



## SSC CGL 2012 Tier 1 8 July NZ Evening II

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## General Awareness

### Instructions

For the following questions answer them individually

### Question 1

Which kind of veto can the President make use of with regard to bills by the Parliament ?

- A Suspensive
- B Pocket & Suspensive
- C Qualified
- D All the above

Answer: B

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### Question 2

In which country does the Speaker, soon after getting elected, sever all kinds of relations with his party ?

- A France
- B Canada
- C U.S.A.
- D England

Answer: D

### Question 3

Gandhian economy emphasises on

- A Political and social values
- B Socialist and economic values
- C Humanitarian and cultural values
- D Spiritual and religious values

Answer: B

### Question 4

Which country's Constitution is a mixture of both Parliamentary and Presidential forms of Government?

- A U.S.A.
- B Germany
- C France
- D Great Britain

Answer: C

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### Question 5

Which ruler paid considerable attention to irrigation and public works ?

- A Muhammad bin Tughlaq
- B Alauddin Khilji
- C Firuz Tughlaq
- D Ghiyasuddin Tughlaq

Answer: C

### Question 6

The Ilbert Bill was introduced during the time of

- A Curzon
- B Minto
- C Lytton
- D Ripon

Answer: D

### Question 7

The Muslim League was founded in 1906 at

- A Dhaka
- B Karachi
- C Aligarh
- D Meerut

Answer: A

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### Question 8

In which language was Chachnama written originally?

- A Turki
- B Prakrit
- C Arabic
- D Persian

Answer: C

**Question 9**

**Gita Govinda was written by**

- A Jayadeva
- B Namdev
- C Sankara
- D Manikka Vasagar

**Answer: A**

**Question 10**

**The 2004-09 Foreign Trade Policy gave emphasis to**

- A export promotion
- B long term trade relations
- C import substitution
- D increasing customs duty

**Answer: A**

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**Question 11**

**Markets fail when**

- A they equalise the aggregate consumer and producer surplus
- B they escalate the aggregate consumer and producer surplus
- C they do not maximise the aggregate consumer and producer surplus
- D they maximise aggregate consumer and producer surplus

**Answer: C**

**Question 12**

**Neglect of agriculture in the development process will lead to**

- A lower levels of production
- B severe bottlenecks in overall development
- C insufficient savings
- D shortage of foreign exchange

**Answer: B**

**Question 13**

**Monopolistic competition produces**

- A Close substitutes
- B Perfect substitutes
- C Complementary goods
- D Homogeneous goods

**Answer: A**

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**Question 14**

**A Socialist economy is**

- A an equalitarian economy
- B a planned economy
- C a nonplanned economy
- D a democratic economy

**Answer: B**

**Question 15**

**That India is a secular state is implied in the phrase**

- A Social justice
- B Dignity of the individuals
- C Equality of status
- D Liberty of faith and worship

**Answer: D**

**Question 16**

**Opium is a plant product obtained from**

- A roots
- B stem bark
- C dried leaves
- D dried latex

**Answer: D**

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**Question 17**

**Which one among the following is not a unit of weight ?**

- A Pound
- B Kilogram
- C Gram
- D Dyne

**Answer: D**

**Question 18**

**The materials which are weakly repelled by magnets are called**

- A ferromagnetic materials
- B amagnetic materials
- C paramagnetic materials
- D diamagnetic materials

**Answer: D**

**Question 19**

**What is the distance of 'distinct vision' for normal eye?**

- A 37.5 cm
- B 50 cm
- C 12.5 cm
- D 25 cm

**Answer: D**

**General Science Notes for SSC CGL**

**Question 20**

**A body which is a good absorber of heat is also a**

- A good reflector
- B cannot be predicted
- C good radiator
- D bad radiator

**Answer: C**

**Question 21**

**Which was a precursor to the Internet ?**

- A Extranet
- B Usenet

C Intranet

D Arpanet

**Answer: D**

**Question 22**

In Java, \_\_\_ is an independent sequential flow of control within a process.

A thread

B exception

C applet

D method

**Answer: A**

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**Question 23**

The colour of cow's milk is slightly yellowish due to the presence of

A riboflavin

B carotene

C ribulose

D xanthophyll

**Answer: B**

**Question 24**

Which of the following is not caused or aggravated by air pollution ?

A Asthma

B Pneumonia

C Tuberculosis

D Chronic bronchitis

**Answer: B**

**Question 25**

Magnetic Equator is closely associated with

A Natural calamities

B Fishing ground

C Tidal current

D Satellite launching

Answer: D

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### Question 26

Lands dependent on rain are

- A dry
- B arid
- C rainfed
- D irrigated

Answer: C

### Question 27

Which mountain systems has the feature of syntaxial bend ?

- A Western Ghats
- B Himalayas
- C Aravallis
- D Vindhya

Answer: B

### Question 28

Palaeontology is the study of

- A Soil
- B Tree
- C Fossils
- D Rocks

Answer: C

### Question 29

The first fertiliser plant in India was set up at

- A Alwaye
- B Asansol
- C Ranipet
- D Sindri

Answer: D

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**Question 30**

When dust gets into the eye, the part that becomes inflamed and pink is the

- A Conjunctiva
- B Sclerotic
- C Cornea
- D Choroid

**Answer: B**

**Question 31**

Haemoglobin is a respiratory pigment present in all chordata except in larvae of

- A Lamprey
- B Ascidia
- C Eel fish
- D Toad

**Answer: C**

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**Question 32**

Ilium is a part of

- A Pelvic girdle
- B Small intestine
- C Stomach
- D Pectoral girdle

**Answer: A**

**Question 33**

The pores in leaves through which liquid water oozes out at times are called

- A Phyllopores
- B Stomata
- C Hydathodes
- D Lenticels

**Answer: B**

**Question 34**

Some oilrich seeds can be stored for long periods without any change in their oil content because of the presence of

