprintendent

B supirentendent

C superintendent

D superentendent

Answer: C

Question 90

A symetry

B symmitry

C symatry

D symmetry

Answer: D

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Instructions

In the following questions, you have a brief passage with 5 questions following it. Read the passages carefully and choose the best answer to each question out of the four alternatives.

Two years later, in November 1895, he signed his final will. He left the bulk of his fortune, amounting to about £ 1,75,000 to a trust fund administered by Swedish and Norwegian trustees. The annual interest shall be awarded as prizes to those persons who during the previous year have rendered the greatest services to mankind. The interest shall be divided into five equal parts — now amounting to about £ 8,000 each one of which shall be awarded to the person who has made the most important discovery or invention in the realm of physics, one to the person who has made the most important chemical discovery or improvement, one to the person who has made the most important physiological or medical discovery, one to the person who has produced the most outstanding work of literature, idealistic in character, and one to the person who has done the best work for the brotherhood of nations, the abolition or reduction of standing armies, as well as for the formation or popularization of peace congress.

Question 91

The said prize is awarded

A once in 5 years

B every year

C once in 4 years

D once in 2 years

Answer: B

Question 92

Which is the prize that is referred to in the passage ?

A Nobel Prize

B Magsaysay Award

C Pulitzer Prize

D Booker Prize

Answer: A

Question 93

The number of prizes in the field of science are

A Four

B One

C Three

D Five

Answer: C

Question 94

Total annual prize money amounts to

A £ 8,000

B £ 1,750,000

C £ 350,000

D £ 40,000

Answer: A

Question 95

Prize is awarded for outstanding work in

A Chemistry

B Literature

C Physics

D All the above

Answer: D

Instructions

In the following questions, you have a brief passage with 5 questions following it. Read the passages carefully and choose the best answer to each question out of the four alternatives.

If an opinion contrary to your own makes you angry, that is a sign that you are subconsciously aware of having no good reason for thinking, as you do. If someone maintains that two and two are five, or that Iceland is on the Equator, you feel pity rather than anger, unless you know so little of arithmetic or geography that his opinion shakes your own contrary conviction.

Question 96

If someone else's opinion makes us angry, it means that

A we are subconsciously aware of having no good reason for becoming angry

B there may be good reasons for his opinion but we are not consciously aware of them

C our own opinion is not based on good reason and we know this subconsciously

D we are not consciously aware of any reason for our own opinion

Answer: C

Question 97

"Your own contrary conviction" refers to

A the fact that you feel pity rather than anger

B the opinion that two and two are four and that Iceland is a long way from the Equator

C the opinion that two and two are five and that Iceland is on the Equator

D the fact that you know so little about arithmetic or geography

Answer: A

Question 98

Conviction means

A persuasion

B disbelief

C strong belief

D ignorance

Answer: C

Question 99

The writer says if someone maintains that two and two are five you feel pity because you

A have sympathy

B don't agree with him

C want to help the person

D feel sorry for his ignorance

Answer: D

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Question 100

The second sentence in the passage

A builds up the argument of the first sentence by restating it from the opposite point of view

B makes the main point which has only been introduced by the first sentence

C simply adds, a further point to the argument already stated in the first sentence

D illustrates the point made in the first sentence

Answer: D

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Quant

Instructions
For the following questions answer them individually

Question 101

P and Q are two points observed from the top of a building $10\sqrt{3}$ m high. If the angles of depression of the points are complementary and PQ = 20m, then the distance of P from the building is

A 25 m

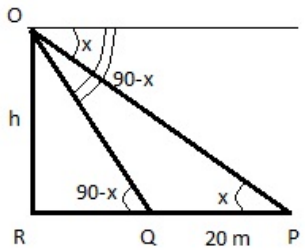
B 45 m

C 30 m

D 40 m

Answer: C

Explanation:



Let the unknown angle of depression be x.Since the angles of depression are complementary, the other angle is (90-x)
$\angle ROQ = x$ since $\triangle$ ROQ is a right angled triangle.
$h = 10\sqrt{3}$
Let RQ = y metres
tan x = $\frac{OR}{RP} = \frac{RQ}{OR}$
$\frac{OR}{RP} = \frac{h}{y+20}$
$\frac{RQ}{OR} = \frac{y}{h}$
$\frac{h}{y+20} = \frac{y}{h}$
$\frac{10\sqrt{3}}{y+20} = \frac{y}{10\sqrt{3}}$
$y(y+20) = 300$
Solving for y we get y = 10 m.
RP = 20 +10 m = 30m is the distance of P from the building.
Option C is the correct answer.

Question 102

If A and B are complementary angles, then the value of $sinAcosB + cosAsinBtanAtanB + sec^2A - cot^2B$ **is**

A 2

B 0

C 1

D 1

Answer: A

Explanation:
B = 90-A (Since the angles are complementary.
$CosB = Cos(90 - A) = SinA$
$SinB = Sin(90 - A) = CosB$
$tanB = tan(90 - A) = CotA$
$Cot^2B = Cot^2(90 - A) = Tan^2A$
$sinAcosB + cosAsinBtanAtanB + sec^2A - cot^2B = sin^2A + cos^2tanAcotA + sec^2A - tan^2A$
$= sin^2A + cos^2A + 1$

$= 1 + 1 = 2$
Option A is the correct answer.

Question 103

The least value of $2sin^2\theta + 3cos^2\theta$ is

A 3

B 5

C 1

D 2

Answer: D

Explanation:
$2sin^2\theta = 2 \times (1 - cos^2\theta)$
$2sin^2\theta + 3cos^2\theta = 2 - 2cos^2\theta + 3cos^2\theta = 2 + cos^2\theta$
The least value of $cos^2\theta$ is 0.
Hence the least value is 2.
Hence Option D is the correct answer.

Question 104

A, 0, B are three points on a line segment and C is a point not lying on AOB. If ∠AOC = 40° and OX, OY are the internal and external bisectors of ∠AOC respectively, then ∠BOY is

A 70°

B 80°

C 72°

D 68°

Answer: A

Explanation:
OX is the bisector of ∠AOC = 2 ∠COX.
∴ ∠BOC = 2 ∠COY
∴ ∠AOC + ∠BOC
2∠COX + 2∠COY = 180°
2(∠COX + ∠COY) = 180°
2∠XOY = 180°
∠XOY = 90°
∴ ∠AOX + ∠XOY + ∠BOY = 180°
∠BOY = 180° - 20° - 90° = 70°.

Question 105

If 4x = sec θ and 4/x = tan θ then $(x^2 - \frac{1}{x^2})$ is

A 1/16

B 1/8

C 1/2

D 1/4

Answer: A

Explanation:

$4x = sec\theta$

$x = \frac{sec\theta}{4}$

$x^2 = \frac{sec^2\theta}{16}$

$\frac{4}{x} = tan\theta$

$\frac{1}{x} = \frac{tan\theta}{4}$

$\frac{1}{x^2} = \frac{tan^2\theta}{16}$

$x^2 - \frac{1}{x^2} = \frac{sec^2\theta}{16} - \frac{tan^2\theta}{16}$

$x^2 - \frac{1}{x^2} = \frac{sec^2\theta - tan^2\theta}{16}$

$sec^2\theta - tan^2\theta = 1$

$x^2 - \frac{1}{x^2} = \frac{1}{16}$

Hence Option A is the correct answer

Question 106

If 2 - cos^2 θ = 3 sin θ cos θ, sin θ ≠ cos θ then tan θ is

A 1/2

B 0

C 2/3

D 1/3

Answer: A

Explanation:

$2 - cos^2\theta = 1 + 1 - cos^2\theta = 1 + sin^2\theta$

Dividing the LHS and RHS by $cos^2\theta$

$1 + sin^2\theta = sec^2\theta + tan^2\theta$

$3sin\theta cos\theta = 3tan\theta$

$sec^2\theta + tan^2\theta = 3tan\theta$

$sec^2\theta = 1 + tan^2\theta$

$1 + tan^2\theta + tan^2\theta = 3tan\theta$

$1 + 2tan^2\theta = 3tan\theta$

$2tan^2\theta - 3tan\theta + 1 = 0$

let x=$tan\theta$

The equation becomes

$2x^2 + 3x + 1 = 0$

On solving for x we get x=1 and x=$\frac{1}{2}$

Option A is the correct answer.

