



SSC CGL 2013 Tier 1 21 April Shift 2

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General Awareness

Instructions

For the following questions answer them individually

Question 1

The principle of maximum social advantage is the basic principle of

- A Micro Economics
- B Macro Economics
- C Fiscal Economics
- D Environmental Economics

Answer: C

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Question 2

Which Five Year Plan is not correct among the following ?

- A First 1951-56
- B Second 1956-61
- C Third 1961-66
- D Fourth 1966-71

Answer: D

Question 3

The ordinary and maximum tolerance limit of sound by human being is

- A 50 db to 70 db (decibel)
- B 60 db to 80 db (decibel)
- C 65 db to 75 db (decibel)
- D 70 db to 85 db (decibel)

Answer: B

Question 4

An economic theory is a/an

- A Axton
- B Proposition
- C Hypothesis
- D Tested hypothesis

Answer: B

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Question 5

Indian Special Economic Rules amendment came in the year

- A 2000
- B 2002
- C 2004
- D 2006

Answer: D

Question 6

Provisions of citizenship in Indian Constitution, became applicable in

- A 1950
- B 1949
- C 1951
- D 1952

Answer: A

Question 7

Who gave the title of "Sardar" to Vallabh Bhai Patel ?

- A Mahatma Gandhi
- B Vinoba Bhave
- C Women of Bardoli
- D Peasants of Gujrat

Answer: A

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Question 8

According to Marx, the source of value is

- A Capital
- B Land
- C Labour
- D None of the above

Answer: C

Question 9

The National Emergency in India declared by the President of India due to the external aggression or armed revolt through

- A Article-352
- B Article-356
- C Article-360
- D Article-368

Answer: A

Question 10

The Community Development Programme was launched in the year

- A 1950
- B 1952
- C 1951
- D 1953

Answer: B

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Question 11

What Satyagraha was held at Nagpur in 1923?

- A Salt Satyagraha
- B Individual Satyagraha
- C Ryots Satyagraha
- D Flag Satyagraha

Answer: D

Question 12

Which one of the following is not a sect of Buddhism ?

- A Mahayana
- B Hinayana
- C Digambar
- D Theravad

Answer: C

Question 13

Who was the viceroy when Delhi became the capital of British India ?

- A Load Curzon
- B Lord Minto
- C Lord Hardinge
- D Lord Waveli

Answer: C

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Question 14

Who established the Indian Civil Liberties Union in 1936 ?

- A Subhash Chandra Bose
- B Bal Gangadhar Tilak
- C Jawahar Lal Nehru
- D Rajendra Prasad

Answer: C

Question 15

Which of the following was established first ?

- A Banaras Hindu University
- B University of Bombay
- C Aligarh Muslim University
- D University of Allahabad

Answer: B

Question 16

"Yosemite" is a

- A River
- B Peak
- C Waterfall
- D Dam

Answer: C

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Question 17

The first Indian Satellite Aryabhata was launched in

- A 1972
- B 1975
- C 1977
- D 1979

Answer: B

Question 18

Where is the shore based steel plant located?

- A Tuticorin
- B Salem
- C Vishakhapatnam
- D Mangalore

Answer: C

Question 19

Which two of the following are connected by the North South corridor ?

- A Srinagar and Kanyakumari
- B Mumbai and Chennai
- C Amritsar and Kolkata
- D Hyderabad and Bhopal

Answer: A

General Science Notes for SSC CGL

Question 20

The pollutants which move downward with percolating ground water are called

- A Leachates
- B Pollutates
- C Earthites
- D Percolates

Answer: A

Question 21

Lungs are located in the

- A abdominal cavity
- B pericardial cavity

C peritoneal cavity

D pleural cavity

Answer: D

Question 22

Which one of the following is the ideal food for newborn babies ?

A Water

B Sugar

C Honey

D Milk

Answer: D

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Question 23

Transcription means the synthesis of

A Lipids

B Protein

C DNA

D RNA

Answer: C

Question 24

Hydrochloric acid is secreted by the cells lining the

A Oral cavity

B Stomach

C Ileum

D Colon

Answer: B

Question 25

Emulsification is

A breaking fats into small globules

B digestion of fats

C absorption of fats

D storage of fats

Answer: A

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Question 26

Taxonomy is a science that deals with

- A Morphology
- B Anatomy
- C Classification
- D Economic uses

Answer: C

Question 27

Which one of the following is responsible for the working of Newton's colour disc experiment ?

- A Formation of pure spectra
- B Formation of impure spectra
- C Persistence of vision
- D Principle of complementary colour

Answer: C

Question 28

The dimension MLT corresponds to

- A force
- B work done
- C acceleration
- D velocity

Answer: A

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Question 29

Who is the founder of quantum theory of radiation ?

- A Einstein
- B Bohr
- C Plank
- D S. N. Bose

Answer: C

Question 30

Fiber optics cable used in communication, works on the principle of

- A regular reflection of light
- B diffuse reflection of light
- C refraction of light
- D total internal reflection of light

Answer: D

Question 31

Which was the first electronic computer constructed at the Moore School of Engineering ?

- A EO VAC
- B ONIVAC
- C ENIAC
- D EDSAC

Answer: C

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Question 32

Which among the following standard protocols is the most widely used by the Internet ?

- A HTIP
- B TCP/IP
- C SMTP
- D SLIP

Answer: B

Question 33

The outer skin most of the crustaceans are made up of a carbohydrate. This carbohydrate is

- A cellulose-2
- B galactose
- C chitin
- D starch

Answer: C

Question 34

Rutherford's scattering experiment proved the presence of

- A atoms in all matter
- B electrons in atoms
- C neutrons in atoms
- D nucleus in atoms

Answer: D

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Question 35

When a metal is heated in a flame, the electrons absorb energy and jump to higher energy state. On coming back to the lower energy state, they emit light, which we can observe in

- A Raman spectra
- B Absorption spectra
- C Emission spectra
- D Fluorescence

Answer: C

Question 36

Blood pressure may be increased by the excessive secretion of

- A Thyroxine
- B Testosterone
- C Estradiol
- D Estrol

Answer: A

Question 37

The concept of "Green House Gases" was postulated by

- A Joseph Fourier
- B Abdul Kalam
- C M. S. Swaminathan
- D Richard Carlson

Answer: A

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Question 38

"Bhopal gas tragedy" 1984 is related to

- A Aluminium Phosphide
- B Methyl bromide
- C Methyl isocyanate
- D Carbon dioxide

Answer: C

Question 39

The Particulate Matter (PM-10) exhaled from the polluted atmosphere is often filtered out during the process of

- A Coughing
- B Sneezing
- C A and B
- D Urination

Answer: B

Question 40

Sarus crane is the state bird of

- A Rajasthan
- B Uttar Pradesh
- C Madhya Pradesh
- D West Bengal

Answer: B

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Question 41

The Tongarlo volcano erupted on November 21, 2012 is in

- A Australia
- B Indonesia
- C Papua New Guinea
- D New Zealand

Answer: D

Question 42

The Daocheng Yading Airport is located in

- A Thailand
- B Philippines

C China

D Tibet

Answer: D

Question 43

BCCI named the "Indian Cricketer of the year 2011-12" to honour

A Sunil Gavaskar

B VVS Laxman

C Virat Kohli

D Yuvaraj

Answer: C

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Question 44

"Martyr's Day" is marked on

A January 1

B January 15

C January 30

D January 9

Answer: C

Question 45

Who won the World Carrom Championship 2012 ?

A Rashmi Kumari

B Mirabai Chanu

C Nishantha Fernando

D Nuthaki Priyanka

Answer: C

Question 46

The animal who can consume more salt among the following is

A Sheep

B Camel

C Donkey

D Dog

Answer: B

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Question 47

Which of the following is only domestic Airport ?

- A Dabolin Airport, Goa
- B Srinagar Airport
- C Devi Ahilyabai Holkar Airport
- D None of the above

Answer: D

Question 48

Tick the correct option with regards to the contribution towards GDP (Gross Domestic Product) from Agriculture

- A During 1950-51 (GDP 51-88%) and 2011-12 (GDP 1401%)
- B During 1950-51 (GDP 11 - 00%) and 2011-12 (GDP 25%)
- C During 1990-91 (GDP 29-53%) and 2011-12 (GDP 6677%)
- D During 1980-81 (GDP 35-69%) and 2011-12 (GDP 20-69%)

Answer: A

Question 49

Second India-Africa Forum Summit-2011 was held in

- A Eretrea
- B Ethiopia
- C Sudan
- D Nigeria

Answer: B

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Question 50

Where did Aurangzeb die ?

- A Pune
- B Aurangabad
- C Ahmad Nasar
- D Mumbai

Answer: C

Explanation:
ENGLISH COMPREHENSION

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English

Instructions

In the following questions, some of the sentences have errors and some have none. Find out which part of a sentence has an error. The number of that part is your answer. If there is no error, your answer is d: i.e., No error.

Question 51

In India a/ working woman lead a life 9f dual responsibilities b/if they are married and have a family. c/No error d

- A In India
- B working woman lead a life 9f dual responsibilities
- C if they are married and have a family.
- D No error

Answer: B

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Question 52

Greatly to our surprise a/ we find the ringleader b/was lame. c/ No error d

- A Greatly to our surprise
- B we find the ringleader
- C was lame
- D No error

Answer: A

Question 53

They have a/ played a game b/ last week. c/ No error d

- A They have a
- B played a game
- C last week
- D No error

Answer: A

Question 54

The teacher made the boys a/ to do the sum b/ all over again. c/ No error d

- A The teacher made the boys
- B to do the sum
- C all over again
- D No error

Answer: B

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Question 55

Many overseas students a/ attend colleges b/ in the Great Britain. c/ No error d

- A Many overseas students
- B attend colleges
- C in the Great Britain
- D No error

Answer: C

Instructions

In the following questions, each sentence is given with blank to be filled in with an appropriate and suitable word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four alternatives.

Question 56

Student-parking should be.....; students should not be charged to buy parking stickers.

- A fined
- B free
- C costly
- D cheap

Answer: B

Question 57

If you have roses growing in your garden, you can make a lovely..... of flowers at home.

- A bouqutte
- B bucquete
- C bouquete
- D bouquet

Answer: D

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Question 58

The..... of the middle school is a woman of..... .

- A Principles, Principal
- B Principals, Principal
- C Principal, Principle
- D Principle, Principals

Answer: C

Question 59

With the changing times, most of the students have become business, like they are and want to take only those courses which they find rewarding.

- A idealistic
- B pragmatic
- C enthusiastic
- D partial

Answer: B

Question 60

1. John's at..... institute studying French.
- 2:They're building..... school at the end of our street.
- 3:Do they live in United Kingdom or somewhere else ?

- A a, the, an
- B the, a, an
- C an, a, the
- D the, an, a

Answer: C

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.

Question 61

Parsimony

- A expenditure
- B bankruptcy

- C bribery
- D miserliness

Answer: D

Question 62

Tribulation

- A palpitation
- B suffering
- C weakness
- D stimulation

Answer: B

Question 63

The Prime Minister goes on the ramparts of the Red Fort to hoist the National flag.

- A ropeway
- B staircase
- C parapet
- D scaffold

Answer: C

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Instructions

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

Question 64

Lunacy

- A sanity
- B stupidity
- C sensibility
- D insanity

Answer: A

Question 65

Obtuse

- A sharp-witted
- B transparent
- C timid

D blunt

Answer: A

Question 66

Inadvertently

A secretly

B accidentally

C completely

D deliberately

Answer: D

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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.

Question 67

What egged you on to become a social worker ?

A urged

B dampened

C hindered

D discouraged

Answer: A

Question 68

Many politicians in India are not fit to hold a candle to Mahatma Gandhi.

A superior

B equal

C inferior

D indifferent

Answer: C

Question 69

She must be paying through the nose for the face left.

A paying less than necessary

B paying too much

C paying the right amount

D paying reluctantly

Answer: B

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Question 70

He is **putting the cart before the horse** by purchasing furniture before buying a house.

A doing a thing in the wrong way

B doing a thing in the right way

C committing a great crime

D doing things meticulously

Answer: A

Question 71

Casting pearls before swine.

A speaking nice words and convincing them

B offering good things to undeserving people

C uplifting the needy for their welfare

D doing worthwhile things to unknown people

Answer: B

Instructions

In the following questions, a sentence/ part of the sentence is printed in bold. Below are given alternatives to the bold sentence/part of the sentence 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 72

It became clear that the strangers were heading into a serious disaster.

