



SSC CGL 2013 Tier 1 21 April Morning Shift

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General Awareness

Instructions

For the following questions answer them individually

Question 1

Indira Gandhi Prize for Peace, Disarmament and Development - 2012 was awarded to :

- A Sunita Williams
- B Chanda Kochhar
- C Ellen Johnson Sirleaf
- D Tereza Fajksova

Answer: C

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Question 2

In dicots the pollen-grains possess :

- A two germ pores
- B three germ pores
- C four germ pores
- D one germ pore

Answer: B

Question 3

Acceptable "Noise Pollution Level" in India range between:

- A 16 - 35 dec
- B 40 - 45 dec
- C 70 - 100 dec
- D 10.- 15 dec

Answer: B

Question 4

Externality theory is the basic theory of the following branch of Economics:

- A Environomics
- B Fiscal Economics
- C International Economics
- D Macro Economics

Answer: A

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Question 5

Multi-purpose river valley projects are the "New temples of modern India". The above statement is made by :

- A Motilal Nehru
- B Mahatma Gandhi
- C Rajiv Gandhi
- D Jawaharlal Nehru

Answer: D

Question 6

What type of information system would be recognised by digital circuits ?

- A Binary system
- B Both hexadecimal and binary system
- C Only Roman system
- D Hexadecimal system

Answer: A

Question 7

Who was not a politician ?

- A I.K. Gujral
- B S.L. Bahuguna
- C J. Jayalalitha
- D H.N. Bahuguna

Answer: B

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Question 8

Who gave the title of "Mahamana" to Madan Mohan Malviya ?

- A Dada Bhai Naurozi
- B Gopal Krishna Gokhale
- C Mahatma Gandhi
- D Bal Gangadhar Tilak

Answer: C

Question 9

First Hindu-American to enter in the US House of Representative as senator is :

- A Sunita Williams
- B Jyoti Sengupta
- C Ami Hera
- D Tulsi Gabbard

Answer: D

Question 10

Pick out the correct match:

- A Fleshy foods - Calcium and Protein
- B Fish - Starch and Vitamin
- C Milk - Fibre and Minerals
- D Egg yolk - Protein and Fat

Answer: D

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Question 11

Who was the Viceroy at the time of Quit India Movement ?

- A Lord Mountbatten
- B Lord Wavell
- C Lord Lin Lithgow
- D Lord Irwin

Answer: C

Question 12

Expand the term IPCC

- A International Panel of Climate Control
- B Interim Panel of Climate Change
- C Intergovernmental Panel on Climate Change
- D International Pollution Control Council

Answer: C

Question 13

Who described the Government of India Act, 1935 as a new charter of bondage ?

- A Mahatma Gandhi
- B Rajendra Prasad
- C Pt. Jawaharlal Nehru
- D B.R. Ambedkar

Answer: C

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Question 14

Endosulfan spray on cashew crop resulted in the pollution to the tune of tragedy in:

- A Kerala
- B Andhra Pradesh
- C Karnataka
- D Tamil Nadu

Answer: A

Question 15

"Functional Finance" is associated with:

- A Adolph Wogner
- B Adam Smith
- C Adams
- D Abba 'P' Lerner

Answer: D

Question 16

'Farad' is the unit of :

- A Capacitance
- B Inductance
- C Resistance
- D Conductance

Answer: A

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Question 17

Which of the following is an impact printer ?

- A Ink-jet printer
- B Bubble jet printer.
- C Laser printer
- D Daisy wheel printer

Answer: D

Question 18

The percentage of nitrogen present in ammonium sulphate is:

- A 27%
- B 25%
- C 30.5%
- D 18%

Answer: A

Question 19

Identify the odd term amongst the following group:

- A Optical fibre
- B Twisted pair wire
- C Microwaves
- D Coaxial cable

Answer: C

General Science Notes for SSC CGL

Question 20

Who was the other Congress leader who joined with Motilal Nehru to start the Swaraj Party in 1923 ?

- A B.G. Tilak
- B Chittaranjan Das
- C M.K. Gandhi
- D G.K. Gokhale

Answer: B

Question 21

In which part of the Indian Constitution, the fundamental duties are enshrined ?

- A IV A
- B IV B

C V

D IV

Answer: A

Question 22

Who of the following enjoys the rank of Cabinet Minister in Union Cabinet ?

A Judge of Supreme Court

B Secretary to Government of India

C Political Advisor to PM

D Deputy Chairman of Planning Commission

Answer: D

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Question 23

India and Japan inked two agreements during November 2012 to enable Tokyo to import from India :

A Rare earth minerals

B Basmati type rice

C Rubber based products

D Leather goods

Answer: A

Question 24

Aung San Sun Kyi is a native to:

A China

B Myanmar

C Arunachal Pradesh

D Tibet

Answer: B

Question 25

DPT vaccine is administered to prevent diseases like:

A Diphtheria, Pertussis and Tetanus

B Dengue, Pertussis and Typhoid

C Dengue, Polio and Tetanus

D Diphtheria, Pertussis and Typhoid

Answer: A

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Question 26

The WISE Prize-2012, also known as the "Nobel Prize for Education" was conferred by the WISE Summit in Doha on :

- A Dr. Madhav Chavan
- B Dr. Yash Pal
- C Dr. M.S. Swaminathan
- D Dr. APJ Abdul Kalam

Answer: A

Question 27

Diamonds are priced higher than water because :

- A they are sold by selected firms with monopolistic powers.
- B their marginal utility to buyers is higher than that of water.
- C their total utility to buyers is higher than that of water.
- D consumers do not buy them at lower prices.

Answer: B

Question 28

Ethanol containing 5% water is known as :

- A Dilute alcohol
- B Power alcohol
- C Rectified spirit
- D Absolute alcohol

Answer: C

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Question 29

Of the following land uses, which is restricted to Special Economic Zones ?

- A Educational Institutions
- B Free trade Centres
- C Marketing Centres
- D Information Technology Companies

Answer: B

Question 30

The eastward continuation of the Brazil current is called:

- A South Atlantic drift
- B Counter Equatorial drift
- C West Atlantic drift
- D North Atlantic drift

Answer: A

Question 31

The most powerful woman in business in India as rated by the "Fortune" for the year 2012 is :

- A Prabha Pararneswaran
- B Debjani Ghosh
- C Anjali Bansal
- D Chanda Kochhar

Answer: D

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Question 32

Communication satellites are used to :

- A receive communication signal only
- B receive and yedirect communication signal
- C provide information of natural resources only
- D transmit communication signal only

Answer: B

Question 33

What is the first sermon of Buddha called as ?

- A Brahmajalasutta
- B Dhammachakkapabattanasutta
- C Kachchayanagottasutta
- D Mahaparinirvansutta

Answer: B

Question 34

Where are the Todas found ?

- A Tamil Nadu
- B Rajasthan
- C Arunachal Pradesh
- D Madhya Pradesh

Answer: A

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Question 35

The "One Straw Revolution" was written by :

- A Richael Carlson
- B M.S. Swaminathan
- C Norman Borlaug
- D Masanobu Fukuoka

Answer: D

Question 36

Who wrote the book "Why Socialism" ?

- A Mahatma Gandhi
- B Acharya Narendra Dev
- C M.N. Roy
- D Jayaprakash Narayan

Answer: D

Question 37

Hypothermia occurs due to loss of excessive heat from body due to sudden low body temperature in:

- A Frogs
- B Human beings
- C Lizards
- D Snakes

Answer: B

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Question 38

The disease that has been eradicated from the world is:

- A Leprosy
- B Poliomyelitis
- C Chicken pox
- D Small pox

Answer: D

Question 39

The vacancy of the office of the President must be filled within :

- A 6 months
- B 12 months
- C 1 month
- D 3 months

Answer: A

Question 40

Non Resident Indians (NRI) Day is marked on:

- A January 9
- B January 17
- C January 19
- D January 7

Answer: A

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Question 41

Blood is a:

- A connective tissue
- B epithelial tissue
- C muscular tissue
- D reproductive tissue

Answer: A

Question 42

The natural disaster in which carbon-di-oxide suddenly erupts from a deep lake water is known as

- A Lacaustrine

- B Fluvial
- C Glacial
- D Liminic

Answer: D

Question 43

Steel is more elastic than rubber because it :

- A requires larger deforming force
- B is never deformed
- C is deformed very easily
- D is harder than rubber

Answer: C

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Question 44

The hormone used as an oral contraceptive is :

- A Cortisone
- B Progesterone
- C Testosterone
- D Aldosterone

Answer: B

Question 45

Transboundary pollution (or) Acid rain is caused by :

- A Carbon monoxide
- B Carbon dioxide
- C Hydrocarbon
- D Nitrogen oxide and sulphur dioxide

Answer: D

Question 46

Stains of rust on clothes can be removed by :

- A Oxalic acid
- B Petrol
- C Alcohol

D H O

Answer: A

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Question 47

From which of the following banks did Madan Mohan Malaviya take loans for financing "The Hindustan Times" ?

- A Punjab National Bank
- B Bank of Maharashtra
- C Bank of Baroda
- D State Bank of India

Answer: A

Question 48

Which of the following is an endemic species ?

- A Horn bill
- B Indian Rhino
- C Pink head duck
- D Nicobar pigeon

Answer: A

Question 49

Blood group was discovered by :

- A William Harvey
- B Landsteiner
- C Pavlov
- D Alexander Fleming

Answer: B

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Question 50

"Whether I earned your vote or not, I have listened to you, have learned from you. You have made me a better President", as said by:

- A Barack Obama
- B George Bush
- C APJ Abdul Kalam

D Pranab Mukherjee

Answer: A

Explanation:

ENGLISH COMPREHENSION

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English

Instructions

In the following questions, some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error. The number of that part is your answer. If a sentence is free from error, then your answer is d: i.e. No Error.

Question 51

My sister asked me/a that how long b/ I would stay there. c/ No Error. D

- A My sister asked me
- B that how long
- C I would stay there
- D No Error

Answer: B

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Question 52

The teacher. as well as the students, a/ have gone on an excursion b/ to Ooty during their summer vacation. c/ No Error. D:

- A The teacher. as well as the students
- B have gone on an excursion
- C to Ooty during their summer vacation
- D No Error

Answer: B

Question 53

The US a/ don't want b/India in the Security Council. c/ No Error. D

- A The US
- B don't want
- C India in the Security Council.
- D No Error

Answer: A

Question 54

The cruel lady made a/her step daughter to do b/ all the household chores. c/ No Error. D

- A The cruel lady made
- B her step daughter to do
- C all the household chores
- D No Error

Answer: B

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Question 55

You can eat a/as much as you like b/at the newly lunch bar. c:/ No Error. D

- A You can eat
- B as much as you like
- C at the newly lunch bar
- D No Error

Answer: C

Instructions

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

Question 56

.....the people looked well enough, but when one looked more closely one saw that their faces were filled with despair.

- A At first looking
- B At first observation
- C On first sight
- D At first sight

Answer: D

Question 57

He was assured by his friendsevery type of help, in an emergency.

- A by
- B of
- C with
- D about

Answer: B

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Question 58

The work..... , he left his office.

- A having completed
- B having been completed
- C on being finished
- D having been over

Answer: B

Question 59

Our monthly expenditure..... by five hundred rupees when we decided to buy milk from the milkman.

- A shot up
- B got up
- C lifted up
- D grew up

Answer: A

Question 60

He was not a man..... intelligence.

- A lacking of
- B devoid of
- C absent of
- D empty of

Answer: B

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

Students are asked to collate for an important programme by the principal.

- A describe
- B narrate
- C prescribe

D assemble

Answer: D

Question 62

Advocate

A pronounce

B support

C determine

D predict

Answer: B

Question 63

Preamble

A mediation

B conclusion

C introduction

D definition

Answer: C

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Instructions

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

Question 64

Wary

A conscientious

B daring

C thrifty

D rash

Answer: D

Question 65

Ambiguous

A plain

B clear

C simple

D easy

Answer: B

Question 66

Accolade

- A blame
- B reticent
- C decorate
- D permeate

Answer: A

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Instructions

In the following questions, four alternatives are given for the Idiom/ Phrase printed in bold. Choose the alternative which best expresses the meaning of the Idiom/Phrase.

Question 67

To play second fiddle.

- A to reduce the importance of one's senior
- B take a subordinate role
- C to do back seat driving
- D to be happy, cheerful and healthy

Answer: B

Question 68

Mary broke a dining-room window and had to face the music when her father got home.