- A Proteins
- B Carbohydrates
- C Antioxidants
- D Fats

**Answer: C**

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### Question 35

The planet nearest to the Sun is

- A Mercury
- B Jupiter
- C Venus
- D Mars

**Answer: A**

### Question 36

The least populated State in India is

- A Manipur
- B Arunachal Pradesh
- C Goa
- D Sikkim

**Answer: D**

### Question 37

The first Chief Election Commissioner of India was

- A T. Swaminathan
- B Sukumar Sen
- C K.V.K. Sundaram
- D S.P. Senvarma

**Answer: B**

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### Question 38

The Indian Railways inaugurated the country's first Green Station in 2011 at

- A Manwal
- B Gorakhpur
- C Belgaum
- D Darjeeling

Answer: A

**Question 39**

Who is the author of the latest book 'Journey of a Nation : Indian National Congress - 125 Years' ?

- A Sunil Shastri
- B Vijay Dutt
- C Anand Sharma
- D Ashok Sharma

Answer: C

**Question 40**

Which is the first country in Europe to apply a ban on the wearing of full face coverings in 2011 ?

- A Italy
- B France
- C Germany
- D Belgium

Answer: B

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**Question 41**

Who among the following was selected in 2011 for the Dadasaheb Phalke Award for the year 2010 ?

- A K. Balachander
- B V.K. Murthy
- C A.R. Rahman
- D Javed Akhtar

Answer: A

**Question 42**

Who has won the Men's Singles Title in the Wimbledon 2011 Championship ?

- A Roger Federer
- B Andy Murray

- C Novak Djokovic
- D Rafael Nadal

**Answer:** C

**Question 43**

**Which of the following is used as a mordant in dyeing ?**

- A Chromium salt
- B Copper salt
- C Aluminium salt
- D All the above

**Answer:** A

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**Question 44**

**Semiconductor materials are**

- A Germanium and Carbon
- B Platinum and Carbon
- C Silicon and Platinum
- D Silicon and Germanium

**Answer:** D

**Question 45**

**Food chain is present in**

- A Marine ecosystem
- B Forest ecosystem
- C Pond ecosystem
- D All the above

**Answer:** D

**Question 46**

**Green house effect in the environment is due to the increase of**

- A Ozone
- B Sulphur dioxide
- C Carbon dioxide
- D Carbon monoxide

Answer: C

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### Question 47

Which of the following phenomena is considered as associated with global warming ?

- A La Nina
- B Nino Modoki
- C Southern Oscillation
- D El Nino

Answer: B

### Question 48

Which country has the highest natural gas reserves ?

- A Russia
- B Saudi Arabia
- C Iran
- D Qatar

Answer: A

### Question 49

The Book 'Mein Kampf ' was written by

- A Benito Mussolini
- B Adolf Hitler
- C Alexander the Great
- D Sir Winston Churchill

Answer: B

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### Question 50

The largest tiger reserve in India is

- A Pench
- B Corbett
- C Nagarjuna
- D Manas

Answer: C

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### English

#### Instructions

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

#### Question 51

Raghav was unhappy to hear (a) the news of his son's failure (b) / in the examination. (c) / No error (d)

- A Raghav was unhappy to hear
- B the news of his son's failure
- C in the examination.
- D No error

Answer: D

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#### Question 52

Either he (a) / or his wife (b) / are coming to attend the dinner. (c) / No error (d)

- A Either he
- B or his wife
- C are coming to attend the dinner.
- D No error

Answer: C

#### Question 53

The launch of the first artificial satellite by the Russians (a) / took the world almost entirely unawares (b) / and provocation flood speculation about its significance. (c) / No Error (d)

- A The launch of the first artificial satellite by the Russians
- B took the world almost entirely unawares
- C and provocation flood speculation about its significance.
- D No error

Answer: C

#### Question 54

When an university formulates (a) / new regulations, (b) / it must circulate its decision to the faculty. (c) / No error (d)

- A When an university formulates

- B new regulations,
- C it must circulate its decision to the faculty.
- D No error

Answer: A

## SSC CGL Important Questions PDF

### Question 55

The office with all its modern furniture (a)/ and equipments were sold (b) / for a meagre amount. (c)/ No error (d)

- A The office with all its modern furniture
- B and equipments were sold
- C for a meagre amount.
- D No error

Answer: B

### Instructions

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

### Question 56

Because it does not aim to \_\_\_ to the masses and strives for an \_\_\_ view, art is fated to be always under attack.

- A defer; individual
- B cater; alternate
- C appeal; universal
- D afford; independent

Answer: B

### Question 57

You must apologise \_\_\_him \_\_\_the wrong you had done.

- A from; on
- B to; against
- C from; against
- D to; for

Answer: D

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### Question 58

After I \_\_\_ dinner, I \_\_\_ T.V. for a while.

- A had finished; watched
- B finished; watching
- C had; had watching
- D had finished; will watch

**Answer: A**

**Question 59**

I \_\_\_ him because of his \_\_\_

- A admire; hypocrisy
- B detest; generosity
- C love; impertinence
- D hate; rudeness

**Answer: D**

**Question 60**

Enemies are almost always \_\_\_ as they share the same \_\_\_ of hatred, suspicion and betrayal.