A along

B towards

C on

D No improvement

Answer: B

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Question 73

Twenty kms are not a great distance in these days of fast moving vehicles.

A is not a great distance

- B are not too great a distance
- C aren't proving a great distance
- D No improvement

Answer: A

Question 74

I adapted a new method to solve the problem.

- A I have been adopted
- B I adopted
- C I was adapted
- D No improvement

Answer: B

Question 75

Hoping not to be disturbed, I sat down in my easy chair to read the book, I won as a prize.

- A I had won as a prize
- B I have won as prize
- C I had to win as a prize
- D No improvement

Answer: A

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Question 76

If you are living near a market place you should be ready to bear the disturbances caused by traffic.

- A to bear upon
- B to bear with
- C to bear away
- D No improvement

Answer: B

Question 77

The more they earn, more they spend on luxury items.

- A more they should spend
- B the more they spend

C the more they ought to spend

D No improvement

Answer: B

Question 78

You have come here with a view to insult me.

A to insulting me

B of insulting me

C for insulting me

D No improvement

Answer: A

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Question 79

A little rail-road engine was employed by a station yard for doing small pieces of work.

A was made by a station yard

B was used at the station yard

C was employed at the station Yard

D No improvement

Answer: C

Question 80

From an aesthetic point of view, the painting did not appeal to me.

A From the viewpoint of aesthetics, the painting did not appeal to me

B The painting had no aesthetic appeal to me

C From an aesthetic point of view, the painting had a little appeal to me

D No improvement

Answer: D

Question 81

The child tossed in bed burning with fever.

A The child in bed, burning with fever tossed

B The child burning with fever, tossed in bed

C The child burning in bed tossed with fever

D No improvement

Answer: B

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Instructions

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

Question 82

An apartment building in which each apartment is owned separately by the people living in it, but also containing shared areas.

- A condominium
- B multiplex
- C duplex
- D caravan

Answer: A

Question 83

A group of three powerful people.

- A trio
- B tritium
- C trivet
- D triumvirate

Answer: D

Question 84

Operation of the body after death.

- A post-mortem
- B obituary
- C homage
- D mortuary

Answer: A

Question 85

Not allowing the passage of light.

- A oblique
- B opaque

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C optique

D opulant

Answer: B

Question 86

Science regarding principles of classification.

A taxidermy

B taxonomy

C toxicology

D classicology

Answer: B

Question 87

A political leader appealing to popular desires and prejudices.

A dictator

B tyrant

C popularist

D demagogue

Answer: D

Question 88

Enclosed in a small closed space.

A closophobia

B clusterophobia

C claustrophobia

D liftophobia

Answer: C

Instructions

In the following questions, four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word as your answer.

Question 89

A conivance

B connavance

C connivance

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D conivence

Answer: C

Question 90

A maintenncance

B manteinance

C maintenance

D mentenance

Answer: C

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Instructions

In the following questions, you have a passage with 10 questions. Read the passage carefully and choose the best answer to each question out of the four alternatives.

The cyber -world is ultimately ungovernable. This is alarming as well as convenient; sometimes, convenient because alarming. Some Indian politicians use this to great advantage. When there is an obvious failure in governance during a crisis they deflect attention from their own incompetence towards the ungovernable. So, having failed to prevent nervous citizens from fleeing their cities of work by assuring of proper protection, some national leaders are now busy trying to prove to one another, and to panic-prone Indians, that a mischievous neighbour has been using the Internet and social networking sites to spread dangerous rumours. And the Centre's automatic reaction is to start blocking these sites and begin elaborate and potentially endless negotiations with Google, Twitter and Facebook about access to information. If this is the official idea of prompt action at a time of crisis among communities, then Indians have more reason to fear their protectors than the nebulous mischief-makers of the cyber -world. Wasting time gathering proof. blocking vaguely suspicious websites, hurling accusations across the border and worrying about bilateral relations are ways of keeping busy with inessentials because one does not quite know what to do about the essentials of a difficult situation. Besides, only a fifth of the 245 websites blocked by the Centre mention the people of the Northeast or the violence in Assam. And if a few morphed images and spurious texts can unsettle an entire nation, then there is something deeply wrong with the nation and with how it is being governed. This is what its leaders should be addressing immediately, rather than making a wrongheaded display of their powers of censorship.

It is just as absurd, and part of the same syndrome to try to ban Twitter accounts that parody dispatches from the Prime Minister's Office. To describe such forms of humour and dissent as "misrepresenting" the PMO – as if Twitterers would take these parodies for genuine dispatches from the PMO makes the PMO look more ridiculous than its parodists manage to. With the precedent for such action set recently by the chief minister of West Bengal, this is yet another proof that what Bengal thinks to day India will think tomorrow. Using the cyber -world for flexing the wrong muscles is essentially not funny. It might even prove to be quite dangerously Distracting.

Question 91

According to the passage, the cyber-world is

A beyond the imagination of people

B outside the purview of common people

C not to be governed

D ungovernable

Answer: D

Question 92

The author is of the opinion that

- A the centre should start negotiations with Google, Twitter and Facebook
- B the centre should help the citizens evacuate their city
- C the centre should not block the sites
- D the centre should arrest the guilty

Answer: C

Question 93

Which of the following is closest to the meaning of 'nebulous'?

- A confused
- B vague
- C iridescent
- D glowing

Answer: B

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Question 94

The author's seriousness regarding the situation can best be described in the following sentences. Pick the odd one out.

- A Our leaders should display their powers of censorship when needed
- B If this is the official idea of prompt action at a time of crisis among communities, then Indians have more reason to fear their protectors than the nebulous mischiefmaker of the cyberworld
- C The politicians deflect attention from their own incompetence
- D If a few morphed images and spurious texts can unsettle an entire nation, then there is something deeply wrong with the nation

Answer: A

Question 95

The word 'spurious' means

- A genuine
- B authentic
- C substantial
- D fake

Answer: D

Question 96

The author warns us against

- A not playing false with the citizens
- B dangers inherent in the cyber-world
- C not using the cyber-world judiciously
- D not protecting the citizens from dangerous politicians

Answer: A

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Question 97

'Parody means

- A twist
- B jeopardize
- C ridicule
- D imitate

Answer: D

Question 98

What is the opposite of 'wrong headed' ?

- A silly
- B sane
- C insane
- D insensible

Answer: B

Question 99

The passage suggests different ways of keeping the public busy with 'inessentials'. Pick the odd one out.

- A By blocking websites which are vaguely suspicious
- B By blaming neighbouring countries across the border
- C By turning the attention of the people to violence in Assam
- D By getting involved in a discourse on bilateral relations

Answer: C

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Question 100

The following is a list of statements made by the author of the above passage. Pick the odd one out.

- A It is absurd to ban Twitter accounts that parody despatches from the Prime Minister's Office
- B 'Tweeters take these parodies for genuine despatches from the PMO
- C To describe such forms of humour as 'misrepresenting' the PMO makes the PMO look more ridiculous
- D The precedent for such action was set recently by the chief minister of West Bengal

Answer: B

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Quant

Instructions

For the following questions answer them individually

Question 101

The difference of a number consisting of two digits from the number formed by interchanging the digits is always divisible by

- A 10
- B 9
- C 11
- D 6

Answer: B

Explanation:

let the digits of the no. be X and Y

number = $10x+y$

reverse of no. = $10y+x$

now $(10x+y) - (10y+x) = 9x-9y = 9(x-y)$

as shown above that 9 will always be the factor, irrespective of the difference and the number

so it can be concluded that the resulting number will always be divisible by 9

General Science Notes for SSC CGL

Question 102

The number 323 has

- A three prime factors
- B five prime factors
- C two prime factors

D no prime factor

Answer: C

Explanation:

The number 323 can be written as :

$$323 = 17 * 19$$

where, both 17 and 19 are prime numbers.

Thus, 323 has 2 prime factors.

Question 103

A tyre has 2 punctures. The first puncture alone would have made the tyre flat in 9 minutes and the second alone would have done it in 6 minutes. If air leaks out at a constant rate, how long does it take both the punctures together to make it flat ?

A $1\frac{1}{2}$ minutes

B $3\frac{1}{2}$ minutes

C $3\frac{3}{5}$ minutes

D $4\frac{1}{4}$ minutes

Answer: C

Explanation:

Let assume that flattening a tyre is equivalent to work of 18 units (which is LCM of 9,6)

Time taken by 1st puncture to made a tyre flat = 9 minutes

In 1 minute, 1st puncture releases = 2 units of air

Time taken by 2nd puncture to made a tyre flat = 6 minutes

In 1 minute, 2nd puncture releases = 3 units of air

If both punctures happen together then in 1 minute amount of air released from tyre = 2 + 3 = 5 units

then time taken by both tyres to release the air = $\frac{18}{5} = 3\frac{3}{5}$ minutes

Question 104

If 8 men or 12 boys can do a piece of work in 16 days, the number of days required to complete the work by 20 men and 6 boys is

A $5\frac{1}{3}$

B $6\frac{1}{3}$

C $8\frac{1}{3}$

D $7\frac{1}{3}$

Answer: A

Explanation:

Let assume the amount of work be 48 units (which is LCM of 8,12,16)

It is given that 8 men can do 48 units of work in = 16 days

then 1 men's 1 day work = $\frac{3}{8}$ units

20 men's 1 day work = $20 \times \frac{3}{8} = 7.5$ units

Now it is also given that 12 boys do the same amount of work of 48 units in = 16 days

so, 1 boy's 1 day work = $\frac{1}{4}$ units

6 boy's 1 day work = $\frac{3}{2}$ units = 1.5 units

Now, (20 men + 6 boy) 's 1 day work = $7.5 + 1.5 = 9$ units

So, number of days required by (20 men + 6 boy) to complete 48 units of work = $\frac{48}{9} = 5\frac{1}{3}$ days

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Question 105

A and B together can do a piece of work in 12 days which B and C together can do in 16 days. After A has been working at it for 5 days and B for 7 days, C finishes it in 13 days. In how many days B could finish the work ?

- A 48 days
- B 24 days
- C 16 days
- D 12 days

Answer: A

Explanation:

Let us assume the total work to be done as 48 units.

Let the capacities of A be a, B be b and C be c.

$$12(a+b) = 48 \Rightarrow a+b = 4 \text{ -----(1)}$$

$$16(b+c) = 48 \Rightarrow b+c = 3 \text{ -----(2)}$$

$$5a+7b+13c = 48 \text{ (Given in the question). -----(3)}$$

$$(1) \times 5 + (2) \times 13 \Rightarrow 5a + 5b + 13b + 13c = 20+39$$

$$5a+18b+13c = 59 \text{ -----(4)}$$

$$(4) - (3) \Rightarrow 11b = 11$$

$$b = 1$$

Therefore, b can complete the work in 48 days. Option A is the right answer.

Question 106

Three circles of radius a, b, c touch each other externally. The area of the triangle formed by joining their centres is

A $\sqrt{(a+b+c)abc}$

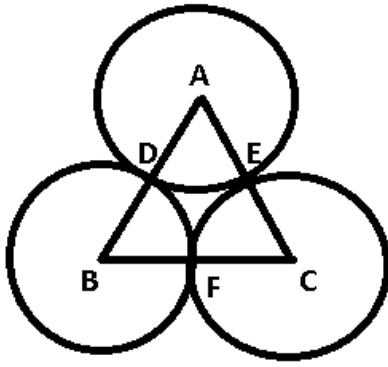
B $(a+b+c)\sqrt{ab+bc+ca}$

C $ab+bc+ca$

D None of the above

Answer: A

Explanation:



Let sides of triangle be x, y, z

$$\Rightarrow x = AB = a+b$$

$$y = BC = b+c$$

$$z = CA = a+c$$

$$\text{Thus, semi perimeter}(s) = \frac{AB+BC+CA}{2} = a+b+c$$

$$\begin{aligned} \text{Area of } \triangle ABC &= \sqrt{s(s-a)(s-b)(s-c)} \\ &= \sqrt{(a+b+c)abc} \end{aligned}$$

Question 107

If a metallic cone of radius 30 cm and height 45 cm is melted and recast into metallic spheres of radius 5 cm, find the number of spheres.