- A listen carefully
- B ask a lot of questions
- C listen to music
- D accept the punishment

Answer: D

Question 69

Villagers always call a spade a spade.

- A to speak in a straightforward manner
- B to call someone a spade
- C to speak ill about someone
- D to speak about spades

Answer: A

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Question 70

I am out of my wits and therefore cannot find a way to solve the problem immediately.

- A greatly confused
- B helpless without power
- C totally ignorant
- D not intelligent enough

Answer: A

Question 71

Why are you jumping down my throat ? I wasn't even in the house when it happened.

- A making a joke
- B scolding me
- C forcing me to cat
- D running away

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

He may have grown taller when I last saw him.

- A from when I last saw him
- B since I last saw him
- C before I last saw him
- D No improvement

Answer: B

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Question 73

While crossing the highway, a five year old child was knocked out by a passing car.

- A away
- B up

- C down
- D No improvement

Answer: C

Question 74

We are looking forward to see you tomorrow.

- A looking forward towards seeing
- B looking forward for seeing
- C looking forward to seeing
- D No improvement

Answer: C

Question 75

The clients are waiting outside since morning and will continue to wait until you meet them.

- A have waited
- B have been waiting
- C were waiting
- D No improvement

Answer: B

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Question 76

The workers are hell bent at getting what is due to them.

- A hell bent on getting
- B hell bent for getting
- C hell bent upon getting
- D No improvement

Answer: A

Question 77

During his long discourse, he did not touch that point.

- A touch upon
- B touch in
- C touch of
- D No improvement

Answer: A

Question 78

They could not tell me why did he not eat his lunch.

- A why not had he eaten
- B why he did not eat
- C why had he not eaten
- D No improvement

Answer: B

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Question 79

He who will bid the highest will get the product.

- A who bids the highest
- B who the highest bids
- C who would bid the highest
- D No improvement

Answer: A

Question 80

If he had time he will call you.

- A would have
- B would have had
- C has
- D No improvement

Answer: C

Question 81

John had fold me that he hasn't done it yet.

- A told
- B tells
- C was telling
- D No improvement

Answer: B

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Instructions

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

Question 82

A general pardon granted by the Government to political offenders

- A Excuse
- B Honesty
- C Amnesty
- D Pardon

Answer: C

Question 83

One who hates women

- A Misogamist
- B Ambivert
- C Misanthrope
- D Misogynist

Answer: D

Question 84

One who cannot be corrected

- A Incurable
- B Hardened
- C Invulnerable
- D Incurable

Answer: A

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Question 85

A school boy who cuts classes frequently is a

- A Sycophant
- B truant
- C Martinet
- D Defeatist

Answer: B

Question 86

Detailed plan of a journey

- A Travel kit
- B Schedule
- C Itinerary
- D Travelogue

Answer: C

Question 87

Stealing of ideas or writings of someone else

- A scepticism
- B mesmerism
- C plagiarism
- D autism

Answer: C

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Question 88

A person who consumes human flesh

- A Javage
- B Captor
- C Carnivore
- D Cannibal

Answer: D

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.

Question 89

The laboratories arewith high-tech electronic gadgets.

- A equipped
- B equiped
- C equepped
- D equipped

Answer: D

Question 90

Software companies have ushered in..... culture along with advanced technology.

- A foreegn
- B forigen
- C foreign
- D foriegn

Answer: C

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Instructions

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

The World Health Organisation is briefly called W.H.O. It is a specialised agency of the United Nations and was established in 1948. International health workers can be seen working in all kinds of surroundings: in deserts, jungles, mountains, coconut groves, and rice fields. They help the sick to attain health and the healthy to maintain their health. This global health team assists the local health workers in stopping the spread of what are called communicable diseases, like cholera. These diseases can spread from one country to another and so can be a threat to world health. W.H.O. assists different national health authorities not only in controlling diseases but also in preventing them altogether. Total prevention of diseases is possible in a number of ways. Everyone knows how people, particularly children, are vaccinated against one disease or another. Similarly, most people are familiar with the spraying of houses with poisonous substances which kill disease-carrying insects.

Question 91

“It is a specialised agency of the United Nations and was established in 1948.” Here specialised means :

- A expert
- B extraordinary
- C uncommon
- D made suitable for a particular purpose

Answer: A

Question 92

“Total prevention of diseases is possible in a number of ways”. The author has given illustrations of

- A only two such ways
- B only one such way
- C more than two such ways
- D none of these ways

Answer: A

Question 93

“International health workers can be seen working in all kinds of surroundings : in deserts, jungles, mountains, coconut groves, and rice fields”. Here International means:

- A drawn from all countries of the world
- B believing in cooperation among nations
- C belonging to an organisation which has something to do with different nations.
- D belonging to the whole world

Answer: C

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Question 94

“W.H.O. assists different national health authorities not only in controlling diseases but also in preventing them, altogether”. The above sentence implies that:

- A W.H.O. assists more in preventing diseases than in controlling them.
- B W.H.O: assists in controlling diseases only if they have not been prevented.
- C W.H.O. assists both in controlling diseases and in preventing them.
- D W.H.O. assists many others in addition to the national health authorities

Answer: C

Question 95

“They help the sick to attain health and the healthy to maintain their health”. Here they stands for :

- A rice fields
- B international health workers
- C jungles
- D deserts

Answer: B

Instructions

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

Why don't I have a telephone? Not because I pretend to be wise or pose as unusual. There are two chief reasons; because I don't really like the telephone, and because I find I can still work and play, eat, breathe, and sleep without it. Why don't I like the telephone? Because I think it is a pest and time waster. It may create unnecessary suspense and anxiety, as when you wait for an expected call, that doesn't come; or irritating delay, as when you keep ringing a number that is always engaged. As for speaking in a public telephone booth, it seems to me really horrible. You would not use it unless you were in a hurry, and because you are in a hurry, you will find other people waiting before you. When you do get into the booth, you are half suffocated by the stale, unventilated air, flavoured with cheap face-powder and chain smoking; and by the time you have begun your conversation your back is chilled by the cold looks of somebody who is moving about restlessly to take your place.

If you have a telephone in your house, you will admit that it tends to ring when you least want it to ring: when you are asleep, or in the middle of a meal or a conversation, or when you are just going out, or when you are in your bath. Are you strong minded enough to

ignore it, to say to yourself. "Ah well, it will be all the same in hundred years time". You are not. You think there may be some important news or message for you. Have you never rushed dripping from the bath, of chewing from the table, or dazed from bed, only to be told that you are a wrong number? You were told the truth. In my opinion all telephone numbers are wrong numbers. If of course, your telephone rings and you decide not to answer it, then you will have to listen to an idiotic bell ringing and ringing in what is supposed to be the privacy of your own home. You might as well buy a bicycle bell and ring it Yourself.

Question 96

The author does not have a telephone because

- A he poses as unusual
- B he would prefer to do something else
- C he thinks that it can create unnecessary suspense and anxiety.
- D he pretends to be wise

Answer: C

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Question 97

'.....your back is chilled by the cold looks of somebody' means:

- A you feel cold at the back
- B you feel uneasy because the person next in the queue looks at you restlessly
- C people are very cold
- D others look at you angrily

Answer: B

Question 98

'All telephone numbers are wrong numbers', because:

- A the author always gets wrong calls
- B whenever he tries it always goes wrong.
- C he doesn't give much importance to telephone and telephone numbers.
- D none of the statements given above.

Answer: D

Question 99

'Ah well, it will be all the same in hundred years time'. This sentence means :

- A Things have not changed for the past 100 years.
- B Things will remain the same for 100 years to come.
- C One should be strong minded.
- D Nothing is going to change even if you don't answer the telephone bell.

Answer: D

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Question 100

He hates speaking in a public telephone booth because:

- A he is suffocated by the stale, unventilated air, flavoured with cheap face powder and chain-smoking.
- B others look at him angrily
- C the other side may not know your number
- D it is costlier

Answer: A

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Quant

Instructions

For the following questions answer them individually

Question 101

A person distributes his pens among four friends A, B, C, D in the ratio $1/3 : 1/4 : 1/5 : 1/6$. What is the minimum number of pens that the person should have?

- A 57
- B 65
- C 75
- D 45

Answer: A

Explanation:

It is given that A person distributes his pens among four friends A, B, C, D in the ratio $1/3 : 1/4 : 1/5 : 1/6$

LCM of 3,4,5,6 is 60.

$$A:B:C:D = 60/3 : 60/4 : 60/5 : 60/6$$

$$= 20+15+12+10$$

Hence the minimum 57 pens should be there with the man before distribution.

General Science Notes for SSC CGL

Question 102

If $x, y, z \neq 0$ and $\frac{1}{x^2} + \frac{1}{y^2} + \frac{1}{z^2} = \frac{1}{xy} + \frac{1}{yz} + \frac{1}{zx}$ then the relation among x, y, z is

- A $x+y+z=0$
- B $x+y=z$

C $x-y=0$

D $x=y = z$

Answer: D

Explanation:

Expression : $\frac{1}{x^2} + \frac{1}{y^2} + \frac{1}{z^2} = \frac{1}{xy} + \frac{1}{yz} + \frac{1}{zx}$

Taking L.C.M on both sides

$$= \frac{x^2+y^2+z^2}{x^2y^2z^2} = \frac{xy+yz+zx}{x^2y^2z^2}$$

$$= x^2 + y^2 + z^2 - xy - yz - zx = 0$$

$$= \frac{1}{2} [(x - y)^2 + (y - z)^2 + (z - x)^2] = 0$$

$$\Rightarrow (x = y) \text{ and } (y = z) \text{ and } (z = x)$$

$$\Rightarrow x = y = z$$

Question 103

If $a \sin \theta + b \cos \theta = c$ then the value of $a \cos \theta - b \sin \theta$ is :

A $\pm \sqrt{-a^2 + b^2 + c^2}$

B $\pm \sqrt{a^2 + b^2 - c^2}$

C $\pm \sqrt{a^2 - b^2 - c^2}$

D $\pm \sqrt{a^2 - b^2 + c^2}$

Answer: B

Explanation:

$$a \sin \theta + b \cos \theta = c$$

on squaring both sides , we get

$$a^2 \sin^2 \theta + b^2 \cos^2 \theta + 2 a b \sin \theta \cos \theta = c^2 \dots\dots\dots(1)$$

We need to find value of : $a \sin \theta - b \cos \theta \dots\dots(2)$

So, on squaring both sides of equation 2, we get

$$(a \cos \theta - b \sin \theta)^2 = a^2 \cos^2 \theta + b^2 \sin^2 \theta - 2 a b \cos \theta \sin \theta \dots\dots(3)$$

Adding equation 1 and 3, we can say

$$c^2 + (a \cos \theta - b \sin \theta)^2 = a^2 \cos^2 \theta + b^2 \sin^2 \theta + a^2 \sin^2 \theta + b^2 \cos^2 \theta$$

$$c^2 + (a \cos \theta - b \sin \theta)^2 = a^2 \cos^2 \theta + b^2 \sin^2 \theta + a^2 \sin^2 \theta + b^2 \cos^2 \theta$$

$$c^2 + (a \cos \theta - b \sin \theta)^2 = a^2 \cos^2 \theta + a^2 \sin^2 \theta + b^2 \cos^2 \theta + b^2 \sin^2 \theta$$

$$c^2 + (a \cos \theta - b \sin \theta)^2 = a^2 + b^2$$

$$(a \cos \theta - b \sin \theta)^2 = a^2 + b^2 - c^2$$

$$(a \cos \theta - b \sin \theta) = \pm \sqrt{a^2 + b^2 - c^2}$$

Question 104

If $x = a \sec \theta \cos \Phi$, $y = b \sec \theta \sin \Phi$ $z = c \tan \theta$, then, the value of $\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2}$ is :

A 1

- B 4
- C 9
- D 0

Answer: A

Explanation:

$$x = a \sec \theta \cos \Phi$$

$$x^2 = a^2 \sec^2 \theta \cos^2 \Phi$$

$$\frac{x^2}{a^2} = \sec^2 \theta \cos^2 \Phi$$

$$y = b \sec \theta \sin \Phi$$

$$y^2 = b^2 \sec^2 \theta \sin^2 \Phi$$

$$\frac{y^2}{b^2} = \sec^2 \theta \sin^2 \Phi$$

$$z = c \tan \theta$$

$$z^2 = c^2 \tan^2 \theta$$

$$\frac{z^2}{c^2} = \tan^2 \theta$$

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2} = \sec^2 \theta \cos^2 \Phi + \sec^2 \theta \sin^2 \Phi - \tan^2 \theta$$

$$\sec^2 \theta \cos^2 \Phi + \sec^2 \theta \sin^2 \Phi - \tan^2 \theta = \sec^2 \theta (\cos^2 \Phi + \sin^2 \Phi) - \tan^2 \theta$$

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

Option A is the correct answer.