Question 107

If sin θ + cos θ = √2 cos (90 - θ), then cot θ is

A √2 + 1

B 0

C √2

D √2 - 1

Answer: D

Explanation:
cos (90 - θ) = √2 sin θ
sin θ + cos θ =√2 sin θ
Dividing the expression by sin θ
1 + cot θ = √2
cot θ = √2 - 1
Hence Option D is the correct answer.

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Question 108

If $xsin^3\theta + ycos^3\theta = sin\theta cos\theta$ and x sin θ = y cos θ, sin θ ≠ 0, cos θ ≠ 0, then $x^2 + y^2$ is

A 1/√2

B 1/2

C 1

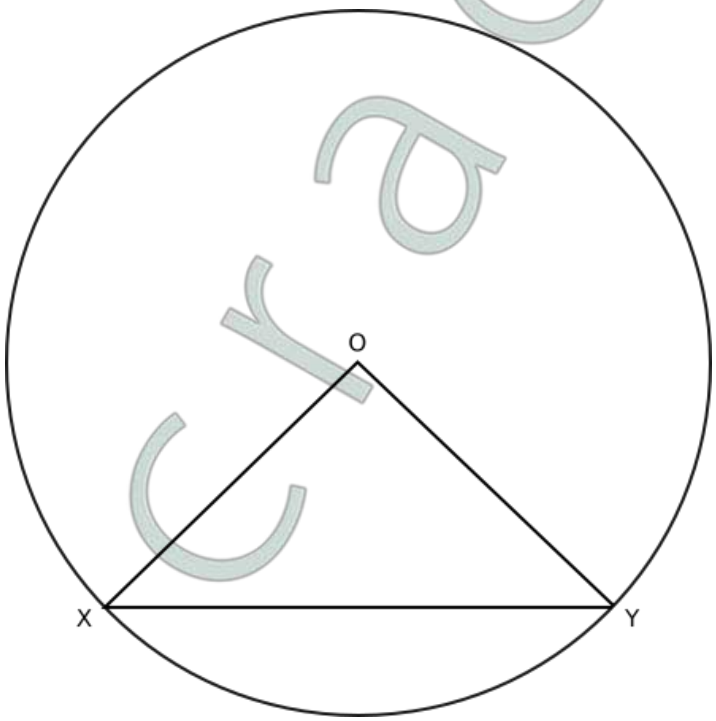
D √2

Answer: C

Explanation:
$xsin^3\theta = xsin\theta \times sin^2\theta$
$ycos^3\theta = ycos\theta \times cos^2\theta$
$xsin^3\theta + ycos^3\theta = (xsin\theta \times sin^2\theta) + (ycos\theta \times cos^2\theta)$
Since $xsin\theta = ycos\theta$
$xsin^3\theta + ycos^3\theta = xsin\theta \times (sin^2\theta + cos^2\theta)$
$sin^2\theta + cos^2\theta = 1$
$xsin\theta \times (sin^2\theta + cos^2\theta) = sin\theta cos\theta$
$x = cos\theta$
$y = sin\theta$
$x^2 + y^2 = sin^2\theta + cos^2\theta = 1$
Hence Option C is the correct answer

Question 109

In the following figure, O is the centre of the circle and XO is perpendicular to OY. If the area of the triangle XOY is 32, then the area of the circle is



A 64 π

B 256 π

C 16 π

D 32 π

Answer: A

Explanation:
Since, OX and OY are perpendicular and also radii of circle.
From, the area of triangle $=12\times OX\times OY=12\times OX\times OY = 32$
$r^2 = 2 \times 32 = 64.$
$r = 8.$

$\therefore$ The area of circle $= \pi r^2 = 64\pi$

Question 110

The side BC of ΔABC is produced to D. If ∠ACD = 108° and ∠B = ∠A/2, then ∠A is

A 36°

B 72°

C 108°

D 59°

Answer: B

Explanation:
We know that the exterior angle is equal to the sum of opposite interior angles.
∠ACD = ∠ABC + ∠BAC

Given, ∠B = $\frac{\angle A}{2}$
108° = $\frac{\angle A}{2}$ + ∠A
∠A = (108 × 2)/3 = 72°.

Question 111

Two circles of radii 4 cm and 9 cm respectively touch each other externally at a point and a common tangent touches them at the points P and Q respectively. Then the area of a square with one side PQ, is

A 97 sq.cm

B 194 sq.cm

C 72 sq.cm

D 144 sq.cm

Answer: D

Explanation:
$PQ = \sqrt{(Distance.between.centers)^2 - (r_1 - r_2)^2}$
$PQ = \sqrt{(4+9)^2 - (9-4)^2}$
= 12
Area of req. square = 12^2 = 144

Question 112

Two tangents are drawn from a point P to a circle at A and B. 0 is the centre of the circle. If ∠AOP = 60°. then ∠APB is

A 120°

B 90°

C 60°

D 30°

Answer: C

Explanation:
In △AOP , ∠AOP = 60° , ∠PAO = 90° (due ti tangent) . SO, ∠APO = 30°.
∠APB = 2 x ∠APO = 60°

Question 113

If each interior angle is double of each exterior angle of a regular polygon with n sides, then the value of n is

A 8

B 10

C 5

D 6

Answer: D

Explanation:
Let be x degree the measure of an exterior angle, then the measure of an interior angle is 2x degree. Assume that the regular polygon has n sides (or angles). We know that the sum of the interior angles is n*2x = (n-2)*180

the sum of the exterior angles is n*x = 360
Solving these two equations , we get n = 6

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Question 114

If the length of the side PQ of the rhombus PQRS is 6 cm and ∠PQR = 120°, then the length of QS, in cm, is

A 4

B 6

C 3

D 5

Answer: B

Explanation:
PQRS is rhombus. Let 'O' be the point of intersection of diagonals where the angle is 90°
∠PQO =∠PQR/2 = 60°
∠OPQ = 180° - ∠POQ - ∠PQO = 180° - 90° - 60° = 30°
In ΔPOQ: sin30° = OQ/PQ => OQ = 3 cm
Therefore QS = 2*OQ = 6cm

Question 115

The angle formed by the hourhand and the minutehand of a clock at 2 : 15 p.m. is

A 27.5°

B 45°

C 22.5°

D 30°

Answer: C

Explanation:
Angle = $|\frac{11}{2}M - 30H|$, where M=minutes , H=hours
= $|\frac{11}{2}(15) - 30(2)|$
= 22.5

Question 116

Two sides of a triangle are of length 4 cm and 10 cm. If the length of the third side is 'a cm, then

A a > 5

B 6 ≤ a ≤ 12

C a < 6

D 6 < a < 14

Answer: D

Explanation:
Given , Two sides of a triangle are of length 4 cm and 10 cm .
we know that c-b < a < c+b
Hence, 6<a<14

Question 117

If $x = (0.08)^2$, $y = \frac{1}{(0.08)^2}$ and $z = (1 - 0.08)^2 - 1$, then out of the following, the true relation is

A y < x and x = z

B x < y and x = z

C y < z < x

D z < x < y

Answer: D

Explanation:

Given that $x = (0.08)^2$, $y = \frac{1}{(0.08)^2}$ and $z = (1 - 0.08)^2 - 1$

$x = (0.08)^2$ = 0.0064

$y = \frac{1}{(0.08)^2}$ = 12.5 x 12.5 = 156.25

$z = (1 - 0.08)^2 - 1$ = a negative number

hence we can say that

z < x < y

Question 118

In xy plane, P and Q are two points having coordinates (2, 0) and (5, 4) respectively. Then the numerical value of the area of the circle with radius PQ, is

A 16π

B 32π

C 14π

D 25π

Answer: D

Explanation:

Radius of circle = Distance between PQ = $\sqrt{(5-2)^2 + (4-0)^2}$ = 5

So, area of square = πr^2 = $\pi 5^2$

= 25π

Question 119

If $x^4 + \frac{1}{x^4} = 23$, then the value of $(x - \frac{1}{x})^2$ will be

A 7

B - 7

C - 3

D 3

Answer: D

Explanation:

it is given that $x^4 + \frac{1}{x^4} = 23$

$x^2 + \frac{1}{x^2}$ = $\sqrt{(25)}$ = 5

we need to calculate $(x - \frac{1}{x})^2$ = $x^2 + \frac{1}{x^2} - 2$

= 5 - 2 = 3

Question 120

The value of $\sqrt{6 + \sqrt{6 + \sqrt{6 + \cdots}}}$ is equal to

A 3

B 10

C 8

D 2

Answer: A

Explanation:

we need to find value of $\sqrt{6 + \sqrt{6 + \sqrt{6 + \cdots}}}$

let $\sqrt{6 + \sqrt{6 + \sqrt{6 + \cdots}}}$ = x

here x = $\sqrt{6 + x}$

on squaring both sides

$x^2 - x - 6$ = 0

x = 3 , x = -2

here -2 will be rejected as square root can not give negative value and hence x = 3

$\sqrt{6 + \sqrt{6 + \sqrt{6 + \cdots}}}$ = 3

Question 121

If $x + \frac{1}{x} = 12$, the value of $x^2 + \frac{1}{x^2}$ is

A 142

B 126

C 113

D 129

Answer: A

Explanation:

it is given that $x + \frac{1}{x}$ = 12

we need to find value of $x^2 + \frac{1}{x^2}$

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

= $12^2 - 2$ = 142

Question 122

$sec^4\theta - sec^2\theta$ **is equal to**

A $tan^2\theta - tan^4\theta$

B $tan^2\theta + tan^4\theta$

C $cos^4\theta - cos^2\theta$

D $cos^2\theta - cos^4\theta$

Answer: B

Explanation:

$sec^4\theta - sec^2\theta = \frac{1}{cos^4\theta} - \frac{1}{cos^2\theta}$

$\frac{1}{cos^4\theta} - \frac{1}{cos^2\theta} = \frac{1-cos^2\theta}{cos^4\theta}$

$\frac{1-cos^2\theta}{cos^4\theta} = \frac{sin^2\theta}{cos^4\theta}$

$\frac{sin^2\theta}{cos^4\theta} = tan^2\theta \times sec^2\theta$

$tan^2\theta \times sec^2\theta = tan^2\theta \times (tan^2 + 1)$

$tan^2\theta \times (tan^2 + 1) = tan^2\theta + tan^4\theta$

Hence Option B is the correct answer.

Question 123

In ΔABC, AD is the median and AD = 1/2 BC. If ∠BAD = 30°, then measure of ∠ACB is

A 90°

B 45°

C 30°

D 60°

Answer: D

Explanation:

Consider , a triangle ABC . AD is the median .So, BD=DC. also given that AD = 1/2 BC.
So AD=DC .This makes ΔADC & ΔABD as isosceles triangles.
So , ∠BAD = ∠ABD = 30. Hence , ∠ADB = 180 - 30 - 30 = 120 . So, ∠ADC = 60.
Now, in ΔADC , ∠C=∠A .
Hence, ∠C + 60 + ∠A = 180 .
2∠C = 120 .
∠C = 60

Question 124

If √6 x √15 = x√10, then the value of x is

A 3

B ± 3

C √3

D √6

Answer: A

Explanation:
it is given that √6 x √15 = x√10

√6 x √15 = √(3x2) x √(3 x 5) = √(9 x 10) = 3√10

hence x = 3

Question 125

$3 - \frac{3+\sqrt{5}}{4} - \frac{1}{3+\sqrt{5}}$

A 0

B 3/2

C √5/2

D √5

Answer: B

Explanation:
Expression : $3 - \frac{3+\sqrt{5}}{4} - \frac{1}{3+\sqrt{5}}$

$= 3 - \frac{3+\sqrt{5}}{4} - \left[\frac{1}{3+\sqrt{5}} \times \left(\frac{3-\sqrt{5}}{3-\sqrt{5}}\right)\right]$

$= \frac{12-3-\sqrt{5}}{4} - \left(\frac{3-\sqrt{5}}{9-5}\right)$

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

$= \frac{9-3-\sqrt{5}+\sqrt{5}}{4} = \frac{6}{4} = \frac{3}{2}$

=> Ans - (B)

Question 126

If a + b + 1 = 0, then the value of $(a^3 + b^3 + 1 - 3ab)$ **is**

A 3

B 0

C - 1

D 1

Answer: B

Explanation:
given that a + b + 1 = 0

we know if a+b+c = 0

then $a^3 + b^3 + c^3 - 3abc$ = 0

as we can see that $(a^3 + b^3 + 1 - 3ab)$ resembles $a^3 + b^3 + c^3 - 3abc$ with c = 1

and hence $(a^3 + b^3 + 1^3 - (3ab \times 1))$ = 0

Question 127

In the xy coordinate system, if (a, b) and (a + 3, b + k) are two points on the line defined by the equation x = 3y - 7, then k = ?

A 7/3

B 1

C 9

D 3

Answer: B

Explanation:
In the xy coordinate system, if (a, b) and (a + 3, b + k) are two points on the line defined by the equation x = 3y - 7, then they must satisfy the equation .
so , we get a = 3b - 7
and a+3 = 3(b+k) - 7
On solving these equations , we get k = 1

Question 128

The average age of four boys, five years ago was 9 years. On including a new boy, the present average age of all the five is 15 years. The present age of the new boy is

A 14 years

B 6 years

C 15 years

D 19 years

Answer: D

Explanation:
let the boys present age be A B C D E

As the average age age of 1st four 5 years ago = 9

A+B + C +D = 9 x 4 + 20 = 56 .....(1)

now new boy E is added , and present age average is 15

A + B + C + D + E = 15 x 5 = 75 .....(2)

subtracting 1 from 2

E = 19 years

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Question 129

If the average of 39, 48, 51, 63, 75, 83, x and 69 is 60, then the value of x is

A 52

B 53

C 50

D 51

Answer: A

Explanation:
it is given that average of 39, 48, 51, 63, 75, 83, x and 69 = 60

average = $\frac{Sum}{Number of Elements}$

60 = $\frac{Sum}{8}$

Sum = 60 x 8 = 480

Sum = 39 +48+ 51+ 63+ 75+ 83+ x + 69 = 428 + x

428 + x = 480

x = 52

Question 130

The cost of a piece of diamond varies with the square of its weight. A diamond of Rs. 5,184 value is cut into 3 pieces whose weights are in the ratio 1 : 2 : 3. Find the loss involved in the cutting.

A Rs. 3,068

B Rs. 3,088

C Rs. 3,175

D Rs. 3,168

Answer: D

Explanation:
Price of diamond = Rs.5184. As price is proportional to square of weight of diamond, weight of diamond = √5184 = 72.
This weight of 72 units is divided in the ratio 1 : 2 : 3.
Hence their weights are $(\frac{1}{6}) \times 72, (\frac{2}{6}) \times 72, (\frac{3}{6}) \times 72$ i.e. 12, 24, 36 units by weight.
Hence their price are $12^2, 24^2, 36^2$, i.e., 144, 576, 1296.
Hence total price of three pieces = 144+576+1296 = 2016.
Therefore loss involved in cutting = 5184 - 2016 = 3168

Question 131

A discount of 30% on the marked price of a toy reduces its selling price by Rs. 30. What is the new selling price (in Rs.) ?