- A 81
- B 41
- C 80
- D 40

Answer: A

Explanation:

$$\text{Volume of metallic cone} = \frac{1}{3} \pi r^2 h$$

$$= \frac{1}{3} \pi * 30^2 * 45 = 13500\pi \text{ cm}^3$$

$$\text{Volume of sphere} = \frac{4}{3} \pi R^3$$

$$= \frac{4}{3} \pi * 5^3 = \frac{500\pi}{3} \text{ cm}^3$$

$$\Rightarrow \text{Required no. of spheres} = \frac{13500\pi}{\frac{500\pi}{3}}$$

$$= 81$$

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Question 108

Chords AB and CD of a circle intersect at E and are perpendicular to each other. Segments AE, EB and ED are of lengths 2 cm, 6 cm and 3 cm respectively. Then the length of the diameter of the circle in cm is

- A $\sqrt{65}$

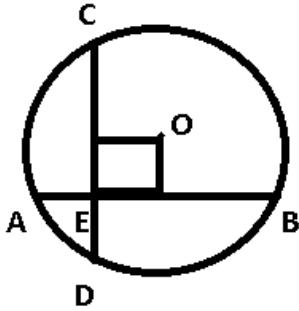
B $\frac{1}{2}\sqrt{65}$

C 65

D $\frac{65}{2}$

Answer: A

Explanation:



AE = 2 cm

EB = 6 cm

ED = 3 cm

=> AE * EB = DE * EC

=> EC = $\frac{2 \cdot 6}{3} = 4$ cm

=> Diameter = $\sqrt{7^2 + 4^2} = \sqrt{49 + 16}$

= $\sqrt{65}$ cm

Question 109

For every set of 19 kites sold, a vendor gives 1 kite extra, free of cost. In order to give a discount of 10%, the number of extra kites he should give in a sale of 27 kites to the nearest integer is

A 3

B 6

C 7

D 8

Answer: A

Explanation:

Kites of Rs. 20 are available for Rs. 19

=> Discount = $\frac{20-19}{20} * 100 = 5\%$

Similarly, if someone gets kites of Rs. 20 for Rs. 18

discount will be = $\frac{20-18}{20} * 100 = 10\%$

∴ Required answer = $\frac{2}{20} * 27 = 2.7$

= ~3

Question 110

A ruby stone was bought for Rs. 1600 at Jaipur. A sum of Rs. 2400 was spent on making a ring with the ruby stone. It was advertised for sale at Bombay for Rs. 7800. If a discount of 10% was given, then the % profit made was

- A 55%
- B 68.5%
- C 75.5%
- D 80%

Answer: C

Explanation:

Cost price of ruby stone = 1600

Sum spent additionally on it = 2400

$$\Rightarrow \text{Total cost price} = 1600 + 2400 = 4000$$

Marked price = 7800

$$\text{Discounted amount} = \frac{10}{100} * 7800 = 780$$

$$\Rightarrow \text{Selling price} = 7800 - 780 = 7020$$

$$\text{Profit \%} = \frac{7020 - 4000}{4000} * 100$$

$$= \frac{3020}{4000} = 75.5\%$$

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Question 111

A shopkeeper buys an article for Rs. 450. He marks it at 20% above the cost price. Find the percentage discount given by him if he sells the article for Rs. 496.80.

- A 8%
- B 9%
- C 10%
- D 12%

Answer: A

Explanation:

C.P. = 450

$$\text{He marked it by 20\%} \Rightarrow \frac{20}{100} * 450 = 90$$

$$\text{Marked price} = 450 + 90 = 540$$

S.P. = 496.80

$$\text{Discount \%} = \frac{540 - 496.80}{540} * 100$$

$$= \frac{43.2}{540} * 100 = 8\%$$

Question 112

The area of a circle is proportional to the square of its radius. A small circle of radius 3 cm is drawn within a larger circle of radius 5 cm. Find the ratio of the area of the annular zone to the area of the larger circle. (Area of the annular zone is the difference between the area of the larger circle and that of the smaller circle).

- A 9 : 16
- B 9 : 25

- C 16 : 25
- D 16 : 27

Answer: C

Explanation:

Area of circle = πr^2

Area of annular zone = $\pi(5^2 - 3^2) = 16\pi$ sq. units

Area of larger circle = $\pi * 5^2 = 25\pi$ sq. units

=> Required ratio = 16 : 25

Question 113

A man invested 1/3 of his capital at 7%, 1/4 at 8% and the remainder at 10%. If his annual income is Rs. 561, the capital is

- A Rs. 5400
- B Rs. 6000
- C Rs. 6600
- D Rs. 7200

Answer: C

Explanation:

let the total capital be Rs 12y

capital is invested at 7%, = $\frac{1}{3} \times 12y = 4y$

Capital invested at 8% = $\frac{1}{4} \times 12y = 3y$

Remaining capital = $12y - 7y = 5y$

It is given that remaining capital is invested at 10% per annum

Simple Interest = $\frac{P \times R \times T}{100}$

Now, income in year = $\frac{4y \times 7 \times 1}{100} + \frac{3y \times 8 \times 1}{100} + \frac{5y \times 10 \times 1}{100} = 561$

$1.02y = 561$

$y = \text{Rs } 550$

So principal amount = $12y = 12 \times 550 = \text{Rs } 6600$

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Question 114

The average age of Ram and his two children is 17 years and the average age of Ram's wife and the same children is 16 years. If the age of Ram is 33 years, the age of his wife is (in years):

- A 31
- B 32
- C 35
- D 30

Answer: D

Explanation:

let the present age of Ram , Ram's wife ,and his two children be R ,W,S1,S2 respectively

$$\text{Average} = \frac{\text{Sum of Ages}}{\text{Number of Ages}}$$

Given that average age of Ram and his childrens is =17 years

$$R+S1+S2= 17 \times 3 = 51$$

Given R = 33 years .So, S2+S2 = 51-33 = 18 years

Now given that average age of Rams wife and two children = 16 years

So ,

$$W+S2+S1= 16 \times 3 = 48$$

$$W= 48-18 = 30 \text{ years}$$

Question 115

A man's pension on retirement from service is equal to half the average salary during last 3 years of his service. His salary from 1-1-1983 is Rs. 380 per month with increment of Rs. 40 due on 1-10-83, 1-10-84 and 1-10-85, If he retires on 1-1-86, what pension does he draw ?

- A Rs. 205
- B Rs. 215
- C Rs. 225
- D Rs. 230

Answer: B

Explanation:

annual salary of man for the year 1983 = 380×9 (for first 9 months) + 420×3 (for last 3 months after increment) = $3420 + 1260 = \text{rs } 4680$

similarly,annual salary of man for the year 1984 = $420 \times 9 + 460 \times 3 = \text{rs } 5160$

similarly,annual salary of man for the year 1985 = $460 \times 9 + 500 \times 3 = \text{rs } 5640$

$$\text{avg monthly salary of man for last 3 years} = \frac{4680 + 5160 + 5640}{36} = 430$$

$$\text{pension of the man is} = \frac{430}{2} = 215$$

Question 116

A person bought 76 cows and sold 20 cows at 15% profit, 40 cows at 19% profit and remaining 16 cows at 25% profit and got a profit of Rs. 6570 as a whole. The cost price of each cow is

- A Rs. 450
- B Rs. 425
- C Rs. 420
- D Rs. 400

Answer: A

Explanation:

Let cost price of each cow = $100x$

Profit on first 20 cows = 15%

$$\Rightarrow \text{Profit amount} = \frac{15}{100} * 100x * 20 = 300x$$

Profit on next 40 cows = 19%

$$\Rightarrow \text{Profit amount} = \frac{19}{100} * 100x * 40 = 760x$$

Profit on last 16 cows = 25%

$$\Rightarrow \text{Profit amount} = \frac{25}{100} * 100x * 16 = 400x$$

$$\Rightarrow \text{Total profit} = 300x + 760x + 400x = 6570$$

$$\Rightarrow x = 4.5$$

$$\text{Cost price of each cow} = 4.5 * 100 = 450$$

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Question 117

One pair of parallel of a square is increased by 30%. To maintain the same area, the other pair of parallel side will have to be decreased by

A 23.1%

B 24.1%

C 30

D 15%

Answer: A

Explanation:

Let the side of square be "a" units

$$\text{area of square} = \text{side}^2 = a^2$$

if one pair of the parallel side is increased by 30% it means two sides become "1.3 a" units each

let the other side be b units of a new figure which is rectangle.

$$\text{So, } 1.3 \times a \times b = a^2$$

$$b = 0.769 a$$

So pair of other parallel sides should be reduced by 23.1% to maintain the same area.

Question 118

Ram travelled 1200 km by air which formed $\frac{2}{5}$ of his trip. He travelled one-third of the remaining trip by car and the rest by train. The distance (in km) travelled by train was

A 1200

B 800

C 1600

D 1800

Answer: A

Explanation:

let the trip be of z Km

$$\text{it is given that } \frac{2}{5} z = 1200$$

$$z = 3000 \text{ km}$$

it is mentioned that the person traveled $\frac{1}{3}$ rd of the remaining 1800 km by car and hence after travelling by car the remaining distance = $1800 - 600 = 1200$

Question 119

A policeman goes after a thief who has 100 metres start, if the policeman runs a kilometre in 8 min, and the thief a km in 10 min, the distance covered by thief before he is over-powered is

- A 350 m
- B 400 m
- C 320 m
- D 420 m

Answer: B

Explanation:

given that thief is already 100 m far from police and speed of police is 125 m/min

Speed of thief = 100 m /min

Relative speed of police= 125-100=25 m/min

Using distance = speed x time

$$100 = 25 \times T$$

$$T = 4\text{min}$$

In 4 minutes ,thief can cover = $100 \times 4 = 400$ m

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Question 120

A man borrows Rs. 21000 at 10% compound interest. How much he has to pay equally at the end of each year, to settle his loan in two years ?

- A Rs. 12000
- B Rs. 12100
- C Rs. 12200
- D Rs. 12300

Answer: B

Explanation:

We now that if Rs z is the amount to be paid by a person after n years then the present value of that Rs z is given as = $\frac{z}{(1+\frac{R}{100})^n}$

where R is the Rate of Interest (Compounded Interest Rate)

So let assume that the amount of equal installment be Rs y

and hence we can say that if R = 10% per annum

and Principal Amount = Rs 21000

then present value of 1st installment + present value of 2nd installment = Rs 21000

$$\frac{z}{(1+\frac{10}{100})^1} + \frac{z}{(1+\frac{10}{100})^2} = 21000$$

$$\frac{2.1z}{(1.21)} = 21000$$

$$z = \text{Rs } 12100$$

Question 121

If $\sqrt{\frac{4+3\sqrt{3}}{7+4\sqrt{3}}} = A + \sqrt{B}$, then $B - A$ is

A -13

B $2\sqrt{13}$

C 13

D $3\sqrt{3} - \sqrt{7}$

Answer: C

Explanation:

$$\sqrt{7+4\sqrt{3}} = \sqrt{7+2*2*\sqrt{3}}$$

$$= \sqrt{4+3+2*2*\sqrt{3}} = \sqrt{(2+\sqrt{3})^2}$$

$$= 2 + \sqrt{3}$$

$$\text{Expression: } \frac{4+3\sqrt{3}}{2+\sqrt{3}} = A + \sqrt{B}$$

$$\Rightarrow \frac{4+3\sqrt{3}}{2+\sqrt{3}} \times \frac{2-\sqrt{3}}{2-\sqrt{3}} = A + \sqrt{B}$$

$$\Rightarrow \frac{8-4\sqrt{3}+6\sqrt{3}-9}{4-3} = A + \sqrt{B}$$

$$\Rightarrow 2\sqrt{3} - 1 = A + \sqrt{B}$$

$$\Rightarrow A = -1 \text{ and } \sqrt{B} = 2\sqrt{3}$$

$$\Rightarrow B = (2\sqrt{3})^2 = 12$$

$$\Rightarrow B - A = 12 - (-1) = 13$$

Question 122

$(x + \frac{1}{2})^2 = q^4$ and x is the smallest natural number then the possible values of q are

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

B $\pm \frac{\sqrt{3}}{2}$

C $\pm \frac{2}{\sqrt{3}}$

D $\pm \frac{1}{2}$

Answer: B

Explanation:

x is the smallest natural number, hence $x = 1$.