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Question 105

Mohan gets 3 marks for each correct sum and loses 2 marks for each wrong sum. He attempts 30 sums and obtains 40 marks. The number of sums solved correctly is

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

Answer: B

Explanation:

Let no. of correct questions be x and incorrect be y

$$\Rightarrow x + y = 30$$

$$\text{Also, } 3x - 2y = 40$$

Solving above equations, we get :

$$\Rightarrow x = 20 \text{ and } y = 10$$

$$\Rightarrow \text{No. of correct sums} = 20$$

Question 106

If $\frac{\sec \theta + \tan \theta}{\sec \theta - \tan \theta} = \frac{5}{3}$, then $\sin \theta$ is equal to :

- A $\frac{1}{4}$

B $\frac{1}{3}$

C $\frac{2}{3}$

D $\frac{3}{4}$

Answer: A

Explanation:

$$\frac{\sec\theta + \tan\theta}{\sec\theta - \tan\theta} = \frac{5}{3}$$

$$3\sec\theta + 3\tan\theta = 5\sec\theta - 5\tan\theta$$

$$2\sec\theta = 8\tan\theta$$

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

Question 107

The marked price of a watch was 720. A man bought the same for 550.80 after getting two successive discounts, the 1st being 10%. What was the 2nd discount ?

A 14%

B 15%

C 18%

D 12%

Answer: B

Explanation:

it is given that marked price of a watch = Rs 720

Now first discount is = 10%

Price after 1st discount = $0.9 \times 720 = \text{Rs } 648$

Now let the 2nd discount be $y\%$

So price after 2nd discount is mentioned as = Rs 550.80

$$648 - \frac{y}{100} \times 648 = 550.80$$

$$1 - \frac{y}{100} = 550.80/648$$

$$y = 0.15 \times 100 = 15\%$$

So 2nd discount = 15%

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Question 108

Two pipes, P and Q can fill a cistern in 12 and 15 minutes respectively. If both are opened together and at the end of 3 minutes, the first is closed, how much longer will the cistern take to fill?

A 5 minutes

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

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

D $8\frac{3}{4}$ minutes

Answer: C

Explanation:

Let the amount of work in filling a cistern equivalent to 60 units

Pipe P takes 12 minutes to fill 60 units

P's 1 minute work = 5 units

Q takes 15 minutes to fill 60 units

Q's 1 minute work = 4 units

If both work together than (P+Q)'s 1 minute work = 9 units

they both are opened for 3 minutes and the amount of units filled = $9 \times 3 = 27$ units

Now it is given that pipe P is closed

so amount of time taken by pipe Q to fill the tank = $\frac{33}{4} = 8.25$ minutes = $8\frac{1}{4}$ minutes

Question 109

The average age of 14 girls and their teacher's age is 15 years. If the teacher's age is excluded, the average reduces by 1. What is the teacher's age?

A 32 years

B 30 years

C 29 years

D 35 years

Answer: C

Explanation:

the average age of 14 girls and teacher is given as 15 and as we know

$$\text{Average} = \frac{\text{sum of ages}}{\text{number of persons}}$$

Sum of ages of girls and teachers = $15 \times 15 = 225$ years

Now the age of teacher is excluded and as a result the average reduced by 1 .So

New average = 14

New number of persons = 14

Hence new sum of ages after exclusion of teacher = $14 \times 14 = 196$

Hence age of teacher = $225 - 196 = 29$ years

Question 110

The square root of $33 - 4\sqrt{35}$ is :

A $\pm(2\sqrt{7} + \sqrt{5})$

B $\pm(\sqrt{7} + 2\sqrt{5})$

C $\pm(\sqrt{7} - 2\sqrt{5})$

D $\pm(2\sqrt{7} - \sqrt{5})$

Answer: D

Explanation:

To find : $\sqrt{33 - 4\sqrt{35}}$

We can write it as :

$$= \sqrt{33 - 2 * 2 * \sqrt{7} * \sqrt{5}}$$

Since, $(a^2 + b^2 - 2ab) = (a - b)^2$

$$= \sqrt{(2\sqrt{7})^2 + (\sqrt{5})^2 - 2 * 2\sqrt{7} * \sqrt{5}}$$

$$= \sqrt{(2\sqrt{7} - \sqrt{5})^2}$$

$$= \pm(2\sqrt{7} - \sqrt{5})$$

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Question 111

The cost of manufacture of an article was 900. The trader wants to gain 25% after giving a discount of 10%. The marked price should be :

- A 1250
- B 1200
- C 1000
- D 1500

Answer: A

Explanation:

Cost price = 900

Profit earned by trader by selling at 25% profit = $\frac{25}{100} * 900 = 225$

=> Price at which he should sell = $900 + 225 = 1125$

Discount % = 10%

Let M.P. = x

$$\Rightarrow \frac{x - 1125}{x} * 100 = 10$$

$$\Rightarrow 9x = 11250$$

$$\Rightarrow x = 1250$$

Question 112

Three sides of a triangular field are of length 15 m, 20 m and 25 m long respectively. Find the cost of sowing seeds in the field at the rate of 5 rupees per sq.m.

- A 300
- B 600
- C 750
- D 150

Answer: C

Explanation:

Sides of triangle are 15, 20, 25 m

$$\text{Since, } 15^2 + 20^2 = 225 + 400 = 625 = 25^2$$

=> The given sides are of right angled triangle.

=> Area of triangular field = $\frac{1}{2} * 15 * 20 = 150m^2$

=> Cost of sowing seeds = $5 * 150 = \text{Rs. } 750$

Question 113

If $a^2 + 1 = a$, then the value of $a^{12} + a^6 + 1$ is :

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

Answer: D

Explanation:

Expression : $a^2 + 1 = a$

=> $a^2 - a + 1 = 0$

Multiplying by $(a + 1)$ on both sides

=> $(a + 1)(a^2 - a + 1) = 0$

=> $a^3 + 1^3 = 0$

=> $a^3 = -1$

To find : $a^{12} + a^6 + 1$

= $(a^3)^4 + (a^3)^2 + 1$

= $(-1)^4 + (-1)^2 + 1$

= $1 + 1 + 1 = 3$

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Question 114

A, B, C and D purchase a gift worth 60. A pays 1/2 of what others are paying, B pays 1/3 rd of what others are paying and C pays 1/4 th of what others are paying. What is the amount paid by D?

- A 16
- B 13
- C 14
- D 15

Answer: B

Explanation:

It is given that together A B C D contributed Rs 60

So $A+B+C+D = 60$

It is given that A contributed half of what B , C ,D pays . So , assume B,C,D pays Rs y and hence amount payed by A is Rs $y/2$

$$y + \frac{y}{2} = 60$$

$$y = 40 ,$$

$$\text{amount paid by A} = \frac{y}{2} = 20$$

It is given that B contributed $\frac{1}{3}$ rd of what A, C, D pays. So, assume A, C, D pays Rs z and hence amount paid by B is Rs $\frac{z}{3}$

$$z + \frac{z}{3} = 60$$

$$z = 45$$

$$\text{amount paid by B} = \frac{z}{3} = \text{Rs } 15$$

It is given that C contributed $\frac{1}{4}$ th of what A, B, D pays. So, assume A, B, D pays Rs m and hence amount paid by C is Rs $\frac{m}{4}$

$$m + \frac{m}{4} = 60$$

$$m = 48$$

$$\text{amount paid by C} = \frac{m}{4} = \text{Rs } 12$$

$$\text{So amount paid by D} = 60 - (12 + 15 + 20) = \text{Rs } 13$$

Question 115

If $a * b = a + b + \frac{a}{b}$, then the value of $12 * 4$ is :

- A 20
- B 21
- C 43
- D 19

Answer: D

Explanation:

$$\text{If } a * b = a + b + \frac{a}{b}$$

$$\Rightarrow 12 * 4 = 12 + 4 + \frac{12}{4}$$

$$= 16 + 3 = 19$$

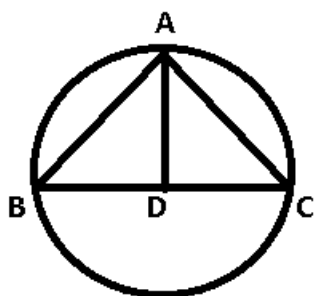
Question 116

If the median drawn on the base of a triangle is half its base, the triangle will be:

- A right-angled
- B acute-angled
- C obtuse-angled
- D equilateral

Answer: A

Explanation:



The median AD drawn on the base BC of $\triangle ABC$ is equal to half of BC

=> AD = BD = BC

Here, we can consider D as centre of circle with A,B and C lying on the circumference of circle

=> BC is diameter which subtends an angle of 90.

=> ABC is right angled triangle.

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Question 117

Taking any three of the line segments out of segments of length 2 cm, 3 cm, 5 cm and 6 cm, the number of triangles that can be formed is :

A 3

B 2

C 1

D 4

Answer: B

Explanation:

We have to select three values out of the four length values given so that sum of any two values in the chosen set is larger than the third value.

=> Three out of four combination problem and we can choose in $C_3^4 = 4$ ways.

But because of the triangle formation constraint, sides 2cm, 3cm can't be taken together in any choice.

This reduces number of combinations by 2, [2, 3, 5] and [2, 3, 6]

=> The only two possibilities, [2, 5, 6] and [3, 5, 6].

Ans - (B)

Question 118

If $x^2 + y^2 + z^2 = 2(x - y - z) - 3$, then the value of $2x - 3y + 4z$ is [Assume that x, y, z are all real numbers] :

A 9

B 1

C 3

D 0

Answer: B

Explanation:

Expression : $x^2 + y^2 + z^2 = 2(x - y - z) - 3$

=> $x^2 - 2x + y^2 + 2y + z^2 + 2z + 3 = 0$

=> $(x^2 - 2x + 1) + (y^2 + 2y + 1) + (z^2 + 2z + 1) = 0$

=> $(x - 1)^2 + (y + 1)^2 + (z + 1)^2 = 0$

=> $x = 1, y = -1, z = -1$

To find : $2x - 3y + 4z$

= $(2 * 1) - (3 * -1) + (4 * -1)$

= $2 + 3 - 4 = 1$

Question 119

A swimmer swims from a point A against a current for 5 minutes and then swims backwards in favour of the current for next 5 minutes and comes to the point B. If $AB = 100$ metres, the speed of the swimmer (in km per hour) is :

- A 0.4
- B 0.2
- C 1
- D 0.6

Answer: D

Explanation:

Let the speed of the swimmer be S and current be X .

$$5(S-X) + 5(S+X) = 100$$

$$\Rightarrow 10S = 100$$

$$S = 10 \text{ m/min} = 600 \text{ m/hour} = 0.6 \text{ kmph.}$$

Option D is the right answer.