A 70

B 21

C 130

D 100

Answer: A

Explanation:
Given that , A discount of 30% on the marked price(MP) of a toy reduces its selling price(SP) by Rs. 30.
We know that, selling price = Marked price - Discount
Discount = {30÷100}x MP
Discount = 0.3MP
0.3MP = 30
MP = 100
∴ The selling price = MP - 0.3MP = 0.7MP
= 0.7 × 100 = 70.

Question 132

The capacities of two hemispherical vessels are 6.4 litres and 21.6 litres. The ratio of their inner radii is

A 4 : 9

B 16 : 81

C √2 : √3

D 2 : 3

Answer: D

Explanation:
Given, volumes of two hemispherical vessels 6.4 litres and 21.6 litres.
We know that, Volume of a hemisphere = $\frac{2\pi r^3}{3}$
$\frac{2\pi r_1^3}{3}$ = 6.4/21.6
$\frac{r_1^3}{r_2^3} = (\frac{2}{3})^3$
Hence, $\frac{r_1}{r_2} = \frac{2}{3}$

Question 133

Pipe A alone can fill a tank in 8 hours. Pipe B alone can fill it in 6 hours. If both the pipes are opened and after 2 hours pipe A is closed, then the other pipe will fill the tank in

A 6 hours

B 3.5 hours

C 4 hours

D 2.5 hours

Answer: D

Explanation:
Let us consider the capacity of the tank to be 48 litres.
Pipe A fills it in 8 hours at 6 litres per hour.
Pipe B fills it in 6 hours at 8 litres per hour.

Total of 28 litres would be filled in 2 hours with both pipes open.
Afetr 2 hours Pipe A is closed.Hence Pipe B has to fill the remaining tank.
Quantity of water needed to fill the tank is =48-28 = 20 litres.
Pipe B fills at the rate of 8 litres per hour.
Hence it takes 2.5 hours for Pipe B to fill remaining 20 litres of the tank.
Hence Option D is the correct answer.

Question 134

If (a - b) = 3, (b - c) = 5 and (c - a) = 1, then the value of $\frac{a^3+b^3+c^3-3abc}{a+b+c}$ is

A 17.5

B 20.5

C 10.5

D 15.5

Answer: A

Explanation:
it is given that (a - b) = 3, (b - c) = 5 and (c - a) = 1

we need to find the value of $\frac{a^3+b^3+c^3-3abc}{a+b+c}$

as we know that $a^3 + b^3 + c^3 = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ac)$ .....(5)

and $(a - b)^2 = a^2 + b^2 - 2ab$.....(1)

$(b - c)^2 = b^2 + c^2 - 2cb$.....(2)

$(c - a)^2 = a^2 + c^2 - 2ac$.....(3)

adding 1 , 2 and 3

17.5 = $(a^2 + b^2 + c^2 - ab - bc - ac$ .....(4)

Now using 4 and 5 statement

$\frac{a^3+b^3+c^3-3abc}{a+b+c}$ = 17.5

Question 135

The population of a town is 15000. If the number of males increases by 8% and that of females by 10%, then the population would increase to 16300. Find the number of females in the town.

A 4000

B 6000

C 3000

D 5000

Answer: D

Explanation:
let the number of males be m and number of females be f

m + f = 15000

now males are increased by 8% and females by 10 %

1.08 m + 1.1 f = 16300

solving both the equations

f = 5000

Question 136

If Rs. 5,000 becomes Rs. 5,700 in a year's time, what will Rs. 7,000 become at the end of 5 years at the same rate of simple interest ?

A Rs.10,500

B Rs.11,900

C Rs.12,700

D Rs. 7,700

Answer: B

Explanation:
let the rate of interest be R

here Rs 5000 becomes Rs 5700 in 1 year and hence interest for 1 year = Rs 700

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

700 = $\frac{5000 \times R \times 1}{100}$

R = 14%

now new principal amount = Rs 7000

T = 5 years

R = 14%

hence SI in 5 years at Rs 7000 = $\frac{7000 \times 14 \times 5}{100}$ = Rs 4900

and hence total amount = 7000 + 4900 = Rs 11900

Question 137

A thief is noticed by a policeman from a distance of 200 m. The thief starts running and the policeman chases him. The thief and the policeman run at the rate of 10 km and 11 km per hour respectively. The distance (in metres) between them after 6 minutes is

A 190

B 200

C 100

D 150

Answer: C

Explanation:
When two bodies move in the same direction their relative speed is the difference of their speeds.
The relative speed between the police and the thief is 1 km per hour.
1km per hour = 1 km in 60 minutes.
Therefore 100 m in 6 minutes.This is the distance between them after 6 minutes.
Hence Option C is the correct answer.

Question 138

'A' sells an article to 'B' at a profit of 20% and 'B' sells it to 'C' at a profit of 25%. If 'C' pays Rs. 1,200, the cost price of the article originally (in Rs.) IS

A 700

B 600

C 1,000

D 800

Answer: D

Explanation:
Cost paid by C = cost price x profit of A x profit of B
1200 = CP x 1.20 x 1.25
CP = 800

Question 139

The number nearest to 75070 which is divisible by 65, is

A 75070

B 75075

C 75010

D 75065

Answer: B

Explanation:
$\frac{75070}{65} = 1154.92$

so the nearest multiple of 65 is $65 \times 1155 = 75075$

so the answer is option B.

Question 140

The number 20% more than 80 is

A 36

B 30

C 90

D 96

Answer: D

Explanation:
let the number y is 20% more than x and hence

y = 1.2 x

here x = 80

and hence

y = 1.2 x 80 = 96

Question 141

A tree is broken by the wind. If the top of the tree struck the ground at an angle of 30° and at a distance of 30 m from the root, then the height of the tree is

A 25√3 m

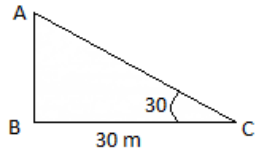
B 30√3 m

C 15√3 m

D 20√3 m

Answer: B

Explanation:



$tan30 = \frac{AB}{BC} = \frac{1}{\sqrt{3}}$

$cos30 = \frac{BC}{AC} = \frac{sqrt3}{2}$

Height of the tree = $AB + AC$

$AB = BC \times \frac{1}{\sqrt{3}}$

$AB = 30 \times \frac{1}{\sqrt{3}} = \frac{30}{\sqrt{3}}$

$AC = \frac{2 \times BC}{\sqrt{3}} = \frac{2 \times 30}{\sqrt{3}}$

$AB + AC = \frac{30}{\sqrt{3}} + \frac{60}{\sqrt{3}} = 30\sqrt{3}$

Hence Option B is the correct answer.

Question 142

If $cosA + cos^2A = 1$, then $sin^2A + sin^4A$ is equal to

A 1

B 1/2

C 0

D 1

Answer: A

Explanation:

$Sin^2A = 1 - Cos^2A$

From the question

$CosA = 1 - Cos^2A = Sin^2A$

$Sin^2A + Sin^4A = CosA + Cos^2A = 1$

Hence Option A is the correct answer.

Question 143

A farmer divides his herd of n cows among his four sons, so that the first son gets one half the herd, the second one fourth, the third son 1/5 and the fourth son 7 cows. Then the value of n is

A 240

B 100

C 180

D 140

Answer: D

Explanation:
total herd = n

1st son = n/2

2nd son = n/4

3rd son = n/5

4th son = n - (n/2 + n/4 + n/5) = n/20 = 7

n = 140

Question 144

By what least number should 675 be multiplied to obtain a number which is a perfect cube ?