$$(1 + \frac{1}{2})^2 = q^4$$

$$q = \pm \frac{\sqrt{3}}{2}$$

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Question 123

If $a^2 - 4a - 1 = 0$, then value of $a^2 + \frac{1}{a^2} + 3a - \frac{3}{a}$ is

- A 25
- B 30
- C 35
- D 40

Answer: B

Explanation:

it is given that $a^2 - 4a - 1 = 0$

from this we can say $a - \frac{1}{a} = 4$

we need to find $a^2 + \frac{1}{a^2} + 3a - \frac{3}{a}$

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

$$a^2 + \frac{1}{a^2} + 3a - \frac{3}{a} = 4^2 + 2 + (3 \times 4)$$

$$= 30$$

Question 124

If $x = \sqrt[3]{a + \sqrt{a^2 + b^3}} + \sqrt[3]{a - \sqrt{a^2 + b^3}}$, then $x^3 + 3bx$ is equal to

- A 0
- B a
- C 2a
- D 1

Answer: C

Explanation:

$$\text{Expression : } x = \sqrt[3]{a + \sqrt{a^2 + b^3}} + \sqrt[3]{a - \sqrt{a^2 + b^3}}$$

Cubing both sides, we get:

$$\Rightarrow x^3 = (\sqrt[3]{a + \sqrt{a^2 + b^3}})^3 + (\sqrt[3]{a - \sqrt{a^2 + b^3}})^3 + 3(\sqrt[3]{a + \sqrt{a^2 + b^3}})(\sqrt[3]{a - \sqrt{a^2 + b^3}})[\sqrt[3]{a + \sqrt{a^2 + b^3}} + \sqrt[3]{a - \sqrt{a^2 + b^3}}]$$

$$\Rightarrow x^3 = a + \sqrt{a^2 + b^3} + a - \sqrt{a^2 + b^3} + 3(a^2 - a^2 - b^2)^{\frac{1}{3}}[x]$$

$$\Rightarrow x^3 = 2a + (-3bx)$$

$$\therefore x^3 + 3bx = 2a$$

Question 125

If $x^2 - y^2 = 80$ and $x - y = 8$, then the average of x and y is

- A 2
- B 3
- C 4
- D 5

Answer: D

Explanation:

$$x^2 - y^2 = 80 \text{ and } x - y = 8$$

$$\Rightarrow x + y = \frac{x^2 - y^2}{x - y} = \frac{80}{8}$$

$$= 10$$

$$\therefore \text{Required average} = 10/2 = 5$$

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Question 126

If $3\sqrt[3]{4} + 3\sqrt[3]{2} + 1 = a^{3\sqrt[3]{4}} + b^{3\sqrt[3]{2}} + c$ and a, b, c are rational numbers. then $a + b + c$ is equal to

A 0

B 1

C 2

D 3

Answer: A

Explanation:

$$\text{Expression: } 3\sqrt[3]{4} + 3\sqrt[3]{2} + 1 = a^{3\sqrt[3]{4}} + b^{3\sqrt[3]{2}} + c$$

$$\Rightarrow 2^{\frac{2}{3}} + 2^{\frac{1}{3}} + 1 = a \cdot 2^{\frac{2}{3}} + b \cdot 2^{\frac{1}{3}} + c$$

$$\Rightarrow (2^{\frac{1}{3}} - 1)(2^{\frac{2}{3}} + 2^{\frac{1}{3}} + 1) = a \cdot 2^{\frac{2}{3}} + b \cdot 2^{\frac{1}{3}} + c$$

$$\Rightarrow \frac{2^{\frac{1}{3}} - 1}{2 - 1} = a \cdot 2^{\frac{2}{3}} + b \cdot 2^{\frac{1}{3}} + c$$

$$\Rightarrow \text{Comparing both sides } a = 0, b = 1, c = -1$$

$$\text{To find: } a + b + c$$

$$= 0 + 1 - 1 = 0$$

Question 127

$$1 + 2^{a-b} + 1 + 2^{b-a} \text{ is}$$

A $a - b$

B $b - a$

C 1

D 0

Answer: C

Explanation:

$$\text{Expression: } 1 + 2^{a-b} + 1 + 2^{b-a}$$

$$= 1 + \frac{2^a}{2^b} + \frac{2^b}{2^a}$$

$$= 2^a + 2^b + 2^a + 2^b$$

$$2^a + 2^b = 1$$

Question 128

If $\frac{a}{b} = \frac{4}{5}$ and $\frac{b}{c} = \frac{15}{16}$, then $\frac{18c^2 - 7a^2}{45c^2 + 20a^2}$ is equal to

- A $\frac{1}{3}$
- B $\frac{2}{5}$
- C $\frac{3}{4}$
- D $\frac{1}{4}$

Answer: D

Explanation:

Given that $\frac{a}{b} = \frac{4}{5}$ and $\frac{b}{c} = \frac{15}{16}$

we need to find the value of $= \frac{18c^2 - 7a^2}{45c^2 + 20a^2}$

divide whole equation b^2

We will get ,

$$\frac{18\frac{c^2}{b^2} - 7\frac{a^2}{b^2}}{45\frac{c^2}{b^2} + 20\frac{a^2}{b^2}}$$

$$\frac{18\frac{16^2}{15^2} - 7\frac{4^2}{5^2}}{45\frac{16^2}{15^2} + 20\frac{4^2}{5^2}}$$

$$= \frac{1}{4}$$

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Question 129

Two circles with centres P and Q intersect at B and C. A, D are points on the circles with centres P and Q respectively such that A, C, D are collinear. If $\angle APB = 130^\circ$, and $\angle BQD = x$, then the value of x is

- A 65
- B 130
- C 195
- D 135

Answer: B

Explanation:

Since, A, D are points on the circles with centres P and Q respectively such that A, C, D are collinear, then $\angle APB = \angle BQD$. So, 130 is the answer.

Proof :

Let angle $\angle PAB = z$

=> angle $\angle QAB = 180 - z$

Join QB to a point R on right circle such that A and R are in opposite segments. Now, **AQRB is a cyclic quadrilateral.**

=> angle $\angle QAB + \angle QRB = 180$

=> angle $\angle QRB = z$

Now using the property that angle subtended by an arc on circle is half that subtended at centre, we get angle $\angle BQD = 2z$ which gives angle $\angle BQD = 90 - z$.

Following similar procedure on left circle we get angle PCB=2z and angle BPC= 90-z.

Hence we get angle BQD=angle BPC=90-z

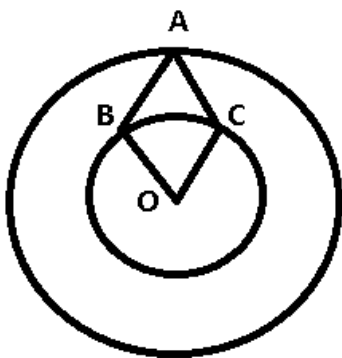
Question 130

C and C are two concentric circles with centres at O. Their radii are 12 cm, and 3 cm, respectively. B and C are the points of contact of two tangents drawn to C2 from a point A lying on the circle C1. Then the area of the quadrilateral ABOC is

- A $\frac{9\sqrt{15}}{2}$ sq.cm
- B $12\sqrt{15}$ sq.cm
- C $9\sqrt{15}$ sq.cm
- D $6\sqrt{15}$ sq.cm

Answer: C

Explanation:



AB = AC = tangents from the same point

OB = OC = 3 and OA = 12

$\angle ABO = 90$

$$\Rightarrow AB = \sqrt{12^2 - 3^2} = 3\sqrt{15}$$

Now, area of $\triangle OAB = \frac{1}{2} OB * AB$

$$= \frac{1}{2} * 3 * 3\sqrt{15} = \frac{9\sqrt{15}}{2}$$

\therefore area of OABC = $9\sqrt{15}$ sq. cm

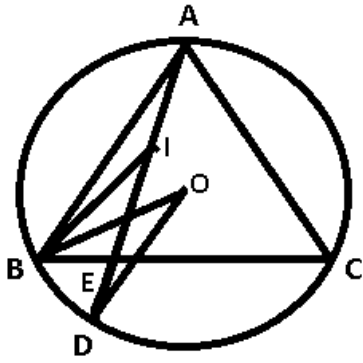
Question 131

I and O are respectively the in-centre and circumcentre of a triangle ABC. The line AI produced intersects the circumcircle of $\triangle ABC$ at the point D. If $\angle ABC = x^\circ$, $\angle BID = y^\circ$ and $\angle BOD = z^\circ$, then $\frac{z+x}{y} =$

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

Answer: C

Explanation:



For circumcentre and its chord BD

$$\angle BAD = \angle BOD/2$$

$$\Rightarrow \angle BAD = z/2$$

In $\triangle ABE$

$$\Rightarrow \angle BEA + \angle EAB + \angle ABE = 180$$

$$\Rightarrow \angle BEA = 180 - z/2 - x$$

Since, BI is angle bisector

$$\Rightarrow \angle IBE = \angle ABE/2$$

$$\Rightarrow \angle IBE = x/2$$

Now, in $\triangle IBE$

$$\Rightarrow \angle IBE + \angle BIE + \angle BEI = 180$$

$$\Rightarrow \frac{x}{2} + (180 - \frac{z}{2} - x) + y = 180$$

$$\Rightarrow y = \frac{x}{2} + \frac{z}{2}$$

$$\Rightarrow \frac{x+z}{y} = 2$$

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Question 132

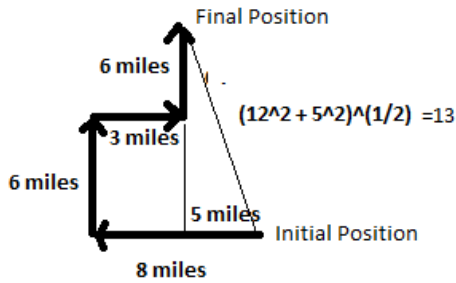
Rana drove 8 miles due west, then 6 miles due north, then 3 miles due east and then 6 more miles due north. The distance between his initial and final position is

- A 13 miles
- B 17 miles
- C 19 miles
- D 21 miles

Answer: A

Explanation:

See the below self explanatory pic of solution :



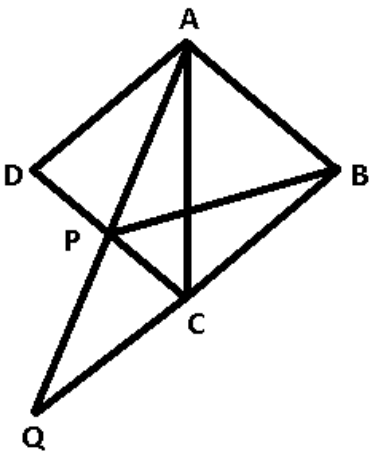
Question 133

ABCD is a parallelogram. BC is produced to Q such that BC = CQ. Then

- A area (ΔBCP) = area (ΔDPQ)
- B area (ΔBCP) > area (ΔDPQ)
- C area (ΔBCP) < area (ΔDPQ)
- D area (ΔBCP) + area (ΔDPQ) = area (ΔBCD)

Answer: A

Explanation:



Join AC

$\therefore \Delta APC$ and ΔBPC lie on the same base CP and between same parallels AB & PC.

$$\Rightarrow \text{ar}(\Delta APC) = \text{ar}(\Delta)BPC$$

Now, AD || CQ and AD = CQ

\Rightarrow ADQC is a parallelogram

Similarly, $\text{ar}(\Delta ADC) = \text{ar}(\Delta ADQ)$

Subtracting $\text{ar}(\Delta ADP)$ from both sides, we get :

$$\Rightarrow \text{ar}(\Delta APC) = \text{ar}(\Delta DPQ)$$

$\therefore \text{ar}(\Delta BPC) = \text{ar}(\Delta DPQ)$

Question 134

In ΔABC and ΔDEF . AB = DE and BC = EF. Then one can infer that $\Delta ABC \cong \Delta DEF$, when

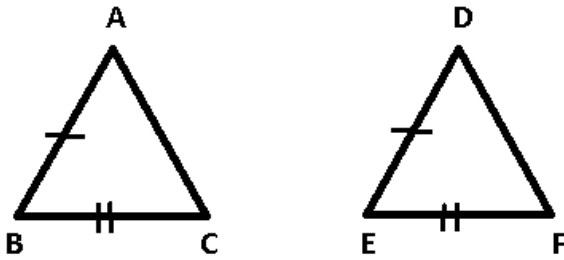
- A $\angle BAC = \angle EDF$
- B $\angle ACB = \angle EDF$

C $\angle ACB = \angle DFE$

D $\angle ABC = \angle DEF$

Answer: D

Explanation:



$AB = DE$ and $BC = EF$

Two triangles are congruent if two sides and included angle of one are equal to the corresponding sides and the included angle of the other triangle. (SAS criterion)