- A common; features
- B similar; intensity
- C different; feelings
- D disparate; qualities

**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 as your answer.

**Question 61**

**Copious**

- A abundant
- B enjoyable
- C capable
- D copiable

**Answer: A**

**Question 62**

**Prerogative**



- A formative
- B prevention
- C privilege
- D protective

Answer: C

**Question 63**

**Aggravate**

- A increase
- B big
- C angry
- D intensify

Answer: D

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**Question 64**

**Sycophants**

- A advisors
- B flatterers
- C servants
- D sadists

Answer: B

**Question 65**

**Flout**

- A ignore
- B refuse
- C condemn
- D disregard

Answer: D

**Instructions**

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

**Question 66**

**Harbinger**

- A counselor
- B ascetic
- C miser
- D follower

**Answer: D**

**Question 67**  
**Expeditious**

- A obscure
- B barren
- C leisurely
- D speedy

**Answer: C**

**Question 68**  
**Postponed**

- A adjourned
- B advanced
- C accredited
- D abdicated

**Answer: B**

**Question 69**  
**Faded**

- A consistent
- B spirited
- C happy
- D bright

**Answer: D**

**Question 70**  
**Heterogeneous**

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- A hilarious
- B illustrious
- C homogeneous
- D industrious

**Answer: C**

**Instructions**

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

**Question 71**

**To account for**

- A speak the truth about
- B maintain accounts properly
- C give the accounts for
- D give a satisfactory explanation for

**Answer: D**

**Question 72**

**Gift of the gab**

- A to win a prize
- B to be lucky
- C talent for speaking
- D to distribute gifts

**Answer: C**

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**Question 73**

**Kicked the bucket**

- A played
- B collapsed
- C fought
- D died

**Answer: D**

**Question 74**

**A wolf in sheep's clothing**

- A a woman who looks younger than her age
- B a man of high birth but in poor condition
- C a wicked man who pretends to be good
- D a good for nothing person

Answer: C

**Question 75**

**She left him in the lurch**

- A annoyed him
- B deserted him in difficult times
- C put him at ease
- D compromised him

Answer: B

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**Instructions**

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

**Question 76**

**I want to tidy my room but I had no time.**

- A am having no time
- B have no time
- C did not have time
- D No improvement

Answer: B

**Question 77**

**My relative was living in that house during 1965 to 1975.**

- A have been living in 1965 to 1975
- B had been living from 1965 to 1975
- C lived in that house from 1965 to 1975
- D No improvement

Answer: C

**Question 78**

**Contact for Clatterers and Decorators.**

- A Cluttering and Decorating
- B Caterers and Decorators
- C Cutleries and Decorators
- D No improvement

**Answer: B**

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### Question 79

After my long walk, I was pleased to have an iced drink. I found it lively.

- A refreshing
- B tiring
- C livid
- D No improvement

**Answer: A**

### Question 80

The revue at the theatre got excellent reviews from most newspapers.

- A review
- B venue
- C revenue
- D No improvement

**Answer: D**

### Instructions

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

### Question 81

Having infinite power

- A Omnipotent
- B Omniscient
- C Impotent
- D Omnipresent

**Answer: A**

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**Question 82**

**One who hates women**

- A Misogynist
- B Polyandrist
- C Altruist
- D Celibate

**Answer: A**

**Question 83**

**A feeling of fondness, mixed with some sadness, for something in the past**

- A Nostalgia
- B Nausea
- C Oblivion
- D Noxiousness

**Answer: A**

**Question 84**

**One who looks at the bright side of things in life**

- A Misanthrope
- B Altruist
- C Optimist
- D Pessimist

**Answer: C**

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**Question 85**

**Dying without making a will**

- A Posthumous
- B Bequeath
- C Premature
- D Intestate

**Answer: D**

**Instructions**

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

**Question 86**

- A transloosent
- B tranciant
- C aparent
- D transparent

**Answer: D**

**Question 87**

- A ornamentel
- B ornammmental
- C ornamental
- D ornamental

**Answer: D**

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**Question 88**

- A coleague
- B colleague
- C colleague
- D colegue

**Answer: C**

**Question 89**

- A apreciasi on
- B apreciation
- C appreciation
- D appriciasion

**Answer: C**

**Question 90**

- A accomodation
- B acommodation
- C accomudation
- D accommodation

**Answer: D**

## SSC CGL Previous Papers (DOWNLOAD PDF)

### Instructions

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

Once upon an unfortunate time, there was a hairy thing called 'man'. Along with him was a hairier thing called 'animal'. Man had a larger brain which made him think he was superior to animals. Some men thought they were superior to others. They became leader men. Leader men said, 'We have no need to work; we will kill animals to eat.' So they did. Man increased and animals decreased. Eventually leader men said, 'There are not enough animals left to eat. We must grow our own food.' So man grew food.

Everywhere man killed all wild life. Soon there was none and all the birds were poisoned. Leader men said, 'At last we are free of pests.' Man's numbers increased. The world became crowded with men. They all had to sleep standing up. One day a leader man saw some new creatures eating his crops. The creature's name was the starving people'. 'These creatures are a menace!' said the leader man.

### Question 91

'We have no need to work' said the leader man because

- A they would kill animals and eat
- B they had no strength
- C they were rich
- D they were lazy

Answer: A

### Question 92

The hero of the story is

- A Leader man
- B Wild life
- C Man
- D Pests

Answer: A

### Question 93

Man thought he was superior to other creatures because

- A he did not have to work
- B he could kill other animals for food
- C he was able to grow food
- D he had a larger brain

Answer: D



**Question 94**

**Men had to sleep standing up as**

- A they felt lazy to stretch themselves
- B they felt proud to sleep standing up
- C there was population explosion
- D they had no time to lie down

**Answer: C**

**Question 95**

**Pick out a suitable title for the passage.**

- A Man, the dictator
- B Man, the roof of creation
- C Man, the supreme lord
- D The Tyrant Man

**Answer: D**

**Instructions**

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

The great advantage of early rising is the good start it gives for one's daily work. The early riser is able to complete a lot of work before others even get out of their bed. As the mind is fresh in the morning, free from distractions, one is able to do quality work. One is able, if so inclined, to have early morning exercises which keep one energetic throughout the day. Thus one completes one's work during the day without hurrying much and is left with time in the evening for play or entertainment or relaxation by a leisurely walk. This leads to a good night's rest after which one is able to rise fresh the next morning to face another day.