A 7

B 8

C 5

D 6

Answer: C

Explanation:
675 = $5^2 \times 3^3$

and hence in order to make it a perfect cube we need to multiply it with 5 .

675 x 5 = $5^3 \times 3^3$

Question 145

The least number which when divided by 35, 45, 55 leaves the remainder 18, 28, 38 respectively is

A 3448

B 3482

C 2468

D 3265

Answer: A

Explanation:
here we need to find least number which when divided by 35, 45, 55 leaves the remainder 18, 28, 38

35 - 18 = 17

45 - 28 = 17

55 - 38 = 17

the number will be of the form = LCM(35,45,55)K - 17

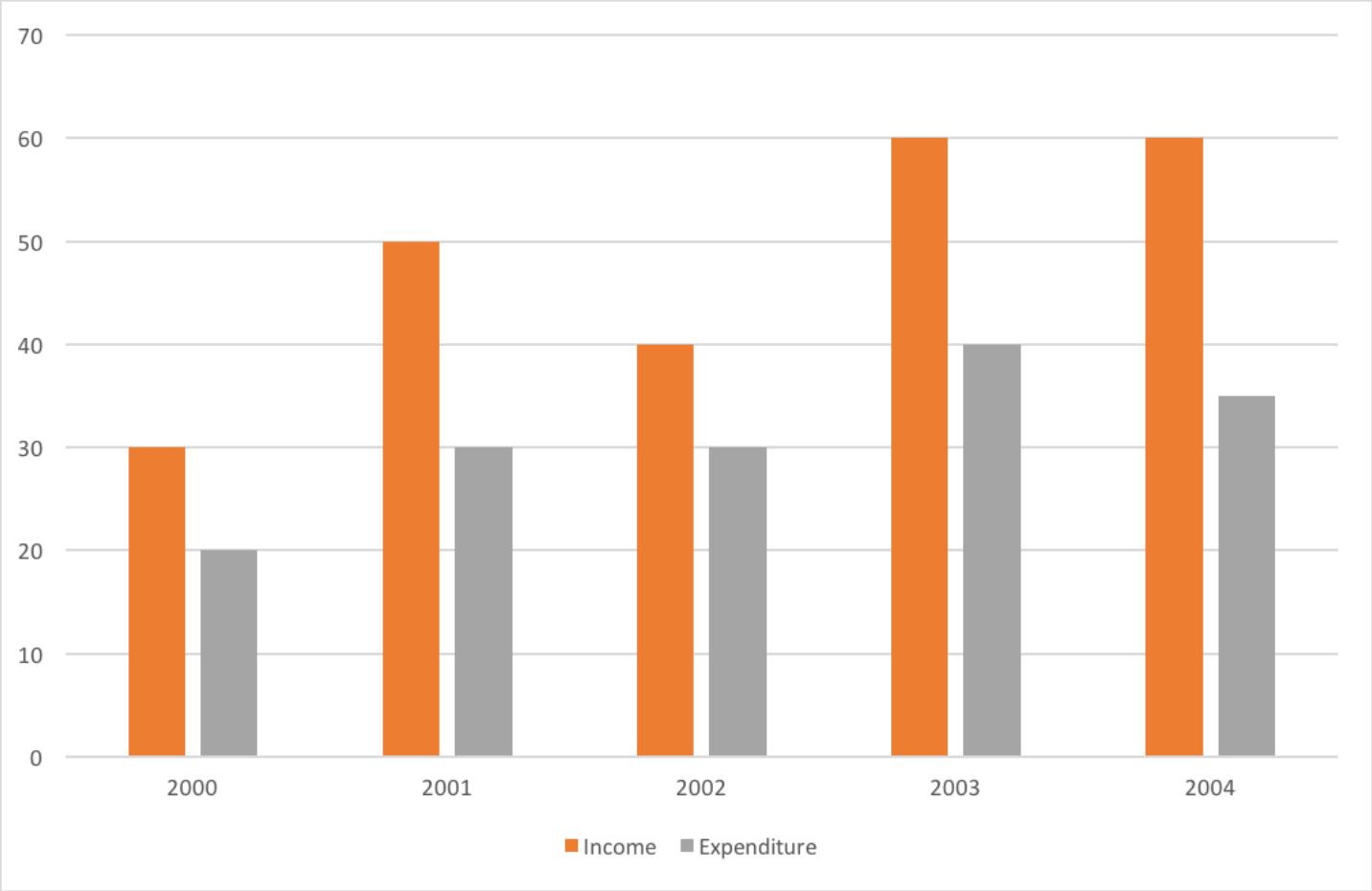
N = 3465k - 17

for least value put k = 1

N = 3448

Instructions

The graph shows Income and Expenditure(Rs. in lakhs) of a company.Study the graph and answer the questions.



Question 146

The expenditure from 2002 to 2003 increased by

A 33 1/3 %

B 40%

C 10%

D 20%

Answer: A

Explanation:

expenditure in 2002 = 30

expenditure in 2003 = 40

%increase = $\frac{40-30}{30} \times 100 = \frac{10}{30} \times 100 = 33\frac{1}{3}\%$

so the answer is option A.

Question 147

The income in 2002 was equal to the expenditure in the year

A 2003

B 2004

C 2000

D 2001

Answer: A

Explanation:
Income in 2002 = 40 lakhs = Expenditure in 2003.

so the answer is option A.

Question 148

The profit was maximum in the year

A 2003

B 2004

C 2001

D 2002

Answer: B

Explanation:
profit = income - expenditure

profit in 2000 = 30 - 20 = 10lakhs

profit in 2001 = 50 - 30 = 20lakhs

profit in 2002 = 40 - 30 = 10lakhs

profit in 2003 = 60 - 40 = 20lakhs

profit in 2004 = 60 - 35 = 25lakhs

so the answer is option B.

Question 149

The difference in profit between 2001 and 2002 is

A Rs. 25 lakhs

B No difference

C Rs. 10 lakhs

D Rs. 20 lakhs

Answer: C

Explanation:
profit = income - expenditure

profit in 2001 = 50 - 30 = 20 lakhs

profit in 2002 = 40 - 30 = 10 lakhs

difference = 20 - 10 = 10lakhs

so the answer is option C.

Question 150

The number of years in which the income exceeds the average income is

A three

B four

C one

D two

Answer: A

Explanation:
Income in 2000 = 30lakhs

Income in 2001 = 50lakhs

Income in 2002 = 40lakhs

Income in 2003 = 60lakhs

Income in 2004 = 60lakhs

average income = $\frac{30+50+40+60+60}{5} = \frac{240}{5}$ =48lakhs

income is more than 48lakhs in 2001, 2003 & 2006.

so the answer is option A.

Reasoning

Instructions

In each of the following questions, select the related letters/word/number fromthe given alternatives.

Question 151

8 : 12 : : 6 : ?

A 9

B 11

C 5

D 7

Answer: A

Explanation:
Expression = 8 : 12 : : 6 : ?

=> $\frac{8}{12} = \frac{6}{x}$

=> $x = \frac{3}{2} \times 6$

=> $x = 3 \times 3 = 9$

=> Ans - (A)

Question 152

13 : 19 : : 21 : ?

A 41

B 81

C 141

D 14

Answer: A

Explanation:
Expression = 13 : 19 : : 21 : ?

Each digit is raised to the power of 2

Eg = $1^2 = 1$ and $3^2 = 9$

Similarly, $2^2 = 4$ and $1^2 = 1$

Thus, 21 : 41

=> Ans - (A)

Question 153

Eagle : Swoops :: Duck : ?

A waddles

B floats

C swims

D flits

Answer: A

Explanation:
The movement of an eagle is called swoop, similarly a duck waddles, i.e. a swaying motion.