Thus, if $\angle ABC = \angle DEF$

Then, $\triangle ABC \cong \triangle DEF$

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Question 135

The length of the common chord of two circles of radii 30 cm and 40 cm whose centres are 50 cm apart, is (in cm)

A 12

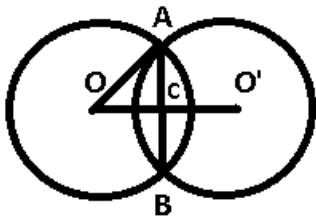
B 24

C 36

D 48

Answer: D

Explanation:



$OA = 30 \text{ cm}$, $O'A = 40 \text{ cm}$, $OO' = 50 \text{ cm}$

Let $OC = x \Rightarrow CO' = 50 - x$

In $\triangle OAC$,

$\Rightarrow AC^2 = OA^2 - OC^2$

$\Rightarrow AC^2 = 30^2 - x^2$

Similarly, In $\triangle O'AC \Rightarrow AC^2 = 40^2 - (50 - x)^2$

$\Rightarrow 30^2 - x^2 = 40^2 - (50 - x)^2$

$$\Rightarrow 900 - x^2 = 1600 - 2500 + 100x - x^2$$

$$\Rightarrow 100x = 1800 \Rightarrow x = 18$$

$$\therefore AC = \sqrt{30^2 - 18^2}$$

$$= \sqrt{48 * 12} = 24$$

$$\Rightarrow AE = 2 * 24 = 48 \text{ cm}$$

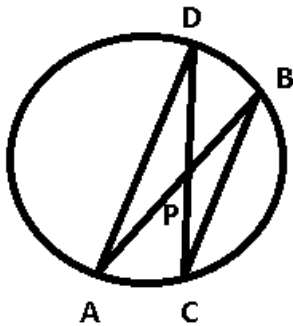
Question 136

Two chords AB, CD of a circle with centre O intersect each other at P. $\angle ADP = 23^\circ$ and $\angle APC = 70^\circ$, then the $\angle BCD$ is

- A 45°
- B 47°
- C 57°
- D 67°

Answer: B

Explanation:



$$\angle APC = \angle DPB = 70^\circ$$

$$\Rightarrow \angle APD = 180^\circ - 70^\circ = 110^\circ = \angle BPC$$

Also, $\angle ADC = \angle ABC = 23^\circ$ [Angles in the same segment]

Now, in $\triangle BPC$

$$\Rightarrow \angle BCD + \angle BPC + \angle PBC = 180^\circ$$

$$\Rightarrow \angle BCD = 180^\circ - 110^\circ - 23^\circ = 47^\circ$$

Question 137

If the interior angles of a five-sided polygon are in the ratio of $2 : 3 : 3 : 5 : 5$, then the measure of the smallest angle is

- A 20°
- B 30°
- C 60°
- D 90°

Answer: C

Explanation:

Let the angles of the pentagon be $2x, 3x, 3x, 5x$ and $5x$

$$\text{Sum of angles of a pentagon} = (n - 2) * 180^\circ$$

$$\Rightarrow 2x + 3x + 3x + 5x + 5x = 540^\circ$$

$$\Rightarrow x = 30^\circ$$

$$\Rightarrow \text{Smallest angle} = 2 \times 30 = 60^\circ$$

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Question 138

If $\sec\theta + \tan\theta = \sqrt{3}$ ($0^\circ \leq \theta \leq 90^\circ$), then $\tan 3\theta$ is

- A undefined
- B $1/\sqrt{3}$
- C considered as infinity
- D $\sqrt{3}$

Answer: C

Explanation:

$$\sec\theta + \tan\theta = \sqrt{3}$$

$$\sec 30^\circ = \frac{2}{\sqrt{3}}$$

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

$$\sec 30^\circ + \tan 30^\circ = \frac{2}{\sqrt{3}} + \frac{1}{\sqrt{3}} = \sqrt{3}$$

$$\theta = 30^\circ$$

$$\tan 3\theta = \tan 3(30) = \tan 90 = \text{infinity}$$

Option C is the correct answer

Question 139

If $\sin(60^\circ - \theta) = \cos(\psi - 30^\circ)$, then the value of $\tan(\psi - \theta)$ is (assume that θ and ψ are both positive acute angles with $\theta < 60^\circ$ and $\psi > 30^\circ$).

- A $1/\sqrt{3}$
- B 0
- C $\sqrt{3}$
- D 1

Answer: C

Explanation:

We know that between 0 and 90 degrees, sin and cos values are equal only for 45 degrees.

$$\theta = 15 \text{ degrees and } \psi = 75 \text{ degrees.}$$

$$\psi - \theta = 60 \text{ degrees.}$$

$$\tan 60 = \sqrt{3}$$

Option C is the right answer.

Question 140

The value of $(1 + \cot \theta - \operatorname{cosec} \theta)(1 + \tan \theta + \sec \theta)$ is equal to

- A 1
- B 2
- C 0

D $^{-1}$

Answer: B

Explanation:

$$(1 + \cot\theta - \operatorname{cosec}\theta) = (1 + \frac{\cos\theta}{\sin\theta} - \frac{1}{\sin\theta})$$
$$= \frac{\sin\theta + \cos\theta - 1}{\sin\theta}$$

$$(1 + \tan\theta + \sec\theta) = (1 + \frac{\sin\theta}{\cos\theta} + \frac{1}{\cos\theta})$$
$$= \frac{\sin\theta + \cos\theta + 1}{\cos\theta}$$

$$(1 + \cot\theta - \operatorname{cosec}\theta)(1 + \tan\theta + \sec\theta) = \left(\frac{\sin\theta + \cos\theta - 1}{\sin\theta}\right)\left(\frac{\sin\theta + \cos\theta + 1}{\cos\theta}\right)$$
$$\left(\frac{\sin\theta + \cos\theta - 1}{\sin\theta}\right)\left(\frac{\sin\theta + \cos\theta + 1}{\cos\theta}\right) = \frac{(\sin\theta + \cos\theta)^2 - 1}{2}$$
$$= \frac{(\sin^2\theta + \cos^2\theta)^2 - 1}{\sin\theta\cos\theta} = \frac{\sin^2\theta + \cos^2\theta + 2\sin\theta\cos\theta - 1}{\sin\theta\cos\theta} = 2$$

Option B is the correct answer.

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Question 141

If $\tan \theta + \cot \theta = 2$, then the value of $\tan^n \theta + \cot^n \theta (0^\circ < \theta < 90^\circ, n \text{ is an integer})$ is

A 2

B $2n+1$

C $2n$

D 0

Answer: A

Explanation:

Given $\tan \theta + \cot \theta = 2$

Then $(\tan\theta + \cot\theta)^2 = 4$

$(\tan^2\theta + \cot^2\theta + 2\tan\theta\cot\theta) = 4$

$(\tan^2\theta + \cot^2\theta) = 2$

Option A is the correct answer.

Question 142

A pole stands vertically, inside a scalene triangular park ABC. If the angle of elevation of the top of the pole from each corner of the park is same, then in ABC, the foot of the pole is at the

A centroid

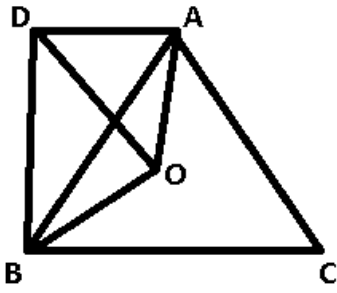
B circumcentre

C incentre

D orthocentre

Answer: B

Explanation:



OD is the vertical pole

Hence $\angle DOA = \angle DOB = 90$

It is given that $\angle OAD = \angle OBD$

OD is common to both triangle AOD and BOD

$$\Rightarrow \triangle AOD \cong \triangle BOD$$

$\Rightarrow OA = OB$

Similarly, $OA = OC$

Thus, O is equidistant from A,B and C and hence it is circumcentre.

Question 143

$\frac{\sin\theta}{x} = \frac{\cos\theta}{y}$, then $\sin\theta - \cos\theta$ is equal to

A $x - y$

B $x + y$

C $\sqrt{\frac{x-y}{x^2+y^2}}$

D $\sqrt{\frac{y-x}{x^2+y^2}}$

Answer: C

Explanation:

$$\frac{\sin\theta}{x} = \frac{\cos\theta}{y}$$

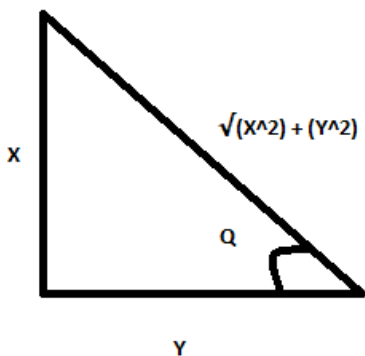
Rearranging the given data, we get

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

Now taking $\cos\theta$ common from $\sin\theta - \cos\theta$, we get

$$= \cos\theta(\tan\theta) - 1 \dots \dots \dots (1)$$

Imagine a right angle triangle



From this triangle, we can calculate values of $\cos\theta$ and $\tan\theta$ and hence putting the values in equation 1

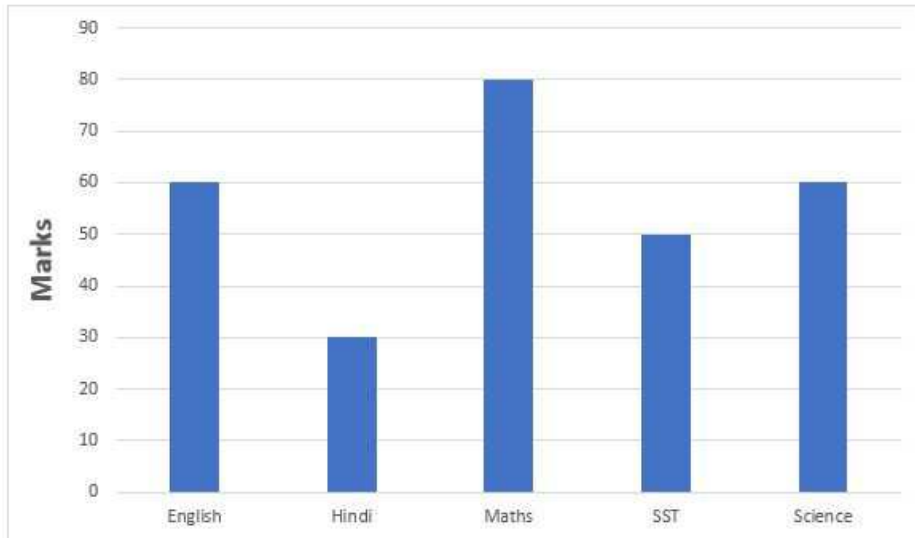
we get = $\sqrt{(x^2+y^2)} (y-1)$

$$= \sqrt{\frac{x-y}{x^2+y^2}}$$

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Question 144

The above bar graph show the marks obtained by a student in an examination. What is the average marks obtained by the student ?



- A 55
- B 56
- C 57
- D 58

Answer: B

Explanation:

Marks obtained by the student in :

English = 60

Hindi = 30

Maths = 80

Sst = 50

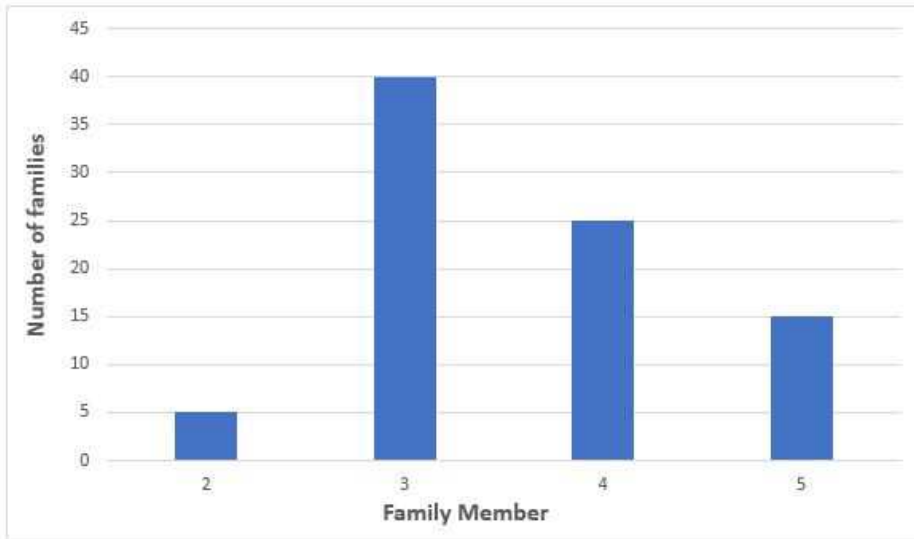
Science = 60

$$\Rightarrow \text{Total marks} = 60+30+80+50+60 = 280$$

$$\Rightarrow \text{Average marks} = 280/5 = \mathbf{56}$$

Question 145

Study the bar graph carefully and answer the following question. Which type of family is the most common ?