**Question 96**

**An early riser is able to complete his work without hurrying because**

- A he is energetic after morning exercises
- B he has time to complete his work
- C he has time to plan in the morning
- D he does not get distracted

**Answer: B**

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**Question 97**

**An early riser gets ample time in the evening to**

- A take a short nap
- B take a leisurely walk

C chat with friends

D be with the family

Answer: B

Question 98

Going to bed early is good for health because

A one feels energetic

B one does feel sleepy in the morning

C one feels healthy

D one feels refreshed in the morning

Answer: D

Question 99

How does early rising affect one's day ?

A Makes one energetic

B Makes one enthusiastic

C Makes one feel happy

D Makes one finish one's work

Answer: D

## SSC CGL Important Questions PDF

Question 100

An early riser gets his work done well because

A he is able to do a lot of work

B his mind is fresh, free from distractions

C he feels fresh

D he is able to go for a morning walk

Answer: B

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## Quant

Instructions

For the following questions answer them individually

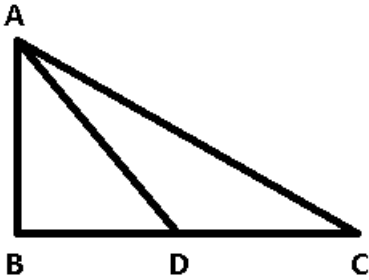
Question 101

The height of a tower is  $h$  and the angle of elevation of the top of the tower is  $\alpha$ . On moving a distance  $h/2$  towards, the tower, the angle of elevation becomes  $\theta$ . The value of  $\cot \alpha - \cot \theta$  is

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

Answer: C

Explanation:



Here,  $\angle ACB = \alpha$  and  $\angle ADB = \beta$

AB = tower =  $h$  metre

and  $CD = \frac{h}{2}$  metre

From  $\triangle ABC$

$$\Rightarrow \tan \alpha = \frac{AB}{BC} = \frac{h}{BC}$$

$$\Rightarrow BC = h \cot \alpha \text{ -----Eqn(1)}$$

From  $\triangle ABD$

$$\Rightarrow \tan \beta = \frac{AB}{BD} = \frac{h}{BC - CD}$$

$$\Rightarrow \tan \beta = \frac{h}{h \cot \alpha - \frac{h}{2}}$$

$$\Rightarrow h \cot \alpha - \frac{h}{2} = h \cot \beta$$

$$\Rightarrow h(\cot \alpha - \cot \beta) = \frac{h}{2}$$

$$\Rightarrow \cot \alpha - \cot \beta = \frac{1}{2}$$

## General Science Notes for SSC CGL

Question 102

If  $\sec x + \cos x = 3$ , then  $\tan^2 x - \sin^2 x$  is

- A 5
- B 13
- C 9
- D 4

Answer: A

Explanation:

Expression :  $\sec x + \cos x = 3$

Squaring both sides, we get :

$$\Rightarrow \sec^2 x + \cos^2 x + 2 \cdot \sec x \cdot \cos x = 9$$

$$\Rightarrow \sec^2 x + \cos^2 x = 9 - 2 = 7$$

To find :  $\tan^2 x - \sin^2 x$

$$= \sec^2 x - 1 - (1 - \cos^2 x)$$

$$= \sec^2 x + \cos^2 x - 2 = 7 - 2 = 5$$

### Question 103

Given that  $\angle ABC = 90^\circ$ , BC is parallel to DE. If  $AB = 12$ ,  $BD = 6$  and  $BC = 10$ , then the length of DE is

A 16

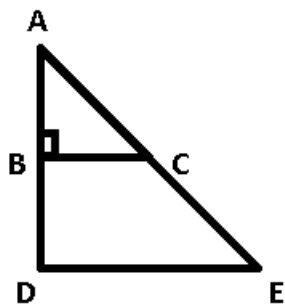
B 15

C 12

D 14

Answer: B

Explanation:



$BC \parallel DE$

$$\Rightarrow \angle ABC = \angle ADE = 90$$

and  $\angle ACB = \angle AED$

$$\therefore \triangle ABC \sim \triangle ADE$$

$$\Rightarrow \frac{AB}{AD} = \frac{BC}{DE}$$

$$\Rightarrow \frac{12}{18} = \frac{10}{DE}$$

$$\Rightarrow DE = 15 \text{ cm}$$

### Question 104

AB and CD are two parallel chords drawn on two opposite sides of their parallel diameter such that  $AB = 6$  cm,  $CD = 8$  cm. If the radius of the circle is 5 cm, the distance between the chords, in cm, is

A 2

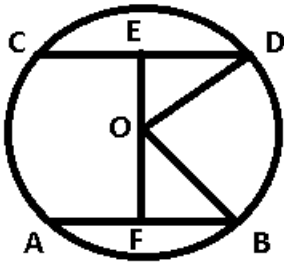
B 7

C 6

D 3

Answer: B

Explanation:



$OE \perp CD \Rightarrow DE = 4 \text{ cm}$

Similarly,  $BF = 3 \text{ cm}$

From  $\triangle ODE$

$$\Rightarrow OE = \sqrt{(OD)^2 - (DE)^2}$$

$$\Rightarrow OE = \sqrt{5^2 - 4^2} = \sqrt{9} = 3 \text{ cm}$$

Similarly,  $OF = 4 \text{ cm}$

$\therefore EF = OE + OF = 3 + 4 = 7 \text{ cm}$

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### Question 105

A chord  $AB$  of length  $3\sqrt{2}$  unit subtends a right angle at the centre  $O$  of a circle. Area of the sector  $AOB$  (in sq. units) is