=> Ans - (A)

Question 154

APPLE : 50 : : ORANGE : ?

A 60

B 69

C 61

D 63

Answer: A

Explanation:

Expression = APPLE : 50 :: ORANGE : ?

The sum of the numbers according to the English alphabetical series is given.

APPLE = 1 + 16 + 16 + 12 + 5 = 50

ORANGE = 15 + 18 + 1 + 14 + 7 + 5 = 60

=> Ans - (A)

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Question 155

Accommodation : Rent :: Journey : ?

A Freight

B Octroi

C Fare

D Expense

Answer: C

Explanation:
Accommodation means to live in a room and pay rent, similar to the expense of a journey is called fare.

=> Ans - (C)

Question 156

Fire : Smoke : : ?

A Children : School

B Cloud : Rain

C Moon : Sky

D Shoe : Polish

Answer: B

Explanation:
Smoke occurs from fire, similarly rain comes from the clouds.

=> Ans - (B)

Question 157

Grenade : Gun : : ?

A Sister : Brother

B Father : Mother

C Man : Woman

D Head : Brain

Answer: D

Explanation:
Grenade and gun are fire arms, similarly head and brain are sensitive organs.

=> Ans - (D)

Question 158

TSH : IRQ :: QPK : ?

A LNO

B LON

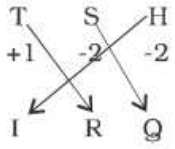
C PWK

D PON

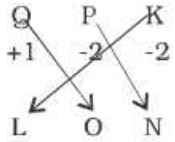
Answer: B

Explanation:
Expression = TSH : IRQ :: QPK : ?

The pattern followed is :



Similarly, for QPK :



=> Ans - (B)

Question 159

AEZ : FPY : : BGX : ?

A HWW

B IYY

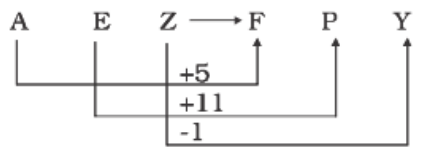
C HTX

D HYW

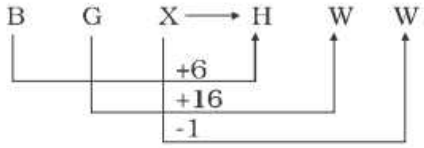
Answer: A

Explanation:
Expression = AEZ : FPY : : BGX : ?

The pattern followed is :



Similarly, for BGX :



=> Ans - (A)

Instructions

In each of the following questions, find the odd number/letters/word/number pair from the given alternatives.

Question 160

A SP

B NL

C ZW

D TQ

Answer: B

Explanation:
(A) : S (-3 letters) = P

(B) : N (**-2** letters) = L

(C) : Z (-3 letters) = W

(D) : T (-3 letters) = Q

=> Ans - (B)

Question 161

A Major

B Colonel

C Brigadier

D Admiral

Answer: D

Explanation:
Major, Colonel and Brigadier are different ranks in Indian Army. Admiral is the topmost rank in Indian Navy.

=> Ans - (D)

Question 162

A Life Insurance Corporation

B New India Assurance Company Ltd.

C United India Insurance Company Ltd.

D National Insurance Company Ltd.

Answer: A

Explanation:
Except Life Insurance Corporation, all others are insurance companies for general insurance, i.e. vehicles, properties etc.

=> Ans - (A)

Question 163

A Hurdle

B Disease

C Barrier

D Obstacle

Answer: B

Explanation:
Except disease, all other terms denote obstruction, hindrance or interruption.

=> Ans - (B)

Question 164

A Mar

B Remedy

C Maim

D Mutilate

Answer: B

Explanation:
Except remedy, all other terms denote loss of something.

=> Ans - (B)

Question 165

A Socrates

B Beethoven

C Mozart

D Bach

Answer: A

Explanation:
Socrates was a Greek philosopher. Beethoven was a German composer and musician, Bach was also a German composer and Mozart was Austrian composer.

=> Ans - (A)

Question 166

A (132, 5)

B (125, 8)

C (124, 7)

D (112, 4)

Answer: D

Explanation:
Among the given pairs, only in the last one, i.e. 112 is completely divisible by 4, hence it is the odd one out.

=> Ans - (D)

Question 167

A 6246-6296

B 7137-7267

C 4344-4684

D 5235-5465

Answer: A

Explanation:
The difference between the two numbers in the first pair is least.

6296 - 6246 = 50

7267 - 7137 = 130

4684 - 4344 = 340

5465 - 5235 = 230

=> Ans - (A)

Instructions

In each of the following questions, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

Question 168

YX, UTS, ONML, ___?

A FEDCB

B GFEDC

C IHGFE

D HGFED

Answer: B

Explanation:
In the given series every next term has one letter more than its previous term
the last letter of first term is moved three steps backward to form first letter of next term
the last letter of second term is moved four steps backward to form first letter of next term
So next term after ONML is
L -5 ,L-6,L-7,L-8,L-9
GFEDC

Question 169

DA, HE. LI, __?__ , TN

A PJ

B PT

C PM

D PK

Answer: A

Explanation:
In the given series
the first letter of each term is formed by by taking the first letter of each previous term 4 steps forward

SSC CGL Free Mock Test

Question 170

B E I N T__?

A X

B Y

C A

D Z

Answer: C

Explanation:
The Series follows the pattern
B,B + 3 =E,E +4 =I,I +5= N ,N + 6 = T ,T + 7 =A

Question 171

AZ, CX, EV, ____?

A HT

B HU

C GS

D GT

Answer: D

Explanation:
In the given series the first letter of each term is obtained by moving the first letter of each term 2 steps forward
the second letter of each term is obtained by taking next letter of each term 2 steps backward
So GT is the next term

Question 172

D9Y, J27S, P81M, V243G, ___?

A A324B

B C729B

C B729A

D A729B

Answer: C

Explanation:
In the given series
the first letter of each term is obtained by taking the first letter of the previous term six steps forward
the third letter of each term is obtained by taking the third letter of the previous term six steps backward
The number series follow the pattern

$3^2, 3^3, 3^4, 3^5, 3^6$

So the next term is
B729A

Instructions
For the following questions answer them individually

Question 173

Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ? _c_bd_cbcda_a_db_a

A daabbc

B bdbcba

C adabcd

D cdbbca

Answer: C

Explanation:
The pattern followed is that in a group of 4 letters, the combination of alphabets 'a,b,c,d' is repeated.

= **ac**d**b** d**a**cb cda**b** a**c**db **d**a

=> Ans - (C)

Instructions

In each of the following questions, identify the wrong number in the series.

Question 174

9, 19, 40, 83, 170, 340

A 83

B 40

C 340

D 170

Answer: C

Explanation:
By observing the term of series it is deduced that the series must follow the pattern
19 - 9 = 10
40 -19 = 21 = 2 x 10 +1
83 -40 = 43 = 2 x 21 +1
170- 83 = 87 = 2 x 43 + 1
345 - 170 = 175 = 2 x 87 + 1
So option C is correct

Question 175

21, 28, 33, 35, 37, 36

A 21

B 36

C 33

D 35

Answer: D

Explanation:
By observing the term of series it is deduced that the series must follow the pattern
21
21 +7 =28
28 +7-2 = 33
33 +7 -2-2 = 36
36 +7-2-2-2 =37
37 + 7 -2-2-2-2 =36
Hence option D is correct

Question 176

5, 13. 29, 61, 120, 253

A 120

B 253

C 61

D 29

Answer: A

Explanation:
The series follows the pattern
5 , 5 x 2 +3 = 13 , 13 x 2 +3 = 29 , 29 x 2 +3 = 61 ,61 x 2 +3 = 125 , 125 x 2 +3 = 253
So option A is correct

Question 177

0, 7, 28, 63, 124, 215

A 28

B 215

C 7

D 63

Answer: A

Explanation:
By checking each of the term of series
it is deduced that
the series must follow the pattern

1^3-1 , 2^3-1,3^3-1,4^3-1,5^3-1 ,6^3-1
So option A is correct answer

Instructions
For the following questions answer them individually

Question 178

Some relationships have been expressed through symbols which are explained below :
o = greater than
Δ = not equal to
× = not less than
+ = equal to
Φ = not greater than
∇ = less than
a ∇ b ∇ c implies

A a ∇ b Φ c

B a Φ b + c

C a o b + c

D a o b × c

Answer: A

Explanation:
For the above given relationships we can infer that a ∇ b ∇ c implies a<b<c.
therefore the only option that can be inferred from the above statement is option C that is $a < b \leq c$

Question 179

2	3
4	5

= ?