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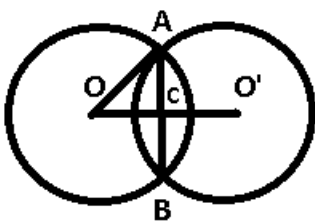
Question 120

Two circles of same radius 5 cm, intersect each other at A and B. If $AB = 8$ cm, then the distance between the centres is :

- A 6 cm
- B 8 cm
- C 10 cm
- D 4 cm

Answer: A

Explanation:



AB is chord to each of the circle and $AB = 8$ cm

Radius of each circle = 5 cm

A line drawn from the centre of the circle perpendicular to the chord bisects it in two parts.

$$\Rightarrow AC = 8/2 = 4 \text{ cm}$$

Now, in $\triangle OAC$

$$\Rightarrow OC = \sqrt{(OA)^2 - (AC)^2}$$

$$\Rightarrow OC = \sqrt{25 - 16} = \sqrt{9}$$

$$\Rightarrow OC = 3 \text{ cm}$$

$$\Rightarrow OO' = 2 \times 3 = 6 \text{ cm}$$

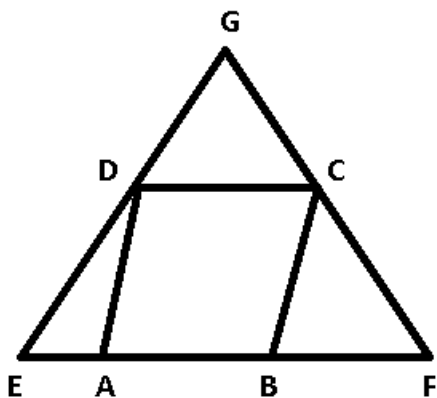
Question 121

ABCD is a rhombus. AB is produced to F and BA is produced to E such that $AB = AE = BF$. Then :

- A $ED > CF$
- B $ED \perp CF$
- C $ED^2 + CF^2 = EF^2$
- D $ED \parallel CF$

Answer: B

Explanation:



ABCD is a rhombus and $AB = AE = BF$

$\Rightarrow AD = AE$ and $BC = BF$

$\Rightarrow \angle AED = \angle ADE$ and $\angle BCF = \angle BFC$

Let $\angle DAB = 2\theta$ and $\angle ABC = 2\alpha$

Using exterior angle property, we get :

$\Rightarrow \angle AED = \angle ADE = \theta$

and $\angle BCF = \angle BFC = \alpha$

Also, in ABCD

$\Rightarrow \angle DAB + \angle ABC = 180$

$\Rightarrow 2\theta + 2\alpha = 180$

$\Rightarrow \theta + \alpha = 90$

Now, in $\triangle GEF$

$\Rightarrow \angle G + \theta + \alpha = 180$

$\Rightarrow \angle G = 180 - 90 = 90$

$\Rightarrow ED \perp CF$

Question 122

The radius of the circumcircle of a right angled triangle is 15 cm and the radius of its inscribed circle is 6 cm. Find the sides of the triangle.

- A 30, 40, 41
- B 18, 24, 30

C 30, 24, 25

D 24, 36, 20

Answer: B

Explanation:

Circumradius = 15 cm and inradius = 6 cm

Let sides be a,b,c

Since, it's a right triangle, => Circumradius lies on the mid point of hypotenuse

=> length of hypotenuse(c) = $15 \times 2 = 30$ cm

The sum of the other two sides of a right triangle is equal to twice the sum of inradius and circumradius.

$$\Rightarrow (a + b) = 2(15 + 6)$$

$$\Rightarrow a+b = 42 \text{ -----Eqn(1)}$$

Now, sum of all sides = $42+30 = 72$ cm

Product of the two sides(other than hypotenuse) is equal to the product of inradius and sum of all three sides.

$$\Rightarrow ab = 6 \times 72$$

$$\Rightarrow ab = 432 \text{ -----Eqn(2)}$$

From eqn(1) and (2)

$$\Rightarrow a = 18 \text{ or } b = 24 \text{ (or vice versa)}$$

=> Sides are = 18,24,30

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Question 123

Find the maximum number of trees which can be planted, 20 metres apart, on the two sides of a straight road 1760 metres long

A 180

B 178

C 174

D 176

Answer: B

Explanation:

To understand this, let's focus on one side to begin with.

If the straight road was 20 meters, you could have planted two trees.

If it was 40 meters, you could have planted three trees

If it was 'n' meters, you could have planted $\left(\frac{n}{20} + 1\right)$ trees

$$\text{Number of trees that can be planted on one side} = \frac{1760}{20} + 1 = 88 + 1 = 89$$

$$\text{Total trees} = 89 \times 2 = 178$$

Question 124

A contractor undertook to finish a certain work in 124 days and employed 120 men. After 64 days, he found that he had already done $\frac{2}{3}$ of the work. How many men can be discharged now so that the work may finish in time ?

A 96

- B 56
- C 80
- D 50

Answer: B

Explanation:

Let's assume the number of men discharged after 64 is y .

$$\frac{M1 \times D1}{W1} = \frac{M2 \times D2}{W2}$$

$$64 \times \frac{120}{3} = \frac{(124-64) \times (120-y)}{3}$$

$$64 \times \frac{120}{2} = \frac{60 \times (120-y)}{1}$$

$$64 \times 60 = \frac{60 \times (120-y)}{1}$$

$$64 = 120 - y$$

$$y = 120 - 64 = 56$$

Question 125

If the lengths of the sides of a triangle are in the ratio 4 : 5 : 6 and the inradius of the triangle is 3 cm, then the altitude of the triangle corresponding to the largest side as base is :

- A 7.5 cm
- B 6 cm
- C 10cm
- D 8 cm

Answer: A

Explanation:

Let the sides of triangle be $4x$, $5x$ and $6x$

$$\text{Inradius}(r) = 3 \text{ cm and semi perimeter}(s) = \frac{4x+5x+6x}{2} = 7.5x$$

$$\Rightarrow \text{Area of triangle} = r * s = 22.5x$$

Let altitude be h

$$\text{Also area} = \frac{1}{2} * 6x * h = 22.5x$$

$$\Rightarrow h = \frac{22.5}{3} = 7.5 \text{ cm}$$

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Question 126

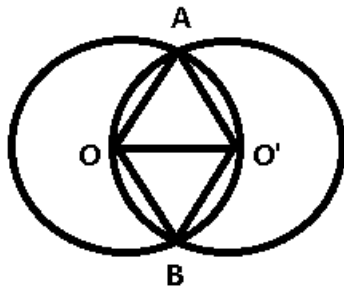
Each of the two circles of same radius a passes through the centre of the other; If the circles cut each other at the points A and B and O, O' be their centres, area of the quadrilateral AOB O' is :

- A $\frac{\sqrt{3}}{2} a^2$
- B a^2
- C $\frac{1}{4} a^2$

D $\frac{1}{2}a^2$

Answer: A

Explanation:



Let the radius of each circle be a

In $\triangle OAO'$

$\Rightarrow OO' = OA = O'A = a$

$\Rightarrow \triangle OAO'$ is equilateral triangle.

Similarly, $\triangle OBO'$ is equilateral triangle

$\Rightarrow \text{ar}(\text{AOBO}') = \triangle OAO' + \triangle OBO'$

$$= 2 * \frac{\sqrt{3}}{4} a^2$$

$$= \frac{\sqrt{3}}{2} a^2$$

Question 127

The arithmetic mean of the scores of a group of students in a test was 52. The brightest 20% of them secured a mean score of 80 and the dullest 25%, a mean score of 31. The mean score of remaining 55% is :

A 50%

B 51.4% approx.

C 54.6% approx.

D 45%

Answer: B

Explanation:

Let the total number of people be 100 and total marks be 100.

Average = 52 \Rightarrow Total = 5200

Average of brightest 20 = 80 \Rightarrow Total marks scored by brightest 20 = 80*20 = 1600

Average of dullest 25 = 31. \Rightarrow Total marks scored by dullest 25 = 25*31 = 775

Marks scored by remaining 55 = 5200 - 1600 - 775 = 2825

Average = 2825/55 = 51.4 % (Approx.)

Option B is the right answer.

Question 128

In a $\triangle ABC$ $\angle A : \angle B : \angle C = 2 : 3 : 4$. A line CD drawn \parallel to AB, then the $\angle ACD$ is :

A 40°

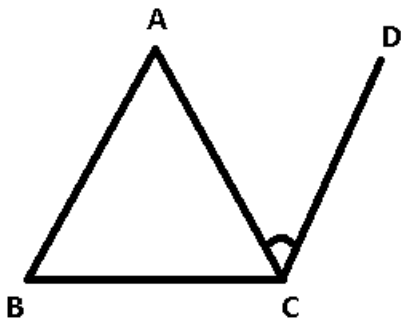
B 60°

C 80°

D 20°

Answer: A

Explanation:



Let angles of $\triangle ABC$ be $\angle A = 2\theta$, $\angle B = 3\theta$ and $\angle C = 4\theta$

$$\Rightarrow \angle A + \angle B + \angle C = 180^\circ$$

$$\Rightarrow 2\theta + 3\theta + 4\theta = 180^\circ$$

$$\Rightarrow \theta = \frac{180}{9} = 20^\circ$$

$$\Rightarrow \angle A = 2 \times 20 = 40^\circ$$

Since, $AB \parallel CD$

$$\Rightarrow \angle ACD = \angle BAC \text{ [Alternate angles]}$$

$$\Rightarrow \angle ACD = 40^\circ$$

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Question 129

The curved surface area and the total surface area of a cylinder are in the ratio 1:2. If the total surface area of the right cylinder is 616 cm, then its volume is :

A 1232cm^3

B 1848cm^3

C 1632cm^3

D 1078cm^3

Answer: D

Explanation:

Let radius of cylinder be r and height be h

$$\Rightarrow \frac{2\pi rh}{2\pi rh + 2\pi r^2} = \frac{1}{2}$$

$$\Rightarrow \frac{h}{h+r} = \frac{1}{2}$$

$$\Rightarrow h = r$$

$$\text{Total surface area} = 2\pi rh + 2\pi r^2 = 616$$

$$\Rightarrow 2\pi r^2 + 2\pi r^2 = 616$$

$$\Rightarrow r^2 = \frac{154 \times 7}{22}$$

$$\Rightarrow r = 7 = h$$

Now, volume of cylinder = $\pi r^2 h$

$$= \frac{22}{7} * 7^2 * 7$$

$$= 1078 \text{ cm}^3$$

Question 130

A person observed that he required 30 seconds less time to cross a circular ground along its diameter than to cover it once along the boundary. If his speed was 30 m/minute, then the radius of the circular ground is (Take $\pi = \frac{22}{7}$)

A 5.5 m

B 7.5 m

C 10.5 m

D 3.5 m

Answer: D

Explanation:

Let the radius of circular ground be r and his speed is 30 m/min

$$\Rightarrow \text{Time required to cross along diameter} = \frac{2r}{30}$$

$$\text{Time required to cross along boundary} = \frac{2\pi r}{30}$$

Acc. to ques :

$$\Rightarrow \frac{2\pi r}{30} - \frac{2r}{30} = \frac{30}{60}$$

$$\Rightarrow \pi r - r = \frac{15}{2}$$

$$\Rightarrow r = \frac{15 * 7}{2 * 15} = 3.5 \text{ m}$$

Question 131

If $a + b + c = 0$, then the value $\left(\frac{a+b}{c} + \frac{b+c}{a} + \frac{c+a}{b}\right) \left(\frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b}\right)$ is:

A 8

B -3

C 9

D 0

Answer: C

Explanation:

Given : $a + b + c = 0$

Let $a = 1, b = 1$ and $c = -2$ [We can take any values that satisfy above equation]

$$\text{To find : } \left(\frac{a+b}{c} + \frac{b+c}{a} + \frac{c+a}{b}\right) \left(\frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b}\right)$$

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

$$= (-3)(-3) = 9$$

Question 132

A sum of money is sufficient to pay A's wages for 21 days and B's wages for 28 days. The same money is sufficient to pay the wages of both for

A $12\frac{1}{4}$ days

B 14 days

C $24\frac{1}{4}$ days

D 12 days

Answer: D

Explanation:

the lcm of 21,28 = 84

lets assume amount of money to be 84 units

wage of A per day = $\frac{84}{21} = 4$ units

wage of B per day = $\frac{84}{28} = 3$ units

wage per day of A+B = 4+3 = 7 units

total days sufficient are = $\frac{84}{7} = 12$ days

Question 133

Arvind purchased a wrist watch with 30% discount on the labelled price. He sold it with 40% profit on the price he bought. What was his percent loss on the labelled price?

A 2

B 6

C 4

D 8

Answer: A

Explanation:

Let marked price = $100x$

Discount amount = $\frac{30}{100} * 100x = 30x$

=> Cost price for Arvind = $100x - 30x = 70x$

Profit gained by Arvind = $\frac{40}{100} * 70x = 28x$

=> Selling price for Arvind = $70x + 28x = 98x$

Now, % loss on labelled/marked price = $\frac{100x - 98x}{100x} * 100 = 2\%$

Question 134

ABC is an isosceles triangle with AB = AC. A circle through B touching AC at the middle point intersects AB at P. Then AP : AB is :

A 4 : 1

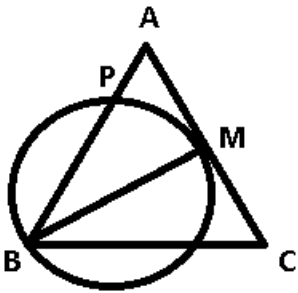
B 2 : 3

C 3 : 5

D 1 : 4

Answer: D

Explanation:



Here, AM is tangent to the circle and APB is secant to the circle. Thus by tangent theorem :

$$\Rightarrow AM^2 = AP \times AB$$

$$\text{Also, } AM = \frac{AC}{2} = \frac{AB}{2}$$

$$\Rightarrow \left(\frac{AB}{2}\right)^2 = AP \times AB$$

$$\Rightarrow \frac{AP}{AB} = \frac{1}{4}$$

\Rightarrow Required ratio = 1 : 4

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Question 135

A man standing in one corner of a square football field observes that the angle subtended by a pole in the corner just diagonally opposite to this corner is 60° . When he retires 80 m from the corner, along the same straight line, he finds the angle to be 30° . The length of the field, in m, is :

A 40

B $20\sqrt{2}$

C 20

D $40\sqrt{2}$

Answer: B

Explanation:

The diagonal 'd' of the football field will be the adjacent side. The height of pole, h, will be the opposite side.