- A 2 members
- B 3 members
- C 4 members
- D 5 members

Answer: B

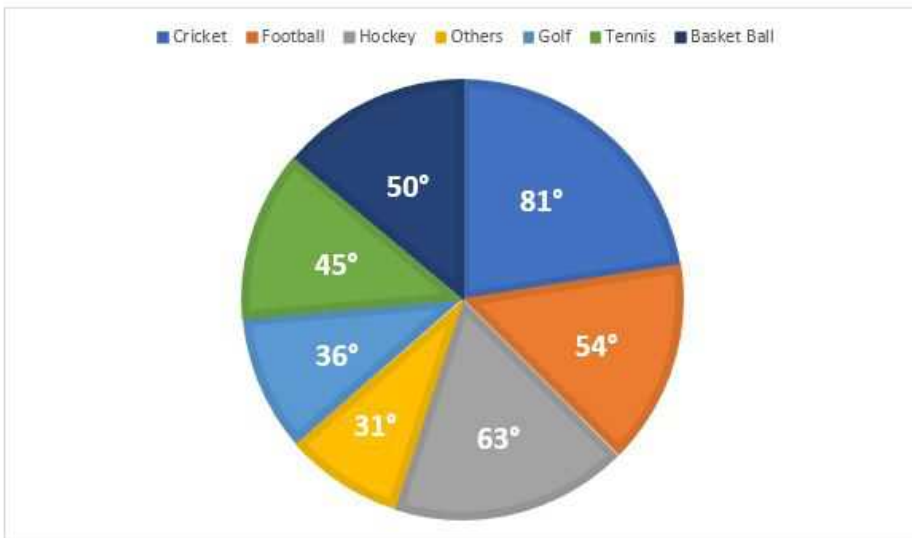
Explanation:

Since, families with 3 family members is the maximum(40).

∴ 3 member family is most common.

Instructions

The Pie Chart shows the expenditure of a country on various sports during a particular year. Study the graph and answer the questions.



Question 146

If the total amount spent on cricket and hockey together is Rs. 80,000, the total amount spent on sports is

- A Rs. 1,00,000
- B Rs. 2,00,000

C Rs. 2,50,000

D Rs. 3,00,000

Answer: B

Explanation:

Amount spent on cricket and hockey = 80,000

Angle subtended by spent on cricket and hockey = $81+63 = 144$

$$\begin{aligned} \Rightarrow \text{Total amount spent on sports} &= \frac{80,000}{144} * 360 \\ &= \text{Rs } 2,00,000 \end{aligned}$$

General Science Notes for SSC CGL

Question 147

How much per cent more is spent on Hockey than that on Golf ?

A 27%

B 35%

C 37.5%

D 75%

Answer: D

Explanation:

Angle subtended by spent on hockey = 63

Angle subtended by spent on golf = 36

$$\begin{aligned} \Rightarrow \% \text{ spent more on hockey than that on golf} &= \frac{63-36}{36} * 100 \\ &= \frac{27}{36} * 100 = 75\% \end{aligned}$$

Question 148

How much per cent less is spent on football than that on cricket ?

A $22\frac{2}{9}\%$

B 27%

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

D $37\frac{1}{2}\%$

Answer: C

Explanation:

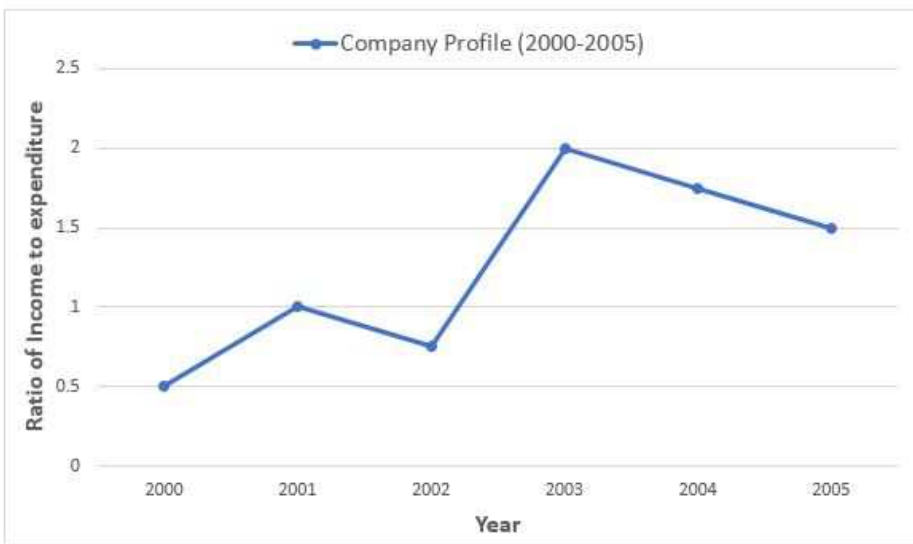
Angle subtended by spent on football = 54

Angle subtended by spent on cricket = 81

$$\begin{aligned} \Rightarrow \% \text{ less spent on football than that on cricket} &= \frac{81-54}{81} * 100 \\ &= \frac{100}{3} = 33\frac{1}{3}\% \end{aligned}$$

Instructions

Study the following graph and answer the questions.



Question 149

Find the percentage decrease in income from 2001 to 2002.

- A 50
- B 33
- C 37.5
- D Data inadequate

Answer: D

Explanation:

In the graph, ratio of income to expenditure is given, while exact value of income or expenditure is not provided.

Hence, % decrease in income cannot be determined.

Data inadequate

Ans - (D)

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Question 150

If the income shows positive growth in every year throughout the period (2000 - 2005), then in how many years the expenditure shows a positive growth ?

- A 50
- B 3
- C 4
- D 2

Answer: D

Explanation:

If the income shows positive growth in every year, then the expenditure will show a positive growth in 2 years.

The reason for this is that at two points in the graph, the graph is moving upward from '2000-2001' and '2002-2003'

Ans - (D)

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Reasoning

Instructions

For the following questions answer them individually

Question 151

Video : Cassette :: Computer : ?

- A Files
- B Floppy
- C Bits
- D Adit

Answer: B

Explanation:

Recordings of the second are visualised on the first. Thus, Computer : Floppy

=> Ans - (B)

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Question 152

Glucometer : Blood Sugar :: Sphygmomanometer : ?

- A Earthquake
- B Blood Pressure
- C Atmospheric Pressure
- D Specific Gravity

Answer: B

Explanation:

A glucometer checks the sugar level in blood, similarly a sphygmomanometer measures blood pressure.

=> Ans - (B)

Question 153

Behaviour: Psychology :: Plant : ?

- A Plant
- B Botany
- C Zoology
- D Physiology

Answer: B

Explanation:

Psychology is the study of human behaviour, similarly botany is the study of plants.

=> Ans - (B)

Question 154

Mitochondria : Energy :: DNA : ?

- A Inheritance
- B Reproduction
- C Locomotion
- D Immunity

Answer: A

Explanation:

Mitochondria is the power house (creates energy) of a cell, similarly DNA is related to inheritance.

=> Ans - (A)

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Question 155

Desert: Mirage ;; Ocean : ?

- A El-Nino
- B Whale
- C Blizzard
- D Hail

Answer: A

Explanation:

Mirage is an optical illusion of water in a desert, similarly el-nino is a complex climatic changes affecting the ocean.

=> Ans - (A)

Question 156

525 : 25 :: 315 : ?

- A 10
- B 15
- C 5
- D 25

Answer: B

Explanation:

Expression = 525 : 25 :: 315 : ?

The pattern followed is that, when we divide first number by 21, we get the second number.

Eg :- $\frac{525}{21} = 25$

Similarly, $\frac{315}{21} = 15$

=> Ans - (B)

Instructions

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

Question 157

A $\frac{3}{7}$

B $\frac{7}{2}$

C $\frac{4}{13}$

D $\frac{13}{16}$

Answer: B

Explanation:

(A) : $\frac{3}{7} \approx 0.42$

(B) : $\frac{7}{2} = 3.5$

(C) : $\frac{4}{13} \approx 0.30$

(D) : $\frac{13}{16} = 0.8125$

Among the given numbers only $\frac{7}{2}$ is greater than 1, hence it is the odd one out.

=> Ans - (B)

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Question 158

A Marine

B Ocean

C Navigation

D Sea

Answer: C

Explanation:

Marine, ocean and sea are all related to water, hence navigation is the odd one out.

=> Ans - (C)

Question 159

A ZYX

B FED

C NML

D GHI

Answer: D

Explanation:

All of the words, except for the last one are written in reverse order, hence GHI is the odd one.

=> Ans - (D)

Question 160

- A XZY
- B MON
- C PRQ
- D EAC

Answer: D

Explanation:

(A) : X (+2 letters) = Z (-1 letter) = Y

(B) : M (+2 letters) = O (-1 letter) = N

(C) : P (+2 letters) = R (-1 letter) = Q

(D) : E (-4 letters) = A (+2 letters) = C

=> Ans - (D)

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Question 161

- A 1-5
- B 4-20
- C 5-65
- D 7-35

Answer: C

Explanation:

The ratio of each of the numbers is :

(A) : $\frac{5}{1} = 5$

(B) : $\frac{20}{4} = 5$

(C) : $\frac{65}{5} = 13$

(D) : $\frac{35}{7} = 5$

=> Ans -(C)

Question 162

- A 46-10
- B 42-33
- C 20-38
- D 91-12

Answer: D

Explanation:

Except the last option, the difference in each pair is multiple of 9

(A) : 46 - 10 = 36

- (B) : $42 - 33 = 9$
(C) : $38 - 20 = 18$
(D) : $91 - 12 = 79$
=> Ans - (D)

Instructions

In the following questions, arrange the given words in a meaningful and ascending order and select the option indicating the correct order.

Question 163

- 1: Venus
2: Earth
3: Mars
4: Mercury
5: Jupiter

- A 4, 2, 1, 3, 5
B 4, 2, 1, 5, 3
C 4, 1, 2, 3, 5
D 4, 1, 2, 5, 3

Answer: C

Explanation:

The given planets have to be arranged in the order of their distances from the Sun.

Hence the order is Mercury, Venus, Earth, Mars, Jupiter.

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Question 164

- 1: Pages
2: Book rack
3: Library
4: Books
5: Catalogue

- A 2, 5, 4, 3, 1
B 1, 5, 4, 3, 2
C 1, 4, 2, 5, 3
D 1, 2, 4, 5, 3

Answer: C

Explanation:

Collection of pages make a book.

Collection of books make a book rack.

Collection of book racks make a catalogue.

Collection of catalogues make a library.

Hence the order is 1,4,2,5,3

Question 165

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

ab _ babc _ ab _ b _ bcb _ b

- A cbcaa
- B cabac
- C abcba
- D a.caca

Answer: A

Explanation:

Expression = ab _ babc _ ab _ b _ bcb _ b

The pattern followed is that in a group of 4 letters, the term 'abcb' is repeated.

= abcb abcb abcb abcb ab

=> Ans - (A)

Question 166

A series is given, with one term missing. Choose the correct alternative from the given ones.

ABEF, IJMN, ?

- A QRVU
- B QRUV
- C QRVW
- D QSVU

Answer: B

Explanation:

The pattern followed is :

A (+8 letters) = I (+8 letters) = Q

B (+8 letters) = J (+8 letters) = R

E (+8 letters) = M (+8 letters) = U

F (+8 letters) = N (+8 letters) = V

Thus, missing term = **QRUV**

=> Ans - (B)

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Instructions

In the following questions, find the missing number from the given responses.

Question 167

0, 6, 24, 60, ?, 210

- A 117
- B 119

C 120

D 153

Answer: C

Explanation:

The difference between the differences of each term is in increasing order of multiples of 6.

$$6-0=6$$

$$24-6=18$$

$$60-24=36$$

Difference between differences :

$$18-6 = 12 (6 \times 2)$$

$$36-18=18(6 \times 3)$$

The next value must be 24.