A 14400

B 15600

C 23040

D 17400

Answer: A

Explanation:
The square of the product of terms is

= $(2 \times 3 \times 4 \times 5)^2$

= $(120)^2 = 14400$

=> Ans - (A)

Question 180

If PEAR is written a GFDN, how is REAP written in this code ?

A FDNG

B NFDG

C DNGF

D NDFG

Answer: B

Explanation:
If PEAR is written a GFDN, then we can infer that:
P represents G
E represents F
A represents D
R represents N
hence REAP will be coded as NFDG. the answer correct is option **B.**

Question 181

If 54 + 43 = 2, 60 + 51 = 10,then 62 + 72 = ?

A 30

B 18

C 20

D 9

Answer: D

Explanation:
The pattern followed is that the difference of the digits is added.

Eg = $(5-4)+(4-3)=1+1=2$

and $(6-0)+(5-1)=6+4=10$

Similarly, $(6-2)+(7-2)=4+5=9$

=> Ans - (D)

Question 182

If L denotes ×
M denotes ÷
P denotes +
Q denotes -
then 16 P 24 M 8 Q 6 M 2 L 3 = ?

A 10

B 9

C 12

D 1 1

Answer: A

Explanation:
If L denotes ×
M denotes ÷
P denotes +
Q denotes -
then 16 P 24 M 8 Q 6 M 2 L 3 = 16+24÷8-6÷2×3. by applying BODMAS rule we get the value as 10.

the correct answer is option A.

Question 183

In this question, from the given alternatives select the word which cannot be formed by using the letters of the given word.
APPROPRIATE

A PIRATE

B APPROVE

C PROPER

D RAPPORT

Answer: B

Explanation:
from the letters of the word APPROPRIATE, all except the word APPROVE can be formed as APPROPRIATE doesn't contain the letter V. hence the correct answer is option B.

Question 184

If FLATTER is coded as 7238859 and MOTHER is coded as 468159, then how is MAMMOTH coded ?

A 4344681

B 4344651

C 4146481

D 4346481

Answer: A

Explanation:
The code for each letter is given :

M -> 4
A -> 3
M -> 4
M -> 4
O -> 6
T -> 8
H -> 1

Thus, MAMMOTH : **4344681**

=> Ans - (A)

Question 185

If 16-2=2, 9-3 = 0 , 81-1= 8, then what is 64 - 4 = ?

A 4

B 2

C 6

D 8

Answer: A

Explanation:
The pattern followed is that for $a^2 - b = a - b$

Eg = $4^2 - 2 = 4 - 2 = 2$

and $3^2 - 3 = 3 - 3 = 0$

and $9^2 - 1 = 9 - 1 = 8$

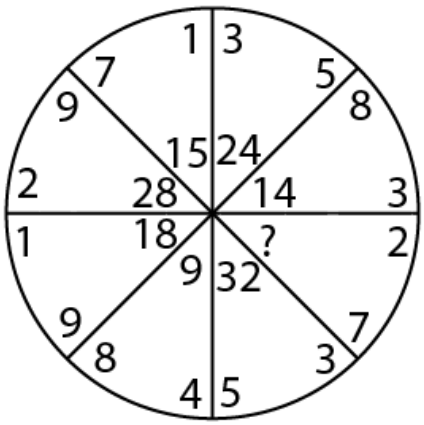
Similarly, $8^2 - 4 = 8 - 4 = 4$

=> Ans - (A)

Instructions

In each of the following questions, select the missing number from the given responses.

Question 186



A 20

B 25

C 10

D 15

Answer: D

Explanation:
The product of 2 numbers in a sector is equal to the central number in the previous sector.

$3 \times 5 = 15, 8 \times 3 = 24$

$2 \times 7 = 14$

Similarly, $5 \times 3 = 15$

=> Ans - (D)

Question 187

10	11	15
12	12	8
4	12	10
10	5	13
18	20	?

A 21

B 20

C 23

D 22

Answer: C

Explanation:
In each column, the number at the end is obtained by adding the other 4 numbers and dividing the result by 2.

Eg = $\frac{10+12+4+10}{2} = \frac{36}{2} = 18$

and $\frac{11+12+12+5}{2} = \frac{40}{2} = 20$

Similarly, $\frac{15+8+10+13}{2} = \frac{46}{2} = 23$

=> Ans - (C)

General Science Notes for SSC CGL

Instructions
For the following questions answer them individually

Question 188

Four aeroplanes of Airforce viz, A,B,C,D, started for a demonstration flight towards east. After flying 50 km planes A and D flew towards right, planes B and C flew towards left. After 50 km, planes B and C flew towards their left, planes A and D also towards their left. In which directions are the aeroplanes A. B, D, C respectively flying now ?

A North, South, East, West

B South, North, West, East

C East, West, West, East

D West, East, West, East

Answer: C

Explanation:
For A and D: first in East then right towards South then towards their left to East.
For Band C: first East then left towards North then again left towards West.
hence the directions of flight for A,B,C,D are East, West, West, East respectively.
therefore the correct answer is option C.

Question 189

Satish start from A and walks 2 km east upto B and turns southwards and walks 1 km upto C. At C he turns to east and walks 2 km upto D. He then turns northwards and walks 4 km to E. How far is he from his starting point ?

A 5 km

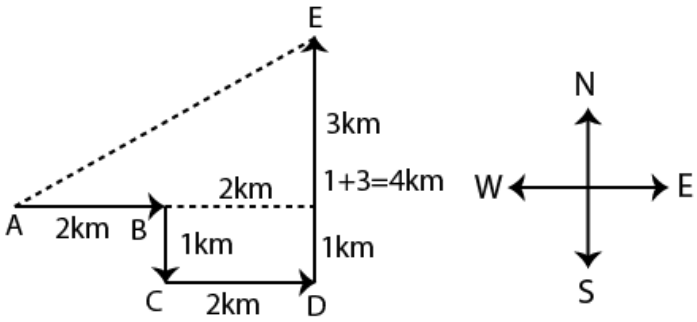
B 6 km

C 3 km

D 4 km

Answer: A

Explanation:
the above mentioned route can be traced as follows :



$AE = \sqrt{4^2 + 3^2} = 5km$

the distance between A and E that is the start and the finish points will can be found out using the Pythagoras theorem.

$\sqrt{3^2 + 4^2} = 5$

hence the correct answer is option A.

Instructions

In each of the following questions, one/two statements are given, followed by two conclusions I and IL You have to consider the statements to be true, even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any follow from the given statement.

Question 190

Statements :
Temple is a place of worship.
Church is also a place of worship.
Conclusions :
I. Hindus and Christians use the same place for worship.
II. All churches are temples.