According to the given conditions,

$$h = d \tan 60 \text{ and}$$

$$h = (d+80) \tan 30$$

Equationg, we get,

$$d \tan 60 = d \tan 30 + 80 \tan 30$$

$$d (\tan 60 - \tan 30) = 80 \tan 30$$

On substituting the values of $\tan 30$ and $\tan 60$, we get,

$$2d = 80$$

$$d = 40 \text{ m.}$$

We know that $\text{side} \times \sqrt{2} = 40$

$$\Rightarrow \text{Side} = 20\sqrt{2}.$$

Option B is the right answer.

Question 136

If a, b, c are non-zero, $a + \frac{1}{b} = 1$ and $b + \frac{1}{c} = 1$ then the value of abc is :

- A -1
- B 3
- C -3
- D 1

Answer: A

Explanation:

It is given that : $b + \frac{1}{c} = 1$

$$\Rightarrow b = \left(1 - \frac{1}{c}\right) \text{-----Eqn(1)}$$

Also, $a + \frac{1}{b} = 1$

$$\Rightarrow a = 1 - \frac{1}{b}$$

$$\Rightarrow a = 1 - \frac{1}{1 - \frac{1}{c}} \text{ [Using Eqn(1)]}$$

$$\Rightarrow a = \left(1 - \frac{c}{c-1}\right) \text{-----Eqn(2)}$$

To find : abc

Using eqn(1) and (2)

$$= \left(1 - \frac{c}{c-1}\right) \left(1 - \frac{1}{c}\right) (c)$$

$$= \left(\frac{-1}{c-1}\right) \left(\frac{c-1}{c}\right) (c)$$

$$= -1$$

Question 137

A, B, C walk 1 km in 5 minutes, 8 minutes and 10 minutes respectively. C starts walking from a point, at a certain time, B starts from the same point 1 minutes later and A starts from the same point 2 minutes later than C. Then A meets B and C at times.

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

Answer: A

Explanation:

Speed of A = $1000\text{m} / 5 = 200\text{m}/\text{min}$

Speed of B = $1000/8 = 125\text{ m}/\text{min}$

Speed of C = $1000/10 = 100\text{ m}/\text{min}$

A starts 2 minutes later than C. Hence, C would have covered 200m during this time. A will catch up this 200 m in 2 minutes after he starts to walk. A will meet C after 2 minutes.

B would have covered 125m by the time A starts to walk. A will cover those 125m in 5/3 minutes after he starts to walk ($125 / (200 - 125)$). Hence, option A is the right answer.

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Question 138

Value of $(\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 89^\circ)$ is :

- A 1
- B 89
- C undefined
- D 0

Answer: A

Explanation:

We need to find the value of : $\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 88^\circ \tan 89^\circ$
 $= \tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 43^\circ \tan 44^\circ \tan 45^\circ \cot 44^\circ \cot 43^\circ \dots \cot 2^\circ \cot 1^\circ$
 As we know $\tan 1^\circ \times \cot 1^\circ = \tan 2^\circ \times \cot 2^\circ = \dots = \tan 44^\circ \times \cot 44^\circ = 1$
 and $\tan 45^\circ = 1$
 hence ,
 $\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 88^\circ \tan 89^\circ = 1$

Question 139

The greatest common divisor of $3^{333} + 1$ and $3^{334} + 1$ is :

- A 2
- B 1
- C $3^{333} + 1$
- D 20

Answer: C

Explanation:

Let $X = 3^{333} + 1$

$\Rightarrow X - 1 = 3^{333}$

Let $Y = 3^{334} + 1$

$Y - 1 = 3^{334}$

$Y - 1 = (3^{333})^3$

$\Rightarrow (Y - 1) = (X - 1)^3$

On expanding, The 1s on both sides will get cancelled. Y can be represented in terms of X. This clearly indicates that X is a factor of Y.

Therefore, the HCF is $3^{333} + 1$

Option C is the right answer.

Question 140

The value of a machine depreciates every year at the rate of 10% on its value at the beginning of that year. If the current value of the machine is ₹ 729, its worth 3 years ago was:

- A 1000
- B 750.87

C 947.10

D 800

Answer: A

Explanation:

Let the value of the machine 3 years ago be $100x$

Since, every year value decreases by 10%

$$\Rightarrow \text{Current value} = (0.9)^3 * 100x = 729$$

$$\Rightarrow 100x = \frac{729}{0.729} = 1000$$

$$\Rightarrow x = 10$$

$$\Rightarrow \text{Value 3 years ago} = \text{Rs. } 1,000$$

SSC CGL Important Questions PDF

Question 141

A person bought two bicycles for 1600 and sold the first at 10% profit and the second at 20% profit. If he sold the first at 20% profit and the second at 10% profit, he would get 5 more. The difference of the cost price of the two bicycles was

A 50

B 40

C 25

D 75

Answer: A

Explanation:

Let C.P. of first bicycle = $100x$

$$\Rightarrow \text{C.P. of second bicycle} = 1600 - 100x$$

case 1 : First at 10% profit and second at 20%

$$\Rightarrow \text{Profit on first bicycle} = \frac{10}{100} * 100x = 10x$$

$$\text{and Profit on second bicycle} = \frac{20}{100} * (1600 - 100x) = 320 - 20x$$

$$\Rightarrow \text{Total profit in case 1} = 10x + 320 - 20x = 320 - 10x$$

case 2 : First at 20% profit and second at 10%

$$\Rightarrow \text{Profit on first bicycle} = \frac{20}{100} * 100x = 20x$$

$$\text{and Profit on second bicycle} = \frac{10}{100} * (1600 - 100x) = 160 - 10x$$

$$\Rightarrow \text{Total profit in case 2} = 20x + 160 - 10x = 160 + 10x$$

Now, according to the question :

$$\Rightarrow 320 - 10x + 5 = 160 + 10x$$

$$\Rightarrow 20x = 165 \Rightarrow x = 82.5$$

$$\text{C.P. of bicycle 1} = 82.5 * 100 = 825$$

$$\text{C.P. of bicycle 2} = 1600 - 825 = 775$$

$$\Rightarrow \text{Difference in cost prices} = 825 - 775 = 50$$

Question 142

If $\cos x + \cos^2 x = 1$, the numerical value of $(\sin^{12} x + 3\sin^{10} x + 3\sin^5 x + \sin^6 x - 1)$ is :

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

Answer: C

Explanation:

given that : $\cos x + \cos^2 x = 1$

$$\cos x + \cos^2 x = \sin^2 x + \cos^2 x$$

$$\sin^2 x = \cos x \dots\dots(1)$$

Now we need to find value of :

$$(\sin^{12} x + 3\sin^{10} x + 3\sin^5 x + \sin^6 x - 1)$$

$$\text{Usng equation 1 , } (\sin^{12} x + 3\sin^{10} x + 3\sin^5 x + \sin^6 x - 1) = (\cos^6 x + 3\cos^5 x + 3\sin^5 x + \sin^6 x - 1)$$

$$= 1 + 3 - 1$$

$$= 3$$

Question 143

The price of. sugar having gone down by 10%, a consumer can buy 5 kg more sugar for 270.The difference between the original and reduced price per kg is :

- A 75 paise
- B 53 paise
- C 62 paise
- D 60 paise

Answer: D

Explanation:

let the original price of sugar be y Rs and the original amount purchased be m Kg

$$\text{Total cost} = \text{Rs } y \times m = \text{Rs } ym$$

Now the price of sugar is decreased by 10% so .

$$\text{New price} = 0.9 \times y = 0.9y$$

$$\text{New quantity purchased} = (m + 5) \text{kg}$$

$$\text{New cost} = 0.9y \times (m+5) = 0.9ym + 4.5y$$

As both cost are same so ,

$$0.9ym + 4.5y = ym$$

$$0.1ym = 4.5y$$

$$m = 45 \text{kg}$$

$$\text{It is given that } 0.9ym + 4.5y = 270$$

$$y = \text{Rs } 6$$

$$\text{New cost} = 0.9y = \text{Rs } 5.4$$

So difference between new and old cost = 60 paise

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Question 144

The table given below shows production of five types of cars by a company from the year 1998 to 2003. Study the table and answer the question.

Years/Types	1998	1999	2000	2001	2002	2003	Total
P	10	18	16	15	11	18	88
Q	14	12	13	12	11	14	76
R	16	20	14	13	15	12	90
S	5	8	12	14	20	31	90
T	26	18	24	20	23	21	132
Total	71	76	79	74	80	96	476

In which year the production of cars of all types taken together was approximately equal to the average of the total production during the period :

- A 1999
- B 2000
- C 2002
- D 1998

Answer: B

Explanation:

No. of cars produced in :

1998 = 71

1999 = 76

2000 = 79

2001 = 74

2002 = 80

2003 = 96

=> Total cars produced = 476

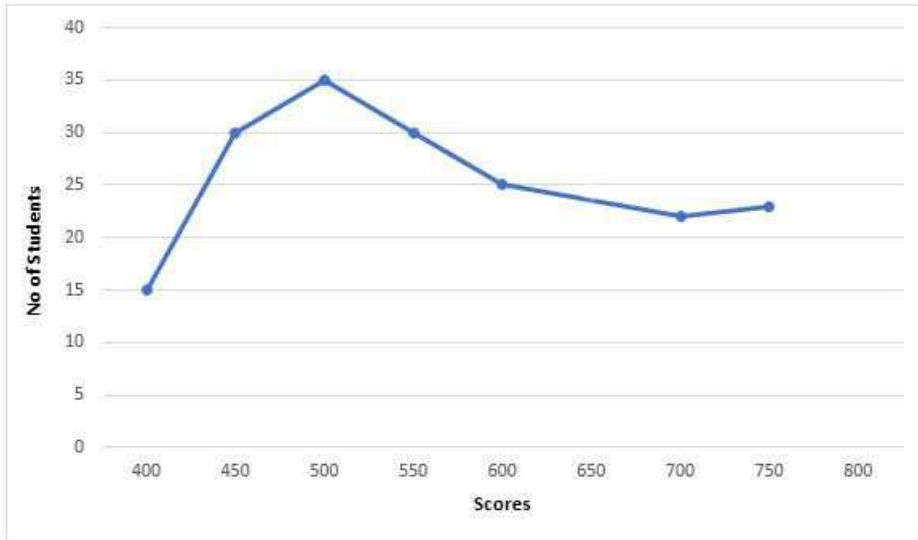
=> Average of total production during the period = $476/6 = 79.33$

= ~79

The average is approx. equal to the production in the year **2000**

Question 145

The adjoining diagram is frequency polygon for the scores of students in a test. What is the total number of students appeared in the test ?



- A 180
- B 200
- C 250
- D 150

Answer: A

Explanation:

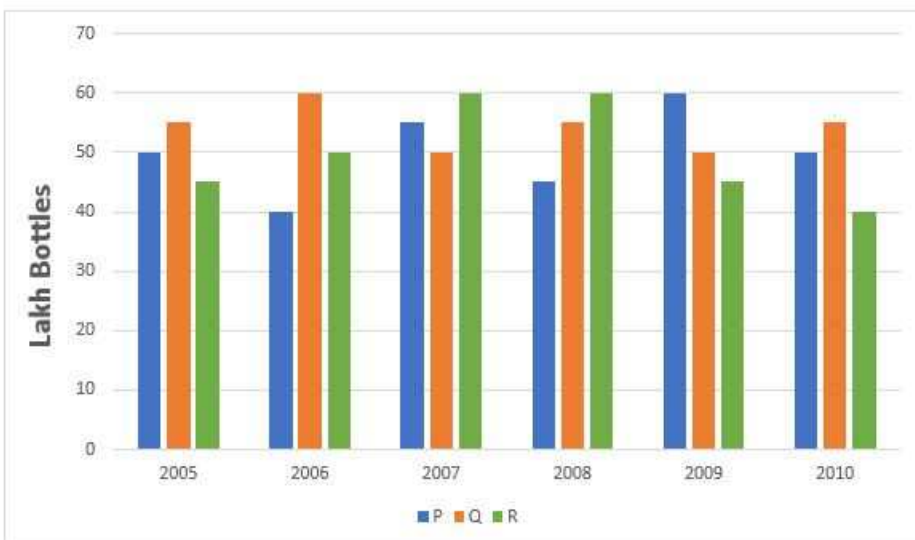
Total no of students appeared in the test

$$= 15 + 30 + 35 + 30 + 25 + 22 + 23$$
$$= 180$$

Instructions

A health drink company prepares the drinks of three different flavours P, Q, R. The production of three flavours over a period of six years has been expressed on bar graph provided below. Study the graph and answer the questions.