A  $\frac{9}{4}\pi$

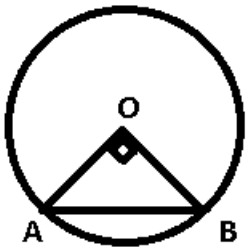
B  $5\pi$

C  $9\pi$

D  $\frac{9}{2}\pi$

Answer: A

Explanation:



From  $\triangle AOB$ ,  $\angle AOB = 90$

$$\Rightarrow OA^2 + OB^2 = AB^2$$

$$\Rightarrow 2r^2 = (3\sqrt{2})^2 = 18$$

$$\Rightarrow r^2 = 9 \Rightarrow r = 3 \text{ units}$$

$\therefore$  Area of sector  $AOB$

$$= \frac{1}{4}\pi r^2 = \frac{1}{4}\pi * 9$$

$$= \frac{9\pi}{4} \text{ sq. units}$$

Question 106

If  $\sin p + \operatorname{cosec} p = 2$ , then the value of  $\sin^7 p + \operatorname{cosec}^7 p$  is

A 27

B 0

C 1

D 2

Answer: D

Explanation:

Expression :  $\sin p + \operatorname{cosec} p = 2$

$$\Rightarrow \sin p + \frac{1}{\sin p} = 2$$

$$\Rightarrow \sin^2 p - 2\sin p + 1 = 0$$

$$\Rightarrow (\sin p - 1)^2 = 0$$

$$\Rightarrow \sin p = 1$$

and  $\operatorname{cosec} p = 1$

$$\therefore \sin^7 p + \operatorname{cosec}^7 p = 1 + 1 = 2$$

Question 107

If  $\sin \theta + \sin^2 \theta + \sin^3 \theta = 1$ , then  $\cos^6 \theta - 4\cos^4 \theta + 8\cos^2 \theta$  is equal to

A 2

B 1

C 4

D 3

Answer: C

Explanation:

Expression :  $\sin \theta + \sin^2 \theta + \sin^3 \theta = 1$

$$\Rightarrow \sin \theta + \sin^3 \theta = 1 - \sin^2 \theta$$

$$\Rightarrow \sin \theta (1 + \sin^2 \theta) = \cos^2 \theta$$

Squaring both sides

$$\Rightarrow (\sin^2 \theta)(1 + \sin^2 \theta)^2 = \cos^4 \theta$$

$$\Rightarrow (1 - \cos^2 \theta)(1 + 1 - \cos^2 \theta)^2 = \cos^4 \theta$$

$$\Rightarrow (1 - \cos^2 \theta)(4 - 4\cos^2 \theta + \cos^4 \theta) = \cos^4 \theta$$

$$\Rightarrow 4 - 4\cos^2 \theta + \cos^4 \theta - 4\cos^2 \theta + 4\cos^4 \theta - \cos^6 \theta = \cos^4 \theta$$

$$\Rightarrow -\cos^6 \theta + 4\cos^4 \theta - 8\cos^2 \theta + 4 = 0$$

$$\Rightarrow \cos^6 \theta - 4\cos^4 \theta + 8\cos^2 \theta = 4$$

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Question 108

$\sin(45 + \theta) - \cos(45 - \theta)$  is

- A  $2 \sin \theta$
- B 1
- C  $2 \cos \theta$
- D 0

Answer: D

Explanation:

Expression :  $\sin(45 + \theta) - \cos(45 - \theta)$

$$= \sin[90 - (45 - \theta)] - \cos(45 - \theta)$$

$$\because \cos(90 - \theta) = \sin \theta$$

$$= \cos(45 - \theta) - \cos(45 - \theta)$$

$$= 0$$

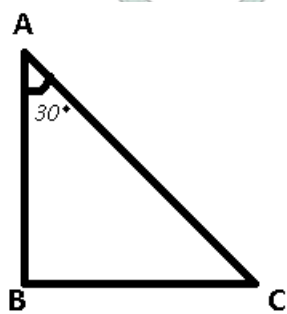
Question 109

A man is climbing a ladder which is inclined to the wall at an angle of  $30^\circ$ . If he ascends at a rate of 2 m/s, then he approaches the wall at the rate of

- A 1.5 m/s
- B 1 m/s
- C 2 m/s
- D 2.5 m/s

Answer: B

Explanation:



Let  $BC = x$  and  $AC = y$

$$\therefore \sin 30 = \frac{BC}{AC}$$

$$\Rightarrow \frac{1}{2} = \frac{x}{y}$$

$$\Rightarrow y = 2x$$

After 1 second, required speed,  $x = \frac{y}{2}$

$$= \frac{2}{2} = 1 \text{ m/s}$$

Question 110

Value of  $2(\sin^6 \theta + \cos^6 \theta) - 3(\sin^4 \theta + \cos^4 \theta) + 1$  is

- A 4
- B 0
- C 1
- D 2

Answer: B

Explanation:

$$\text{Expression : } 2(\sin^6\theta + \cos^6\theta) - 3(\sin^4\theta + \cos^4\theta) + 1$$

$$= 2[(\sin^2\theta)^3 + (\cos^2\theta)^3] - 3(\sin^4\theta + \cos^4\theta) + 1$$

$$\text{Using, } a^3 + b^3 = (a + b)(a^2 + b^2 - ab)$$

$$= 2[(\sin^2\theta + \cos^2\theta)(\sin^4\theta + \cos^4\theta - \sin^2\theta \cdot \cos^2\theta)] - 3(\sin^4\theta + \cos^4\theta) + 1$$

$$= 2\sin^4\theta + 2\cos^4\theta - 2\sin^2\theta\cos^2\theta - 3\sin^4\theta - 3\cos^4\theta + 1$$

$$= -(\sin^4\theta + \cos^4\theta + 2\sin^2\theta\cos^2\theta) + 1$$

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

$$= -1 + 1 = 0$$

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Question 111

If  $\tan\theta = \frac{a}{b}$ , then  $\frac{a\sin\theta + b\cos\theta}{a\sin\theta - b\cos\theta}$  is