A Neither conclusion I nor II follows

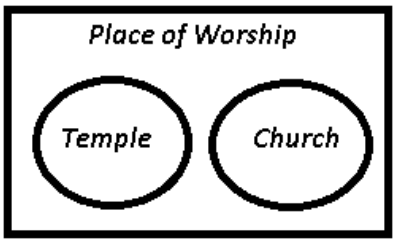
B Both conclusions I and II follow

C Only conclusion I follows

D Only conclusion II follows

Answer: A

Explanation:
The venn diagram for above statements is :



Conclusions :
I. Hindus and Christians use the same place for worship = false
II. All churches are temples = false

Thus, neither conclusion I nor II follows

=> Ans - (A)

Question 191

Statement :
The human organism grows and develops through stimulation and action.
Conclusions :
I. Inert human organism cannot grow and develop.
II. Human organisms do not react to stimulation and action.

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: A

Explanation:
Growth and development of human organism is a continuous process. Some changes take place in human body now and then.

Thus, neither conclusion I nor II follows

=> Ans - (A)

Instructions
For the following questions answer them individually

Question 192

If the first four letters of a term HIPPNOWADIASM are written in reverse order, the next five letters are written without changing their order and then, the remaining letters are again written in reverse order, then which letter is in the middle of the word ?

A 0

B W

C A

D I

Answer: B

Explanation:
step 0: HIPPNOWADIASM
step 1: PIHHNOWADIASM
step 2: PIHHNOWADSMAI.
hence we can see that the middle letter is W hence the answer is option **B.**

Question 193

In the following letter series how many times do PQR occur in such away that Q is in the middle of P and R.
QMPNPQRROPQNOPPQRP MQROPQRPPRRPQRP

A 5

B 6

C 4

D 3

Answer: C

Explanation:

QMPNP**Q**RROPQNOPP**Q**RP MQROP**Q**RPPRRP**Q**RP. The required condition is satisfied by letters in bold. hence the answer is option C.

Question 194

Volume of a sphere is equal to the volume of a hemisphere. If the radius of the hemisphere is 3 $\sqrt[3]{2}$ cm, then the radius of the sphere is equal to

A 9 3 √2 cm

B 6 3 √2 cm

C 27 cm

D 3 cm

Answer: D

Explanation:

Let the radius of sphere be r

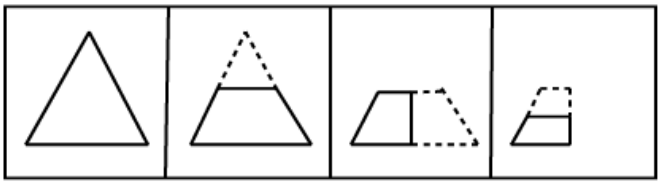
Volume of sphere = Volume of hemisphere

=> $\frac{4}{3}\pi r^3 = \frac{2}{3}\pi(3\sqrt[3]{2})^3$

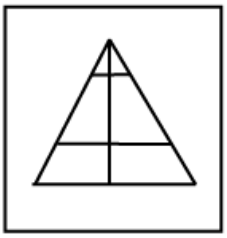
=> $2r^3 = 54$

=> $r = \sqrt[3]{27} = 3$ cm

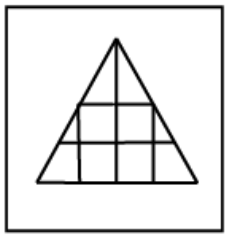
Question 195



A

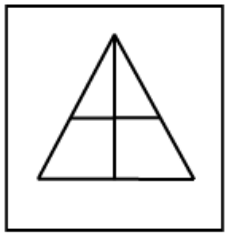


B



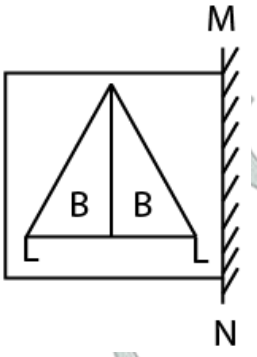
C

D

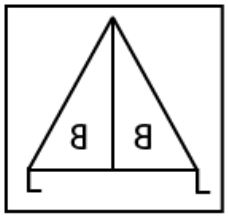


Answer: B

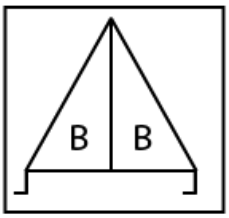
Question 196



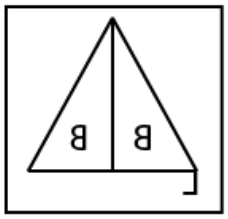
A



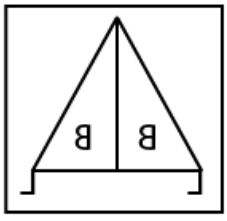
B



C



D



Answer: D

Explanation:

A triangle in the mirror image will not change.

In the original figure, there is a pair of 'B' inside the triangle which will be reversed in the mirror.

=> (B) is eliminated.

There is also a pair of 'L' which are also reversed in the mirror image.

=> (A) & (C) are also eiminated.

Ans - (D)

Question 197

If SEARCH is coded as TFBSDI, how will PENCIL be coded?

A RGPEN

B LICNEP

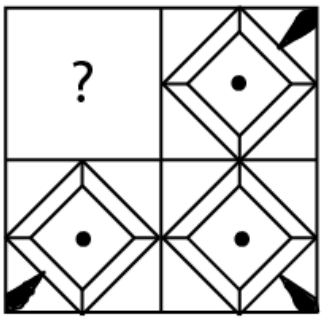
C QFODJM

D QDMBHK

Answer: C

Explanation:
If SEARCH is coded as TFBSDI, then we can infer the pattern to be each letter being represented by the letter that succeeds it immediately in the Alphabet. Similarly, we can code PENCIL as QFODJM, which is option C.

Question 198



A


B


C


D


Answer: B

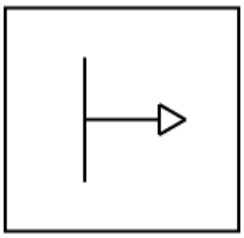
Explanation:
To complete the above figure, we need to squares, one within the other in vertical positions

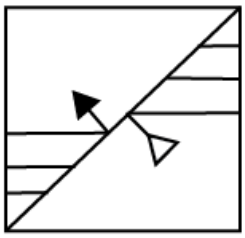
The squares should also be connected by a single vertical line at the corners.

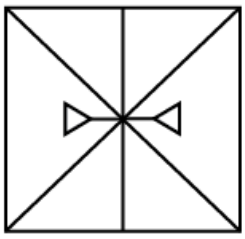
Clearly the above arrangement is given only in option (B)

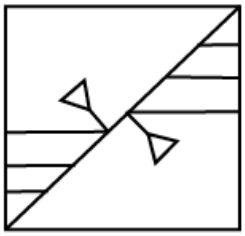
Ans - (B)

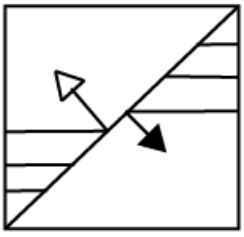
Question 199



A 

B 

C 

D 

Answer: D

Question 200

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. Identify the set for the word 'GUIDE'.

Matrix I

	0	1	2	3	4
0	I	E	A	O	U
1	A	O	U	I	E
2	E	I	O	U	A
3	O	U	E	A	I
4	U	A	I	E	O

Matrix II

	5	6	7	8	9
5	F	D	B	G	H
6	B	G	H	F	D
7	D	F	G	H	B
8	G	H	D	B	F
9	H	B	F	G	D

A 85, 23, 21, 87, 32

B 58, 31, 12, 57, 41

C 77, 13, 42, 99, 32

D 66, 31, 43, 78, 14

Answer: A

Explanation:

(A) - 85, 23, 21, 87, 32 = **GUIDE**

(B) - 58, 31, 12, 57, 41 = GUUBA

(C) - 77, 13, 42, 99, 32 = GIIDE

(D) - 66, 31, 43, 78, 14 = GUEHE

=> Ans - (A)