(Production of 3 different flavours of health drinks of a company in 6 years in Lakh bottles)



Question 146

In which of the following years the percentage of rise or fall in production from the previous year is maximum for the flavour of Q?

- A 2007
- B 2009
- C 2010
- D 2006

Answer: A

Explanation:

Number of drinks produced of flavour Q (in lakhs) in :

2005 = 55

2006 = 60

2007 = 50

2008 = 55

2009 = 50

2010 = 55

$$\begin{aligned} \Rightarrow \% \text{ fall or rise in 2006 from the previous year} &= \frac{60-55}{55} * 100 \\ &= \frac{5}{55} * 100 = 9.09\% \end{aligned}$$

$$\begin{aligned} \Rightarrow \% \text{ fall or rise in 2007 from the previous year} &= \frac{60-50}{60} * 100 \\ &= \frac{10}{6} * 100 = 16.67\% \text{ [MAX]} \end{aligned}$$

$$\begin{aligned} \Rightarrow \% \text{ fall or rise in 2008 from the previous year} &= \frac{55-50}{50} * 100 \\ &= \frac{5}{50} * 100 = 10\% \end{aligned}$$

$$\begin{aligned} \Rightarrow \% \text{ fall or rise in 2009 from the previous year} &= \frac{55-50}{55} * 100 \\ &= \frac{5}{55} * 100 = 9.09\% \end{aligned}$$

$$\begin{aligned} \Rightarrow \% \text{ fall or rise in 2010 from the previous year} &= \frac{55-50}{55} * 100 \\ &= \frac{5}{55} * 100 = 9.09\% \end{aligned}$$

Ans - (A)

General Science Notes for SSC CGL

Question 147

The percentage of the total production of flavour R in 2007 and 2008 with respect to the production of flavour P in 2005 and 2006 is :

- A 102.25%
- B 115.35%
- C 133.33%
- D 97.67%

Answer: C

Explanation:

Production of drinks of flavour R in 2007 = 60

Production of drinks of flavour R in 2008 = 60

=> Production of R in 2007 and 2008 = 60+60 = 120

Production of drinks of flavour P in 2005 = 50

Production of drinks of flavour P in 2006 = 40

=> Production of P in 2005 and 2006 = 50+40 = 90

Required % = $\frac{120}{90} * 100 = 133.33\%$

Question 148

The average annual production of which flavour was maximum in the given period ?

- A P and Q both
- B Q only
- C P and R both
- D P only

Answer: B

Explanation:

Total production of drinks of flavour P = 50+40+55+45+60+50 = 300

=> Average production = 300/6 = 50

Total production of drinks of flavour Q = 55+60+50+55+50+55 = 325

=> Average production = 325/6 = 54.16 [MAX]

Total production of drinks of flavour R = 45+50+60+60+45+40 = 300

=> Average production = 300/6 = 50

Thus, average production is maximum for only Q.

Question 149

What was the approximate decline in the production of flavour R in 2010 as compared to the production of 2008 in percentage ?

- A 43.33%
- B 33.33%
- C 30.33%
- D 53.33%

Answer: B

Explanation:

Production of flavour R in 2008 = 60

Production of flavour R in 2010 = 40

=> % decline in production = $\frac{60-40}{60} * 100$

= $\frac{20}{60} * 100 = 33.33\%$

Question 150

What is the difference between the average production of flavour Q in 2008, 2009 and 2010 from that of flavour P in 2005, 2006 and 2007 in lakh bottles is :

- A 50
- B 0.5
- C 5.5
- D 5

Answer: D

Explanation:

Production of flavour Q in 2008, 2009 and 2010 = $55+50+55 = 160$

=> Average production = $160/3 = 53.33$

Production of flavour P in 2005, 2006 and 2007 = $50+40+55 = 145$

=> Average production = $145/3 = 48.33$

Required difference = $53.33 - 48.33 = 5$

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Reasoning

Instructions

For the following questions answer them individually

Question 151

UMPIRE : GAME :: ?

- A Legislator : election
- B Moderator : debate
- C Prodigy : wonder
- D Chef : banquet

Answer: B

Explanation:

An umpire is the official who arbitrates a game, similarly a moderator is an official arbitrator of a debate.

=> Ans - (B)

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Question 152

HCM : FAK : SGD : ?

- A ESQ
- B GES
- C QEB

D QIB

Answer: C

Explanation:

Expression = HCM : FAK

The pattern followed is :

H	C	M
(-2)	(-2)	(-2)
F	A	K

Similarly, for SGD :

S	G	D
(-2)	(-2)	(-2)
Q	E	B

=> Ans - (C)

Question 153

FILM: ADGH :: MILK : ?

A HDGE

B HDGF

C HEGF

D ADGF

Answer: B

Explanation:

Expression = FILM: ADGH

The pattern followed is :

F	I	L	M
(-5)	(-5)	(-5)	(-5)
A	D	G	H

Similarly, for MILK :

M	I	L	K
(-5)	(-5)	(-5)	(-5)
H	D	G	F

=> Ans - (B)

Question 154

AHOP:CKSU::BJMF : ?

A DQKM

B CJWM

C EZUQ

D DMQK

Answer: D

Explanation:

Expression = AHOP:CKSU

The pattern followed is :

A	H	O	P
(+2)	(+3)	(+4)	(+5)
C	K	S	U

Similarly, for BJMF :

B	J	M	F
(+2)	(+3)	(+4)	(+5)
D	M	Q	K

=> Ans - (D)

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Question 155

583 : 488 :: 293 : ?

- A 378
- B 487
- C 581
- D 291

Answer: A

Explanation:

Expression = 583 : 488 :: 293 : ?

In each of the terms, the sum of digits of the left terms is 2 more than the sum of digits of right terms.

$$5 + 8 + 3 = 16.$$

$$2 + 9 + 3 = 14.$$

So,

$$4 + 8 + 8 = 20.$$

$$3 + 7 + 8 = 18.$$

∴ The analogy pair is 583 : 293 :: 488 : 378.

=> Ans - (A)

Question 156

25 : 625 :: 35 : ?

- A 875
- B 675
- C 1575
- D 1205

Answer: A

Explanation:

Expression = 25 : 625 :: 35 : ?

The pattern followed is = $n : 25n$

$$\text{Eg} = 25 : 25 \times 25 = 25 : 625$$

$$\text{Similarly, } 35 \times 25 = 875$$

=> Ans - (A)

Question 157

Arrange the following words as per order in the dictionary

- (i) Ambitious
- (ii) Ambiguous
- (iii) Ambiguity
- (iv) Animation
- (v) Animals

- A (iii), (ii), (i), (v), (iv)
- B (iii), (ii), (iv), (v), (i)
- C (iii), (ii), (iv), (i), (v)
- D (iii), (ii), (v), (iv), (i)

Answer: A

Explanation:

As per order in the dictionary :

= Ambiguity -> Ambiguous -> Ambitious -> Animals -> Animation

≡ (iii), (ii), (i), (v), (iv)

=> Ans - (A)

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Instructions

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

Question 158

- A 240
- B 304
- C 272
- D 210

Answer: D

Explanation:

Apart from 210, all the numbers are divisible by 8, hence it is the odd one out.

=> Ans - (D)

Question 159

- A Silver
- B Platinum
- C Zinc
- D Bronze

Answer: D

Explanation:

Bronze is an alloy of Tin and Copper, while Silver, platinum and zinc are basic elements in their own right.

=> Ans - (D)

Question 160

- A MTF
- B SLE
- C RKD
- D UNG

Answer: A

Explanation:

(A) : M (+7 letters) = T (+12 letters) = F

(B) : S (-7 letters) = L (-7 letters) = E

(C) : R (-7 letters) = K (-7 letters) = D

(D) : U (-7 letters) = N (-7 letters) = G

=> Ans - (A)

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Question 161

- A CENT
- B JLOS
- C MORV
- D CEHL

Answer: A

Explanation:

(A) : C (+2 letters) = E (+9 letters) = N (+6 letters) = T

(B) : J (+2 letters) = L (+3 letters) = O (+4 letters) = S

(C) : M (+2 letters) = O (+3 letters) = R (+4 letters) = V

(D) : C (+2 letters) = E (+3 letters) = H (+4 letters) = L

=> Ans - (A)

Instructions

For the following questions answer them individually

Question 162

Which one of the given responses would be a meaningful order of the following ?

- (i) Pupa
- (ii) Larva
- (iii) Moth
- (iv) Eggs

- A (iv), (iii), (ii), (i)
- B (iv), (iii), (i), (ii)
- C (iv), (ii), (i), (iii)

D (iv), (i), (ii), (iii)

Answer: C

Explanation:

The lifecycle order, eggs become larva which becomes pupa which becomes moth.
Hence, (iv), (ii), (i), (iii)

Question 163

Which one of the given responses would be a meaningful order of the following continents in descending order of area?

- (i) South America
- (ii) Africa
- (iii) Europe
- (iv) Australia
- (v) North America

A (ii), (v), (i), (iv), (iii)

B (ii), (i), (v), (iv), (iii)

C (ii), (i), (v), (iii), (v)

D (ft), (v), a., (iii), (iv)

Answer: B

Explanation:

Africa is larger than South America is larger than North America is larger than Australia is larger than Europe
Hence, (ii), (i), (v), (iv), (iii)

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Instructions

In the following questions, a series is given, with one term missing. Choose the correct alternative from the given ones.

Question 164

17, 43, 81, 131, ?

A 300

B 193

C 375

D 468

Answer: B

Explanation:

Let the unknown term be x .

Difference between the terms is

$$43-17 = 26$$

$$81-43 = 38$$

$$131-81 = 50$$

The difference between the difference of terms is

$$38-26 = 12$$

$$50-38 = 12$$

Therefore $x=131 + 50 + 12 = 193$.

Hence Option B is the correct answer.

Question 165

X, Q, K, F, ?

A C

B D

C E

D B

Answer: D

Explanation:

The number of letters between two consecutive letters is one more than the next two consecutive letters.

The number of letters between X and Q is 6.

The number of letters between Q and K is 5.

The number of letters between F and K is 4.

The missing letter would be 3 letters behind F which is B.

hence Option D is the correct answer.

Question 166

6	15	20
8	4	5
3	5	20
51	65	?

A 120

B 51

C 12

D 56

Answer: A

Explanation:

Consider column wise.

$$6 \times 8 + 3 = 51$$

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

$$20 \times 5 + 20 = 120$$

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Question 167

16	25	9
36	64	81
10	13	?

A 12

B 13

C 14

D 11

Answer: A

Explanation:

Consider column wise,

$4^2, 6^2$. adding the bases we get , $4 + 6 = 10$

$5^2, 8^2$. adding the bases we get , $5 + 8 = 13$

$3^2, 9^2$. adding the bases we get , $3 + 9 = 12$

Question 168

5, 11, 23, 47, 95, ?

A 161

B 169

C 190

D 191

Answer: D

Explanation:

The difference between two consecutive terms is twice of the difference between the two terms.

$11-5=6$

$23-11=12$

$47-23=24$

$95-47=48$

The next term must be 96 more than 95.

The solution is 191.

Hence Option D is the correct answer.

Question 169

BEAG, DGCI, FIEK, ?

A HGKJ

B HKLJ

C HMIE

D HKGM

Answer: D

Explanation:

The first letter in each term is the second letter of the first letter of the previous term.

The second letter from F is H.

First letter of missing term is H.

The second letter in each term is the third letter from the first letter of that term.

The third letter from F is K.

Second letter of missing term is K.

The third letter in each term is the previous letter of the first letter of that term.

The previous letter of H is G.

Third letter of missing term is G.

The last letter in each term is the second letter from the second letter of that term.