A  $\frac{a}{a^2 + b^2}$

B  $\frac{b}{a^2 + b^2}$

C  $\frac{a^2 - b^2}{a^2 + b^2}$

D  $\frac{a^2 + b^2}{a^2 - b^2}$

Answer: D

Explanation:

To find :  $\frac{a\sin\theta + b\cos\theta}{a\sin\theta - b\cos\theta}$

Dividing numerator and denominator by  $\cos\theta$ , we get :

$$\frac{a\tan\theta + b}{a\tan\theta - b}$$

Also, it is given that  $\tan\theta = \frac{a}{b}$

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

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

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

Question 112

The value of  $\frac{\sin 39^\circ}{\cos 51^\circ} + 2\tan 11^\circ \tan 31^\circ \tan 45^\circ \tan 59^\circ \tan 79^\circ - 3(\sin^2 21^\circ + \sin^2 69^\circ)$  is



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

Answer: D

Explanation:

$$\begin{aligned} \text{Expression: } & \frac{\sin 39^\circ}{\cos 51^\circ} + 2 \tan 11^\circ \tan 31^\circ \tan 45^\circ \tan 59^\circ \tan 79^\circ - 3(\sin^2 21^\circ + \sin^2 69^\circ) \\ & = \frac{\sin 39^\circ}{\cos(90^\circ - 39^\circ)} + 2 \times \tan 11^\circ \times \tan 31^\circ \times 1 \times \tan(90^\circ - 31^\circ) \times \tan(90^\circ - 11^\circ) - 3[\sin^2 21^\circ + \cos^2(90^\circ - 21^\circ)] \\ & = \frac{\sin 39^\circ}{\sin 39^\circ} + 2 \times \tan 11^\circ \times \cot 11^\circ \times \tan 31^\circ \times \cot 31^\circ - 3(\sin^2 21^\circ + \cos^2 21^\circ) \\ & = 1 + 2 - 3 = 0 \end{aligned}$$

Question 113

If  $x = 27$  and  $\sqrt[3]{x} + \sqrt[3]{y} = \sqrt[3]{729}$ , the  $y =$

- A 64
- B 125
- C 216
- D 81

Answer: C

Explanation:

as  $x = 27$

$$\sqrt[3]{x} = 3$$

we need to find  $\sqrt[3]{x} + \sqrt[3]{y} = \sqrt[3]{729}$

$$3 + \sqrt[3]{y} = 9$$

$$y = 216$$

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Question 114

The value of  $(\sqrt{5} + \sqrt{3})\left(\frac{3\sqrt{3}}{\sqrt{5} + \sqrt{2}} - \frac{\sqrt{5}}{\sqrt{3} + \sqrt{2}}\right)$  is

- A 0
- B  $2 - \sqrt{2}$
- C  $2\sqrt{2}$
- D 3

Answer: C

Explanation:

$$(\sqrt{5} + \sqrt{3})\left(\frac{3\sqrt{3}}{\sqrt{5} + \sqrt{2}} - \frac{\sqrt{5}}{\sqrt{3} + \sqrt{2}}\right)$$

$$\begin{aligned}
 &= (\sqrt{5} + \sqrt{3}) \left( \frac{3\sqrt{3}}{\sqrt{5}+\sqrt{2}} * \frac{\sqrt{5}-\sqrt{2}}{\sqrt{5}-\sqrt{2}} - \frac{\sqrt{5}}{\sqrt{3}+\sqrt{2}} x \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}-\sqrt{2}} \right) \\
 &= (\sqrt{5} + \sqrt{3}) (\sqrt{15} - \sqrt{6} - \sqrt{15} + \sqrt{10}) = (\sqrt{5} + \sqrt{3}) (\sqrt{10} - \sqrt{6}) = 2\sqrt{2}
 \end{aligned}$$

**Question 115**

If  $\frac{3-5x}{x} + \frac{3-5y}{y} + \frac{3-5z}{z} = 0$ , the value of  $\frac{1}{x} + \frac{1}{y} + \frac{1}{z}$  is

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

**Answer: B**

**Explanation:**

Expression:  $\frac{3-5x}{x} + \frac{3-5y}{y} + \frac{3-5z}{z} = 0$

$$\Rightarrow \frac{3}{x} - \frac{5x}{x} + \frac{3}{y} - \frac{5y}{y} + \frac{3}{z} - \frac{5z}{z} = 0$$

$$\Rightarrow \frac{3}{x} + \frac{3}{y} + \frac{3}{z} - 15 = 0$$

$$\Rightarrow 3\left(\frac{1}{x} + \frac{1}{y} + \frac{1}{z}\right) = 15$$

$$\Rightarrow \frac{1}{x} + \frac{1}{y} + \frac{1}{z} = \frac{15}{3} = 5$$

**Question 116**

If  $ab > 0$  and the point  $(a, b)$  lies in the third quadrant, the quadrant in which the point  $(5, -a)$  lies is

- A III
- B IV
- C I
- D II

**Answer: C**

**Explanation:**

Here,  $ab > 0$

$\Rightarrow$  Either a or b are both positive or both negative.

If  $(a, b)$  lies in 3rd quadrant.

$\Rightarrow$  a & b are both negative

$\Rightarrow (5, -a)$  will lie in 1st quadrant.