The difference between 60 and the next term in the series must be 24 more than 36 which is 60.

The next term of the series is 60 more than 60 which is 120.

Hence Option A is the correct answer.

Question 168

49	81	64
4	49	9
25	16	36
10	?	11

A 6

B 4

C 9

D 16

Answer: A

Explanation:

Square root of value in row 1 - Square root of value in row 2 + Square root of value in row 3 = Value in row 4.

$$9-7+4 = 6$$

Hence Option A is the correct answer.

Question 169

2	14	21	28
3	21	28	35
4	?	35	?

A 35 and 49

B 28 and 42

C 21 and 42

D 49 and 28

Answer: B

Explanation:

Values starting from column 2 are multiples of 7 which start from the value in column 1.

Values in Row 1 from column 2 are 14 (7×2), 21 and 28 since the value in column 1 is 2.
Values in Row 1 from column 2 are 21 (7×3), 28 and 35 since the value in column 1 is 3.
So, the values in third row must be 28, 35 and 42.
The missing terms are 28 and 42.
Option B is the correct answer.

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Question 170

2	3	4
24	39	?
20	30	40

- A 44
- B 49
- C 50
- D 56

Answer: D

Explanation:

Value in row 2 - square of value in row 1 = value in row 3

Let the missing term be x

$$x - 16 = 40$$

$$x = 56$$

Hence Option D is the correct answer.

Question 171

7	3	2
4	9	6
2	1	5
39	65	?

- A 91
- B 68
- C 56
- D 104

Answer: A

Explanation:

Sum of the values in first 3 rows of each column is 13.

$$13 \times 3 = 39$$

$$13 \times 5 = 65$$

$$13 \times 7 = 91$$

Hence Option A is the correct answer.

Instructions

For the following questions answer them individually

Question 172

x goes 15 metres North, then turns right and walks 20 metres, then again turns right and walks 10 metres then again turns right and walks 20 metres. How many metres is he from his original position ?

- A 5 m
- B 10 m
- C 15 m
- D 20 m

Answer: A

Explanation:

x first goes 15 m north and then comes back 10 m , therefore he is 5 m north of his initial position. also, he walks first walks 20 m towards East by turning right once and then walks 20 m west by turning right once more, so he is 0 m east. we can see that he has only moved 5 m north from his original position. option A.

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Question 173

A watch reads 7.30. If the minute hand points West, then in which direction will the hour hand point ?

- A North
- B North East
- C North West
- D South East

Answer: C

Explanation:

If A watch reads 7.30 and the minute hand points West, then the hour hand will point in the direction 30 degrees CW of west which is North-West. option C.

Instructions

In the following questions, from the given alternative words, select the word which cannot be formed using the letters of the given word :

Question 174

PENULTIMATE

- A PEANUT
- B MINUTE
- C ELIMINATE
- D LIME-TEA

Answer: C

Explanation:

Using the letters of the word PENULTIMATE, all the words that can be formed completely except ELIMINATE, because there is a single 'l' in ELIMINATE, option C.

Question 175

PROCRASTINATE

- A PtiYriERN
- B TRACTOR
- C PRINTED
- D PAINTER

Answer: C

Explanation:

From the given alternatives all the words except PRINTED can be formed completely using the letters of the word PROCRASTINATE, because of the missing 'D' in PROCRASTINATE. option C.

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Question 176

ADOLESCENT

- A ENCLOSE
- B DONATE
- C SECRET
- D LEAST

Answer: C

Explanation:

From the given alternatives all except SECRET can be completely formed from the letters of the word ADOLESCENT because there is no R in ADOLESCENT. correct answer is option C.

Instructions

For the following questions answer them individually

Question 177

If SPANK is coded as PSNAK, then THROW is coded as

- A HTWOR
- B HTWRO
- C HTRW
- D HTORW

Answer: D

Explanation:

If SPANK is coded as PSNAK, then on similar lines, THROW can be coded as HTORW. option D.

Question 178

If ANCIENT is coded as 2516859 and NATURE is coded as 529048, then TRAIN will be coded as

- A 94285

- B 92456
- C 94265
- D 94168

Answer: C

Explanation:

The code for each letter is given, i.e. A = 2, N = 5, I = 6, R = 4, T = 9

Thus, TRAIN = **94265**

=> Ans - (C)

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Question 179

If BLUE is written as EUBL, then BULB is written as

- A BLUB
- B BBUL
- C BBLU
- D BLBU

Answer: D

Explanation:

Any general word abcd that can be coded in the same pattern as dcab. therefore BULB can be coded as BLBU. option D.

Question 180

40% of 1620 + 30% of 960 = ? % of 5200

- A 12
- B 24
- C 16
- D 18

Answer: D

Explanation:

$$40\% \text{ of } 1620 = \frac{40 \times 1620}{100} = 648$$

$$30\% \text{ of } 960 = \frac{30 \times 960}{100} = 288$$

$$648 + 288 = 936$$

Let the unknown percentage be x .

$$936 = x\% \text{ of } 5200$$

$$x = \frac{936 \times 100}{5200} = 18$$

Hence option D is the correct answer.

Question 181

Which of the following interchange of signs would make the given equation correct ?

$$2 \times 3 + 6 - 12 \div 4 = 17$$

A \times and $+$

B $+$ and $-$

C $+$ and \div

D $-$ and \div

Answer: A

Explanation:

By interchanging \times and $+$, we see that L.H.S is equal to 17.

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Question 182

'B' stands for addition, 'Cr' stands for subtraction, 'E' stands for multiplication, 'C' stands for division, 'D' stands for equal to, 'A' stands for greater than, stands for less than. In each of the four alternatives, only one expression is correct according to the letter symbol. Identify that expression.

A 15 C 3 B 2 A 6 E 2

B 15 B 2 G 5 A 4 G A

C 15 C 3 B 2 D 6 B 1

D 15 B 3 D 4 E 6

Answer: C

Explanation:

A. 15C3B2A6E2 \Rightarrow $15 \div 3 + 2 > 6 \times 2$
 $7 > 12$ False

B. 15B2G5A4GA \rightarrow ~~$15 + 2 = 5$~~
 G was not mentioned

C. 15C3B2D6B1 \Rightarrow $15 \div 3 + 2 = 6 + 1$
 $7 = 7$ True

D. 15B3D4E6 \rightarrow $15 + 3 = 4 \times 6$
 $18 = 24$ False

Question 183

Identify the symbols to be inserted to make the expression correct.

$24 \Delta 4 \Delta 5 \Delta 4$

A $\times + \times$

B $= \times +$

C $\times + =$

D $+ = \times$

Answer: B

Explanation:

For $24 \Delta 4 \Delta 5 \Delta 4$

option A: $24 \times 4 + 5 \times 4$, doesn't make sense

option B: $24 = 4 \times 5 + 4$, which is true.

the correct answer is option B.

Question 184

6 boys A, B, C, D, E, F are sitting in a row facing West. D is between A and C. B is just right of C but left of F. E is not at the right end.

Who is at the right end ?

A 1. C

B F

C D

D B

Answer: B

Explanation:

Dis between A and C \Rightarrow ADC or CDA —(i)

B is just right of C and left of f \Rightarrow CBF —(ii)

(i) & (ii) imply ADCBF

E is not at right end

Hence the order is EADCBF

Hence f is at right end

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Question 185

Y is in the East of X which is in the North of Z. If P is in the South of Z, then in which direction of Y is P ?

A North

B East

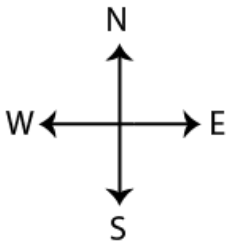
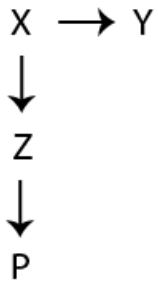
C South-East

D South-West

Answer: D

Explanation:

From the given description the positions of Y, X, Z, P is as below:



it can be clearly seen that P is south-west of Y. option D.

Question 186

Kate walks 4 km towards South. She then turns towards her left and walks 8 km more. After that she turns left again and walks another 8 km. Here, she meets her friend coming from the opposite direction and they both stop here. Which direction would she be facing ?

- A North
- B South
- C East
- D West

Answer: A

Explanation:

Kate was walking towards South, then she turned left towards East, then she again turned left towards North to meet her friend, so she will finally be facing North. option A.

Instructions

In the following questions, two statements are given followed by two/four conclusions I, II, III and IV. You have to consider the two 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 statements.

Question 187

Statements :

- I. Some birds are clouds.
- II. Horse is a bird.

Conclusions :

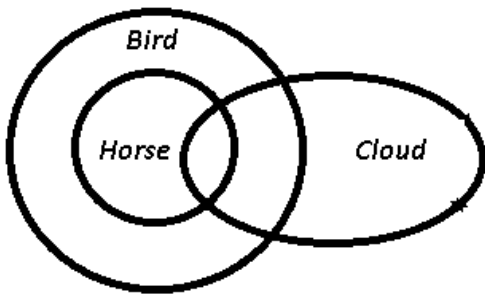
- I. Some clouds are birds.
- II. Horse is not a cloud.

- A Conclusion I follows.
- B Conclusion II follows.
- C Either conclusion I or II follows.
- D Neither conclusion I nor II follows.

Answer: A

Explanation:

The venn diagram for above statements is :



Conclusions :

- I. Some clouds are birds = true
- II. Horse is not a cloud = false (may or may not be true)

Thus, only conclusion I follows.

=> Ans - (A)

General Science Notes for SSC CGL

Question 188

Statements :

- I. Ravi has five pens.
- II. No one else in the class has five pens.

Conclusions :

- I. All students in the class have pens.
- II. All students in the class have five pens each.
- III. Some of the students have more than five pens.
- IV. Only one student in the class has exactly five pens.

- A Only conclusion I follows.
- B Only Conclusion III follows.
- C Only conclusion II follows.
- D Only conclusion IV follows.

Answer: D

Explanation:

The statement indicates that no one apart from Ravi has 5 pens in the class.

Conclusions :

- I. All students in the class have pens = false (no information)
- II. All students in the class have five pens each = false
- III. Some of the students have more than five pens = false
- IV. Only one student in the class has exactly five pens = true

Thus, only conclusion IV follows.

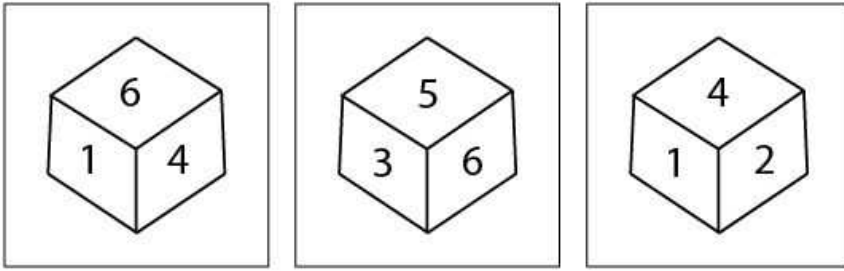
=> Ans - (D)

Instructions

For the following questions answer them individually

Question 189

Three positions of a dice are given. Find out which number is found opposite the number 2 in the given cube.



- A 6
- B 5
- C 3
- D 1

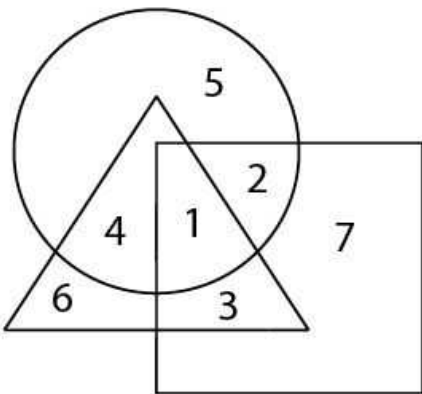
Answer: A

Explanation:

From the images 1 & 3, the number that is opposite to 2 must be 6.

Question 190

In the following figure Circle represents hardworking. Triangle represents sincere and Square represents intelligent. Find out the hardworking who are intelligent but not sincere.