The second letter from K is M.

The missing term is HKGM.

Hence Option D is the correct answer.

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Question 170

20, 29, 38, 47, ?

- A 52
- B 58
- C 59
- D 56

Answer: D

Explanation:

The difference between each term is 9.
The missing term is 56.
Hence Option D is the correct answer.

Question 171

2	9	11	7
8	5	13	-3
7	?	10	(-4)
6	4	10	?

- A 3 and 2
- B (-3) and 2
- C 3 and (-2)
- D (-3) and (-2)

Answer: C

Explanation:

Value of column 1 + value in column 2 = value in column 3
Value of column 2 + value in column 1 = value in column 4
The missing term in column 3 is 3. ($7+3=10$)
The missing term in column 4 is (-2) ($4-6 = -2$)
Hence Option C is the correct answer.

Question 172

A man travels 4 km due north, then travels 6 km due east and further travels 4km due north. How far he is from the starting point ?

- A 8 km
- B 10 km
- C 6 km
- D 14 km

Answer: B

Explanation:

the total distance traveled by the man due North is $4+4=8$ km and due east is 6km. therefore the distance of the man from the starting point will be equal to $\sqrt{8^2 + 6^2} = 10$ km. option B.

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Question 173

If MUSICAL is written as KWQKACJ, how can SPRINKLE be written ?

- A QRPKLMJG
- B UKTKPMNG
- C QRBKCNJG
- D QNPGLIJC

Answer: A

Explanation:

If MUSICAL is written as KWQKACJ, then it can be observed that if A=1, B=2 and so on and for some general word dfgjh will be represented by the word (d-2)(f+2)(g-2)(h+2)(j-2) and so on. therefore SPRINKLE will be coded as QRPKLMJG. Option A.

Question 174

Ram and Sam start walking towards North and cover 20 metres. Ram turns to his left and Sam to his right. After sometime, Rain walks 10 metres, in the same direction in which he turned. On the other hand, Sam walks only 7 metres. Later, Ram turns towards his left and Sam to his right. Both walk 25 metres forward. How far is Ram from Sam now ?

- A 17 metres
- B 5 metres
- C 10 metres
- D 20 metres

Answer: A

Explanation:

As it can be observed that they walked together for the first 20 meters, then walked in opposite directions for 10&7 meters and then turned to walk towards the same direction for 25 meters therefore the total distance between them will only be $10+7=17$ meters. option A.

Question 175

N is more intelligent than M. M is not as intelligent as Y. X is more intelligent than V but not as good as N. Who is the most intelligent of all ?

- A M
- B Y
- C N
- D X

Answer: C

Explanation:

N is more intelligent than M. i.e. $N > M$
M is not as intelligent as Y. i.e. $M < Y$

X is more intelligent than V but not as good as N .i.e $V < X < N$
Combining all , we get N is the most intelligent.

SSC CGL Tier-2 Previous Papers PDF

Instructions

In the following questions, from the given alternatives select the word which cannot be formed using letters of the given word.

Question 176

COURAGEOUS

- A COURSE
- B GRACE
- C SECURE
- D ARGUE

Answer: C

Explanation:

From the letters of the word COURAGEOUS, all the alternatives except the word SECURE can be formed because of the absence of an extra 'E'. therefore the correct answer is option C.

Question 177

SPECIFICATION

- A FAINTING'
- B TONIC
- C PACIFIC
- D FACTION

Answer: A

Explanation:

From the letters of the word SPECIFICATION, all the alternatives except FAINTING can be completely formed,because of the absence of 'G', therefore the correct answer is option A.

Question 178

If MEAT is written as TEAM, then BALE is written

- A EBLA
- B EALB
- C ELAB
- D EABL

Answer: B

Explanation:

If MEAT is written as TEAM, then it can be clearly seen that any word in this pattern ABCD will be coded as DBCA. therefore BALE will be coded as EALB. Option B.

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Question 179

If 'P' means '+', 'Q' means '×', 'R' means '÷' and 'S' means '-' then : $44 Q 9 R 12 S 6 Q 4 P 16 = ?$

- A 25
- B 112
- C 36
- D 124

Answer: A

Explanation:

for the given symbols,

$44 Q 9 R 12 S 6 Q 4 P 16$ will be translated as : $44 * 9 / 12 - 6 * 4 + 16$. which on applying the principles of BODMAS will be equal to 25. the correct answer is option A.

Question 180

There are 19 hockey players in a club. On a particular day, 14 were wearing the hockey shirts prescribed. None of them were without either hockey pants or shirts. Eleven were wearing the prescribed hockey pants. How many were in complete uniform ?

- A 6
- B 9
- C 7
- D 8

Answer: A

Explanation:

Given that 14 wear shirts and 11 wear pants.

The common ones with both shirt and pant are $(14+11) - 19 = 6$.

Question 181

If - stands for addition, ÷ for multiplication, × for subtraction, and + for division, then which of the following is correct ?

- A $25 - 15 + 5 \div 4 \times 16 = 21$
- B $25 + 11 - 4 \div 10 \times 6 = 20$
- C $25 \times 12 - 14 \div 4 + 6 = 16$
- D $25 - 12 + 14 \div 2 \times 4 = 15$

Answer: A

Explanation:

If - stands for addition, ÷ for multiplication, × for subtraction, and + for division, then :

option A: $25 - 15 + 5 \div 4 \times 16 = 21$

LHS = $25 + 15 \div 5 \times 4 - 16 = 25 + 12 - 16 = 21 = \text{RHS}$.

the correct answer is option A.

Question 182

A direction pole was situated on the Road Crossing. Due to an accident, the pole turned in such a manner that the pointer which was showing East, started showing South. Sita, a traveller went to the wrong direction thinking it to be West. In what direction actually she was travelling ?

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

Answer: C

Explanation:

it can be observed that if the direction showing EAST turned towards South then, the pole had turned 90 degrees in the CW direction. therefore if Sita went to the direction pointed as West then the actual direction will be 90 degrees CW of west which is North. the correct answer is option C.

Question 183

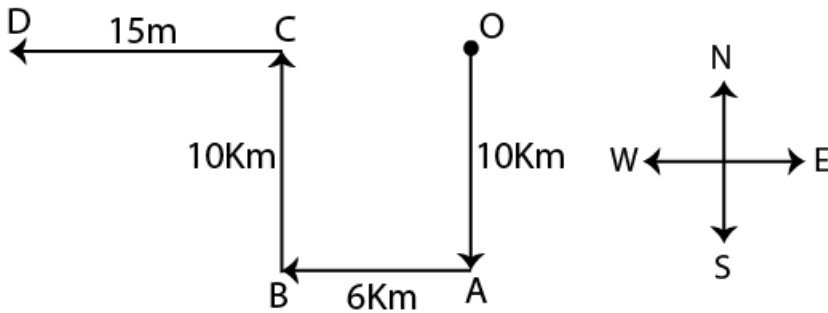
Ram cycled 10 km southward from his home, turned right and cycled 6 km, turned right, cycled 10 km, turned left and cycled 15 km. How many km will he have cycled to reach straight home ?

- A 16 km
- B 20 km
- C 10 km
- D 21 km

Answer: D

Explanation:

Ram's path can be traced as O-A-B-C-D.



as it can be observed that the distance OD=21km . therefore, the correct answer is option D.

Question 184

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

$$5 + 3 \times 8 - 12 \div 4 = 3$$

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

Answer: A

Explanation:

$5 + 3 \times 8 \div 12 + 4$ will give 3.
Hence, Option A.

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Question 185

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

$$(20 - 4) \times 4 + 16 = 36$$

- A + and -
- B 5 and 5
- C 16 and 6
- D - and \div

Answer: D

Explanation:

To get 36, we need to replace 1 with \div sign.

Question 186

If WATER is written as YCVGT, then what is written as HKTG ?

- A REFI
- B ERIF
- C IRFE
- D FIRE

Answer: D

Explanation:

If WATER is written as YCVGT, then the pattern that can be identified is that each letter is represented by the letter that comes after the letter that comes after it in the Alphabet. Similarly, HKTG can be coded as FIRE. option D.

Instructions

In the following questions, two statements are given followed by two conclusions I and II. 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 keys are locks, some locks are numbers.

II. All numbers are letters, all letters are words.

Conclusions :

I. Some words are numbers.

II. Some locks are letters.

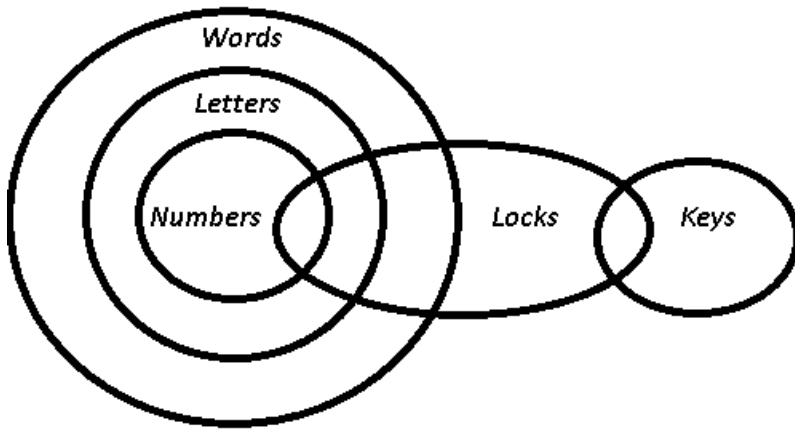
- A Conclusion I follows
- B Conclusion II follows

- C Conclusions I and II follow
- D None of the conclusion follows

Answer: C

Explanation:

The venn diagram for above statements is :



Conclusions :

- I. Some words are numbers = true
- II. Some locks are letters = true

Thus, both conclusions I and II follow

=> Ans - (C)

General Science Notes for SSC CGL

Question 188

Statements :

- I. The constitution assures the fundamental rights.
- II. Parliament has right to amend the constitution.

Conclusions :

- I. Parliament included fundamental rights in the constitution.
- II. Parliament did not assure the fundamental rights.

- A Only conclusion I follows
- B Only conclusion II follows
- C Both conclusions I and II follow
- D None of them

Answer: D

Explanation:

The given statement clearly indicates that the fundamental rights are assured by the constitution, and parliament has the right to ameliorate it. It doesn't mean that parliament included fundamental rights in the constitution, hence first conclusion does not follow.

Also, it is given that constitution assured fundamental rights, it does not mean that parliament didn't do it.

Thus, none of the conclusion follow.

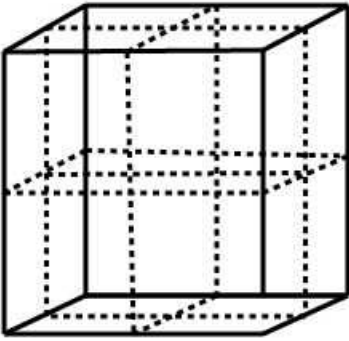
=> Ans - (D)

Instructions

For the following questions answer them individually

Question 189

A cube which is painted red on the outer surface is of 2 inches height, 2 inches wide and 2 inches across. If it is cut into one-inch cubes as shown by dotted lines, indicate the number of cubes which are red on two sides only ?



- A 4
- B 6
- C 8
- D 0

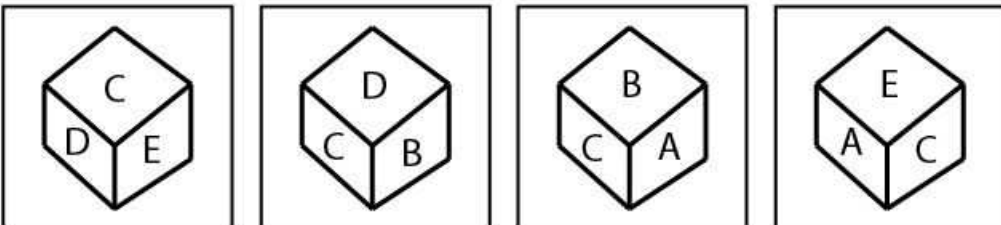
Answer: D

Explanation:

Since, all sides are painted red only, and if the cube is cut along the dotted lines, then the smaller cubes will have 3 sides common with the previous larger cube. Hence, all smaller cubes will have 3 sides painted in red.

Question 190

Four positions of dice are given below. Which letter will be opposite to D ?



- (1)
- (2)
- (3)
- (4)

- A B
- B C
- C D
- D A

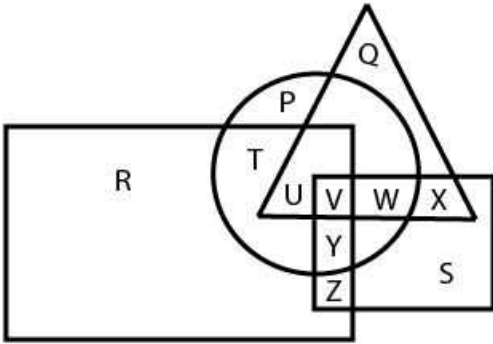
Answer: D

Explanation:

From figures 1 & 2, it is clear that C, E, B cannot be opposite to D as they are adjacent. Hence, A is opposite to D.

Question 191

In the given figure, Circle represents persons having Car, triangle represents persons having Motor Cycle, square represents persons having Autorickshaws, rectangle represents persons having Cycle. Find the region where persons having Car, Motor Cycle, Cycle but not Autorickshaw.



- A V
- B W
- C X
- D U

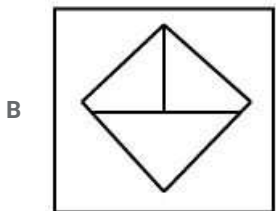
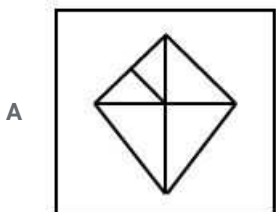
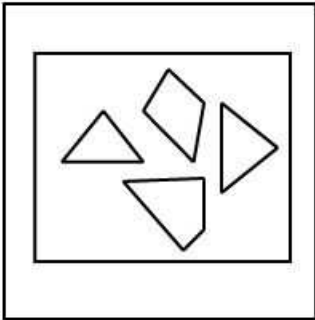
Answer: D

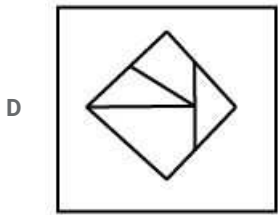
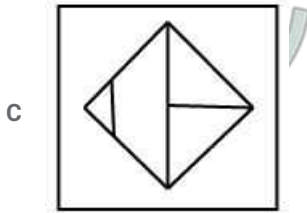
Explanation:

In the given figure, Circle represents persons having Car, triangle represents persons having Motor Cycle, square represents persons having Autorickshaws, rectangle represents persons having Cycle. The region where persons having Car, Motor Cycle, Cycle but not Autorickshaw. is the region overlapped by circle, triangle, rectangle but not square.

Question 192

Identify the response figure in which the figures given are found.





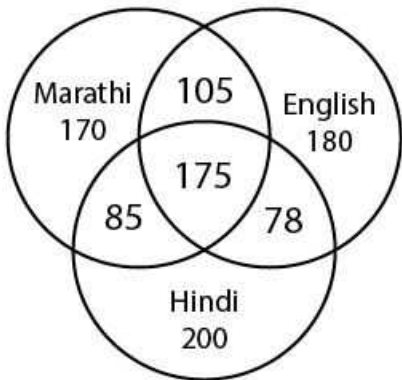
Answer: D

Explanation:

The question has 2 triangles and 2 quadrilaterals . Hence, Option D.

Instructions

In the following questions, study the following diagram carefully and answer the questions based on it.



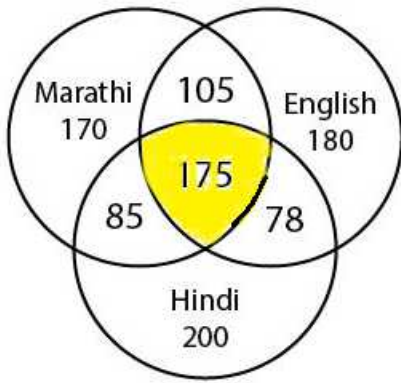
Question 193

The diagram shows the survey on a sample of 1000 persons with reference to their knowledge of English, Hindi and Marathi. How many know all the languages ?

- A 105
- B 85
- C 78
- D 175

Answer: D

Explanation:



Number of people who know English, Hindi and Marathi = 175

=> Ans - (D)

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Question 194

The diagram shows the survey on a sample of 1000 persons with reference to their knowledge of English, Hindi and Marathi. 105 people know.....languages.

- A Marathi, English
- B Hindi, Marathi, English
- C Marathi, Hindi
- D English, Hindi

Answer: A

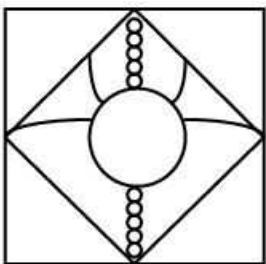
Explanation:

The 105 region is common to Marathi and English only but not Hindi.

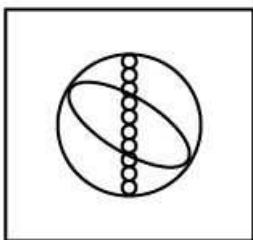
Instructions

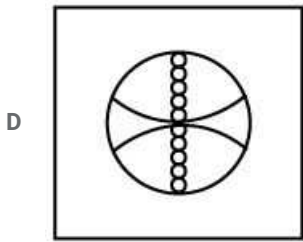
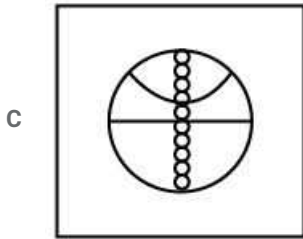
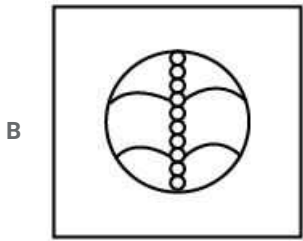
In the following questions, which answer figure will complete the pattern in the question figure ?

Question 195



A



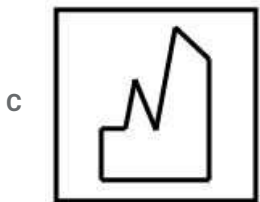
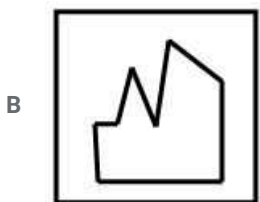
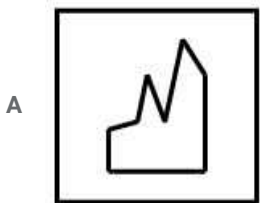


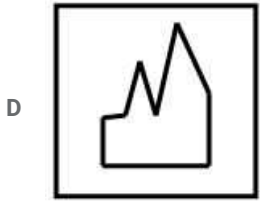
Answer: B

Explanation:

The bead design must continue from top to bottom and also the horizontal line must match.

Question 196





Answer: C

Explanation:

Overlapping the question image with each of the answers, we can find that Option C fits better.

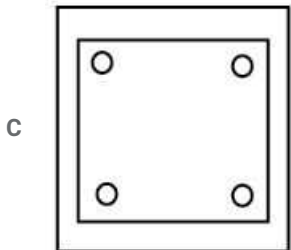
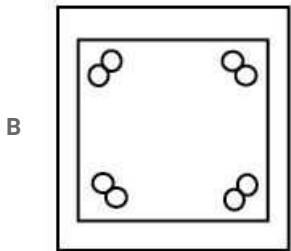
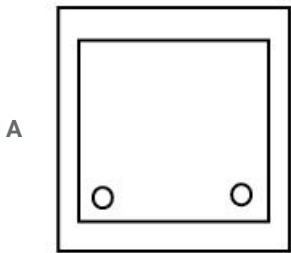
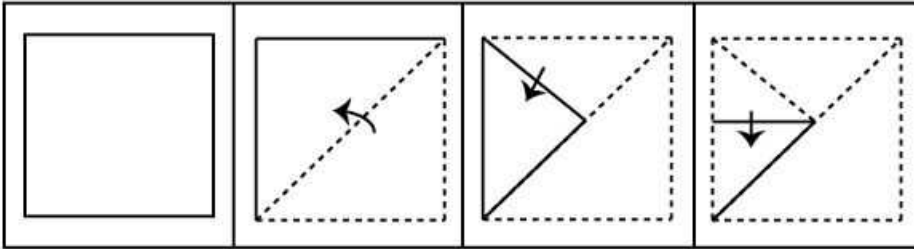
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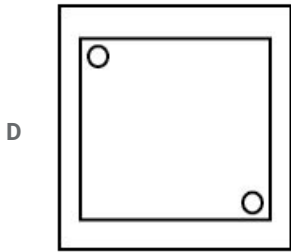
Instructions

For the following questions answer them individually

Question 197

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





D

Answer: B

Explanation:

Since, the paper is folded 4 times, the holes must appear on all the 4 corners. As the hole is punched on the lines of the fold, a pair of holes is formed each time.

Question 198

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., 'N' can be represented by 02, 24 etc. and 'Q' can be represented by 56, 78 etc. Similarly, you have to identify the set for the word 'SPORTS'.

MATRIX I

	0	1	2	3	4
0	L	M	N	O	K
1	N	M	K	L	O
2	L	K	M	O	N
3	N	O	K	M	L
4	O	M	K	L	N

MATRIX II

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

- A 67, 55, 31, 57, 69, 87
- B 58, 77, 20, 85, 79, 97
- C 24, 66, 40, 85, 89, 58
- D 87, 20, 23, 85, 75, 67

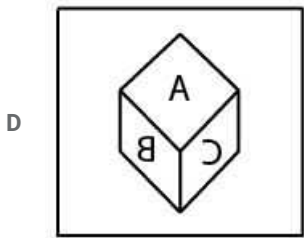
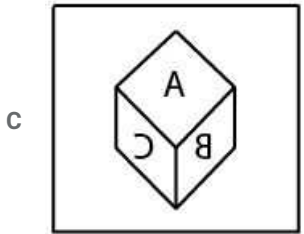
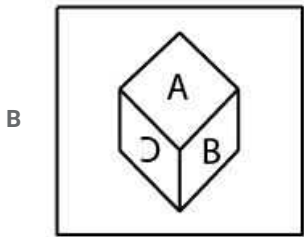
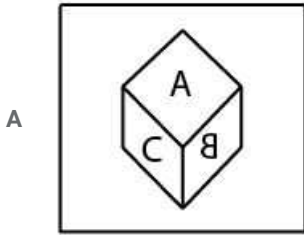
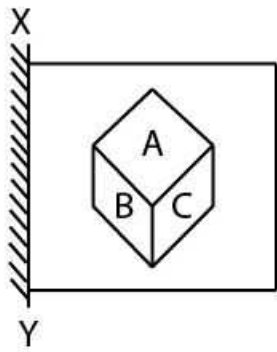
Answer: A

Explanation:

S can be 67 or 87 or 97 or 58 or 79
 P can be 55 or 66 or 86 or 96 or 77
 O can be 40 or 31 or 23 or 03 or 14
 R can be 85 or 76 or 57 or 68 or 98
 T can be 75 or 59 or 69 or 89 or 99
 S can be 67 or 87 or 97 or 79
 Hence, Option A.

Question 199

If a mirror is placed on the line XY then which of the answer figures is the right image of the given figure ?



Answer: C

Explanation:

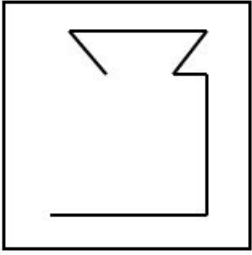
To get a mirror image, flip the image along the XY axis.

Hence, we get Option C.

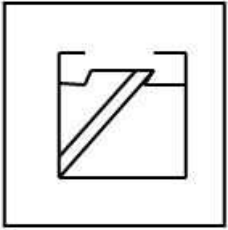
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Question 200

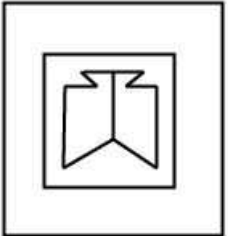
From the given answer figures, select the one in which the question figure is hidden/ embedded.



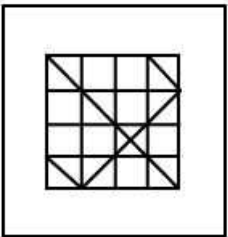
A



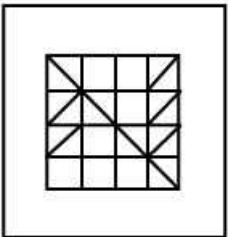
B



C



D



Answer: D

Explanation:

The top part of the question image is only available in Option B and D,.
But Option B's lower part and the shape in the question doesn't match .
Hence, Option D.

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