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

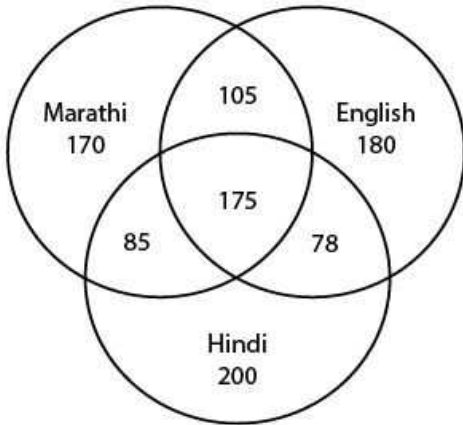
Answer: B

Explanation:

In the figure Circle represents hardworking. Triangle represents sincere and Square represents intelligent. Hence, the hardworking who are intelligent but not sincere is region overlapped by circle and square excluding the triangle. Hence, the region 2.

Question 191

The above diagram shows if survey on a sample of 10, persons with reference their knowledge of English Hindi and Marathi. How man_ knew only Hindi



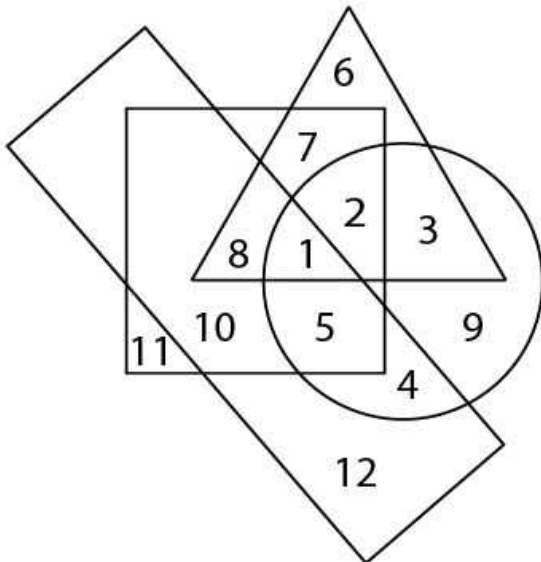
- A 85
- B 175
- C 78
- D 200

Answer: D

Explanation:

People who knew only hindi , should not include the overlapped regions of Marathi & English. / Hence, 200 is the answer.

Question 192



In the above figure, the circle stands for employed, the square stands for social worker, the triangle stands for illiterate and the rectangle stands for truthful. Study the figure and answer the questions which region represents literate, employed people who are neither truthful nor social worker.

- A 11
- B 4
- C 9

D 10

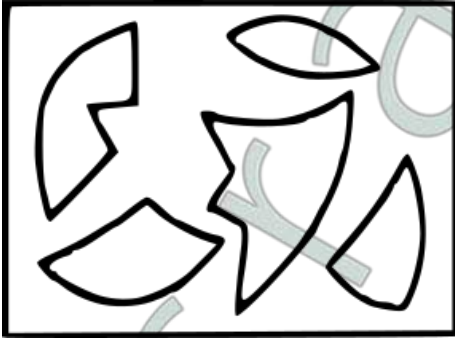
Answer: C

Explanation:

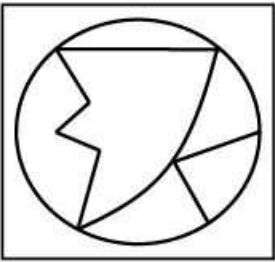
In the above figure, the circle stands for employed, the square stands for social worker, the triangle stands for illiterate and the rectangle stands for truthful. The region which represents literate, employed people who are neither truthful nor social worker is the region overlapped by circle and excluding square and rectangle. Hence, the region 9.

Question 193

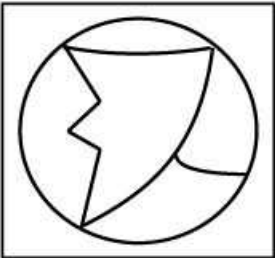
Identify the answer figures from which the pieces given in question figure have been cut.



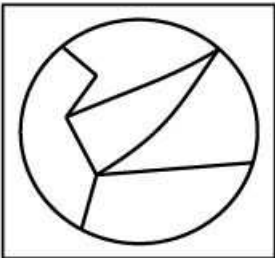
A



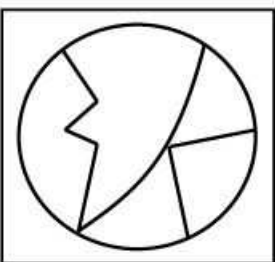
B



C



D



Answer: B

Explanation:

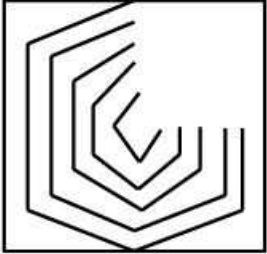
Re-arranging the parts in the question image will result in Option B.

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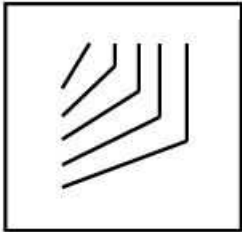
Instructions

In the following questions, which answer figure will complete the pattern in the question figure ?

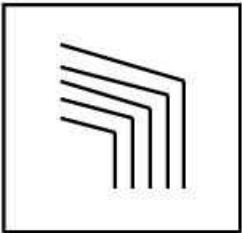
Question 194



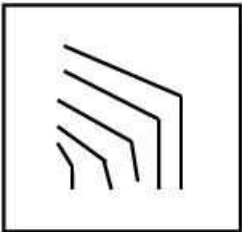
A



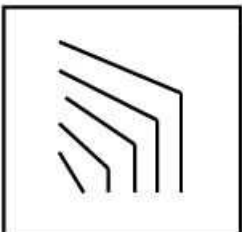
B



C



D



Answer: D

Explanation:

Overlapping the question image with the options, we can find that Option D fits better.

Question 195



A



B



C



D



Answer: A

Explanation:

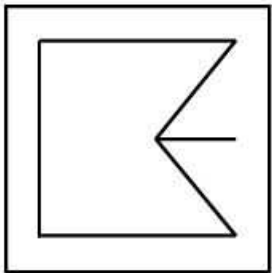
Overlapping the question image with the options, we can find that Option A fits well.

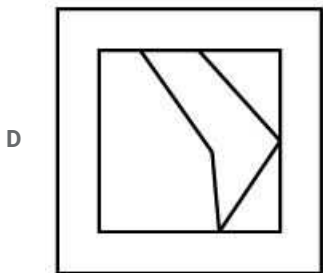
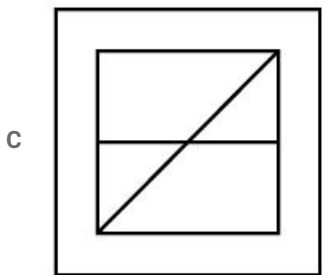
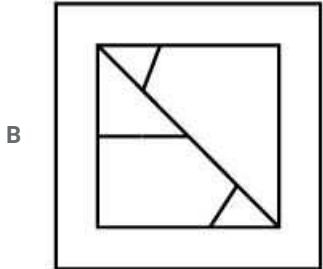
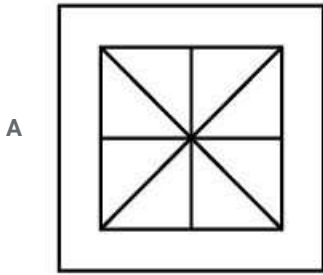
Instructions

For the following questions answer them individually

Question 196

From the given answer figures, select the one in which the question figure is hidden/embedded.





Answer: A

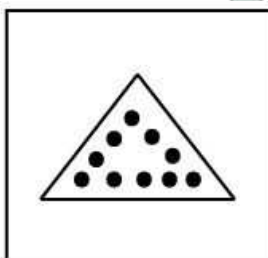
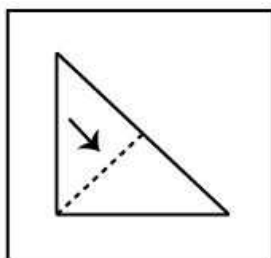
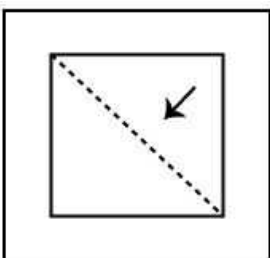
Explanation:

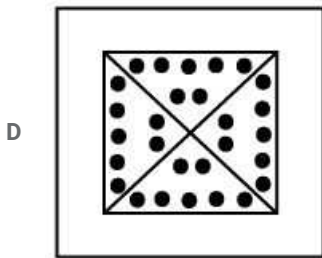
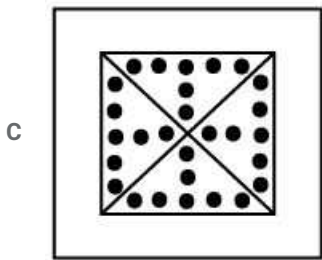
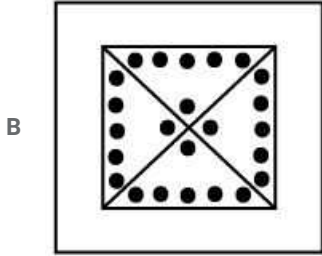
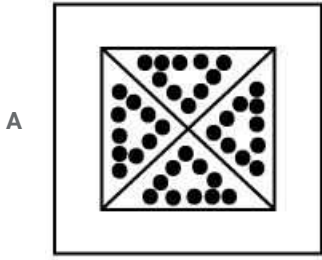
The question image has horizontal line and semi diagonal lines , which are only present in Option A.

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Question 197

A piece of paper is folded and cut as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.





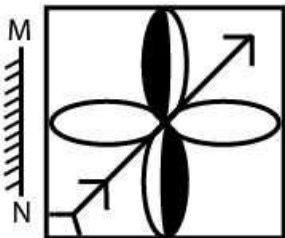
Answer: A

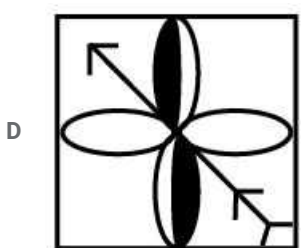
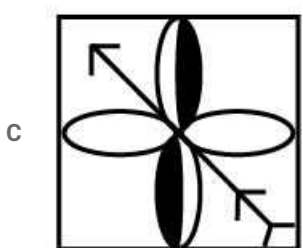
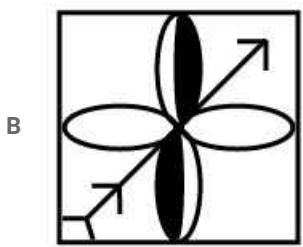
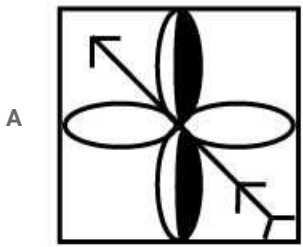
Explanation:

Since, the holes are made in triangular shape, we get the same shape on all the sides.
Hence, Option A.

Question 198

From the answer figures, find out the figure which is the exact mirror image of the question figure, when the mirror is placed on the line 'MN' ?





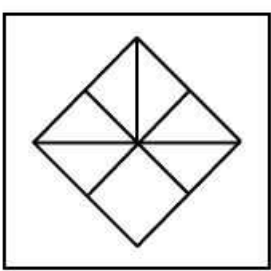
Answer: C

Explanation:

To get the mirror image, Flipping the image along the MN axis, we get Option C

Question 199

How many triangles are there in the given figure ?



- A 7
- B 10
- C 8
- D 9

Answer: B

Explanation:

There are 6 smaller triangles, 2 medium triangles and 2 larger triangles.

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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. The columns and rows of Matrix I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, e.g., 'A' can be represented by 00, 12 etc. and 'V' can be represented by 56, 76 etc. Similarly, you have to identify the set for the word 'PARROT'.

MATRIX I

	0	1	2	3	4
0	A	B	C	D	E
1	E	C	A	B	D
2	A	E	B	D	C
3	B	A	D	C	E
4	A	D	C	B	E

MATRIX II

	5	6	7	8	9
5	O	P	Q	R	T
6	P	O	T	Q	R
7	O	P	R	S	T
8	P	O	Q	R	T
9	O	P	Q	R	T

- A 56, 00, 77, 88, 86, 99
- B 85, 20, 58, 77, 87, 79
- C 65, 30, 77, 98, 90, 99
- D 66, 40, 76, 77, 86, 99

Answer: A

Explanation:

P can be 56 or 65 or 76 or 85 or 96
A can be 00 or 20 or 40 or 31 or 12
R can be 77 or 58 or 88 or 98 or 69
R can be 77 or 58 or 88 or 98 or 69
O can be 55 or 66 or 75 or 86
T can be 59 or 67 or 79 or 89 or 99
Hence, 56, 00, 77, 88, 86, 99

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