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**Question 117**

If  $x = \frac{\sqrt{5}-2}{\sqrt{5}+2}$ , then  $x^4 + x^{-4}$  is

- A a surd

- B a rational number but not an integer
- C an integer
- D an irrational number but not a surd

**Answer: C**

**Explanation:**

Given :  $x = \frac{\sqrt{5}-2}{\sqrt{5}+2}$

$$\Rightarrow x = \frac{\sqrt{5}-2}{\sqrt{5}+2} \times \frac{\sqrt{5}-2}{\sqrt{5}-2}$$

$$\Rightarrow x = \frac{(\sqrt{5}-2)^2}{5-4}$$

$$\Rightarrow x = 9 - 4\sqrt{5} \text{ -----(i)}$$

Similarly,  $\frac{1}{x} = 9 + 4\sqrt{5} \text{ -----(ii)}$

To find :  $x^4 + x^{-4} = x^4 + \frac{1}{x^4}$

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

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

Substituting values from equations (i) and (ii), we get :

$$= [(9 - 4\sqrt{5} + 9 + 4\sqrt{5})^2 - 2]^2 - 2$$

$$= [324 - 2]^2 - 2$$

$$= 103684 - 2 = 103682, \text{ which is an integer.}$$

$\Rightarrow$  Ans - (C)

**Question 118**

If  $x + \frac{1}{x} = 3$ , the value of  $x^5 + \frac{1}{x^5}$  is

- A 122
- B 40
- C 123
- D 30

**Answer: C**

**Explanation:**

given that  $x + \frac{1}{x} = 3$ , and we need to find the value of  $x^5 + \frac{1}{x^5}$

$$(x + \frac{1}{x})^2 = 3^2 = x^2 + \frac{1}{x^2} + 2 = 9 - 2 = 7$$

$$(x + \frac{1}{x})^3 = 3^3 = x^3 + \frac{1}{x^3} + 3(x + \frac{1}{x}) = 27$$

$$x^3 + \frac{1}{x^3} = 27 - 9 = 18$$

$$x^5 + \frac{1}{x^5} = (x^2 + \frac{1}{x^2})(x^3 + \frac{1}{x^3}) - (x + \frac{1}{x})$$

$$x^5 + \frac{1}{x^5} = 123$$

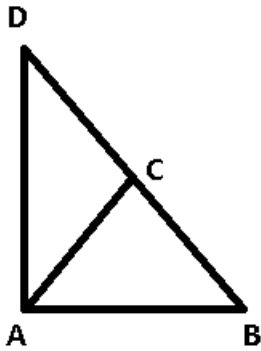
**Question 119**

ABC is a triangle with AC = BC and  $\angle ABC = 50^\circ$ . The side BC is produced to D so that BC = CD.  $\angle BAD$  is

- A  $50^\circ$
- B  $45^\circ$
- C  $75^\circ$
- D  $90^\circ$

Answer: D

Explanation:



Given :  $BC = AC = CD$  and  $\angle ABC = 50^\circ$

To find :  $\angle BAD = ?$

Solution : Since,  $BC = AC$ ,  $\Rightarrow \angle ABC = \angle CAB = 50^\circ$

$\Rightarrow \angle ACB = 180^\circ - 100^\circ = 80^\circ$

Also,  $\triangle ACD$  is isosceles

$\Rightarrow \angle CAD = \angle ADC$

$\Rightarrow \angle ACB = 2\angle CAD$

$\Rightarrow \angle CAD = 80^\circ/2 = 40^\circ$

$\therefore \angle BAD = 50^\circ + 40^\circ = 90^\circ$

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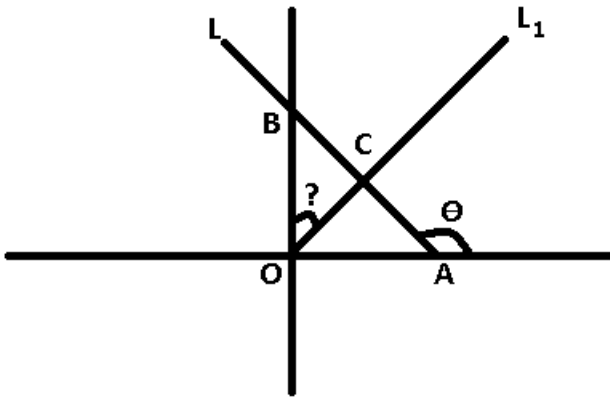
### Question 120

If a straight line L makes an angle  $\theta$  ( $\theta > 90^\circ$ ) with the positive direction of x axis, then the acute angle made by a straight line L<sub>1</sub>, perpendicular to L, with the yaxis is

- A  $\pi/2 - \theta$
- B  $\pi/2 + \theta$
- C  $\pi + \theta$
- D  $\pi - \theta$

Answer: D

Explanation:



Here,  $L \perp L_1 \Rightarrow \angle OCA = \frac{\pi}{2}$

$$\angle CAO = \pi - \theta$$

In  $\triangle OAC$

$$\Rightarrow \angle CAO + \angle OCA + \angle COA = \pi$$

$$\Rightarrow \angle COA = \pi - \frac{\pi}{2} - (\pi - \theta)$$

$$= \theta - \frac{\pi}{2}$$

$$\therefore \angle BOC = \frac{\pi}{2} - (\theta - \frac{\pi}{2})$$

$$= \pi - \theta$$

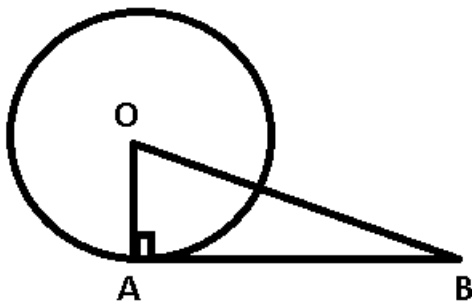
#### Question 121

The radius of a circle is 6 cm. An external point is at a distance of 10 cm from the centre. Then the length of the tangent drawn to the circle from the external point upto the point of contact is

- A 8 cm
- B 10 cm
- C 6 cm
- D 12 cm

Answer: A

Explanation:



Given :  $OA = 6$  cm and  $OB = 10$  cm

To find :  $AB = ?$

Solution : From  $\triangle OAB$

$$\Rightarrow AB = \sqrt{(OB)^2 - (OA)^2}$$

$$= \sqrt{10^2 - 6^2} = \sqrt{64}$$

$$= 8 \text{ cm}$$

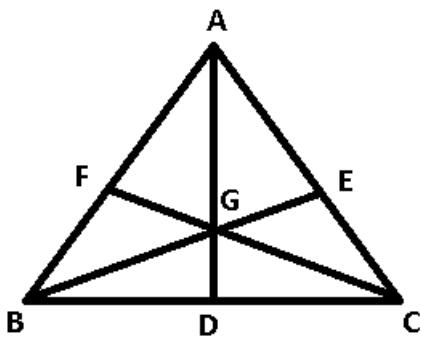
**Question 122**

If G be the centroid of  $\triangle ABC$  and the area of  $\triangle GBD$  is 6 sq. cm, where D is the midpoint of side BC, then the area of  $\triangle ABC$  is

- A 18 sq. cm
- B 12 sq. cm
- C 24 sq. cm
- D 36 sq. cm

**Answer: D**

**Explanation:**



G is centroid of  $\triangle ABC$  and D is mid point of BC

Also, ar ( $\triangle GBD$ ) = 6 sq. cm

=> Area of  $\triangle ABC = 6 \times \triangle GBD$

=  $6 \times 6 = 36$  sq. cm

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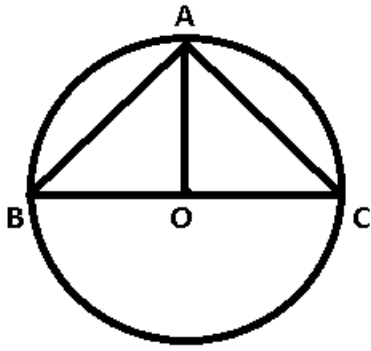
**Question 123**

A triangle is inscribed in a circle and the diameter of the circle is its one side. Then the triangle will be

- A rightangled
- B obtuseangled
- C equilateral
- D acuteangled

**Answer: A**

**Explanation:**



BC = side of triangle = diameter of circle

Angle of semi circle is a right angle

$$\Rightarrow \angle BAC = 90$$

$\therefore$  ABC is right angled triangle.

**Question 124**

AB and BC are two chords of a circle with centre O. If P and Q are the midpoints of AB and BC respectively, then the quadrilateral OQBP must be

- A a rhombus
- B concyclic
- C a rectangle
- D a square

**Answer: B**

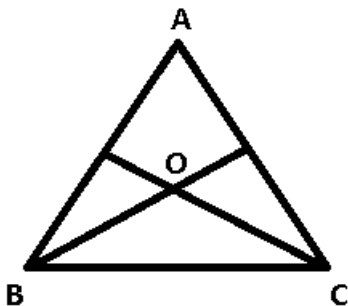
**Question 125**

In any triangle ABC, the base angles at B and C are bisected by BO and CO respectively. Then  $\angle BOC$  is

- A  $\frac{\pi}{2} + \frac{A}{2}$
- B  $\pi - \frac{A}{2}$
- C  $\frac{(\pi-A)}{2}$
- D  $\frac{\pi}{2} + A$

**Answer: A**

**Explanation:**



In  $\triangle ABC$

$$\Rightarrow \angle A + \angle B + \angle C = \pi$$

$$\Rightarrow \frac{1}{2}(\angle A + \angle B + \angle C) = \frac{\pi}{2}$$

$$\Rightarrow \frac{\angle B}{2} + \frac{\angle C}{2} = \frac{\pi}{2} - \frac{\angle A}{2}$$

In  $\triangle OBC$

$$\Rightarrow \angle OBC + \angle OCB + \angle BOC = \pi$$

$$\Rightarrow \frac{\angle B}{2} + \frac{\angle C}{2} + \angle BOC = \pi$$

$$\Rightarrow \angle BOC = \pi - \left(\frac{\pi}{2} - \frac{\angle A}{2}\right)$$

$$= \frac{\pi}{2} + \frac{\angle A}{2}$$

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**Question 126**

An article was sold for 96. If percentage of profit was numerically equal to the cost price, the cost price of the article is

- A 70
- B 60
- C 90
- D 100

**Answer: B**

**Explanation:**

Let the cost price = Rs.  $x$

$\Rightarrow$  Profit % =  $x\%$

Acc to ques :

$$\Rightarrow x + \frac{x}{100} * x = 96$$

$$\Rightarrow x^2 + 100x - 9600 = 0$$

$$\Rightarrow x^2 + 160x - 60x - 9600 = 0$$

$$\Rightarrow x(x + 160) - 60(x + 160) = 0$$

$$\Rightarrow (x + 160)(x - 60) = 0$$

$$\Rightarrow x = -160, 60$$

Since, cost price cannot be negative

$\Rightarrow$  Cost price = Rs. 60

**Question 127**

The average of 7 numbers is 8. If one number is added, their average is 9. Then the added number is

- A 12
- B 11
- C 16
- D 14

**Answer: C**

**Explanation:**



The average of 7 numbers = 8  
 $\Rightarrow$  Sum of 7 numbers =  $7 \times 8 = 56$   
 Let added number be  $x$   
 $\Rightarrow \frac{56+x}{8} = 9$   
 $\Rightarrow x = 72 - 56 = 16$

**Question 128**

With an average speed of 40 km/ hr, a train reaches its destination in time. If it goes with an average speed of 35 km/hr, it is late by 15 minutes. The total journey is

- A 35 km
- B 60 km
- C 70 km
- D 50 km

**Answer: C**

**Explanation:**

Let the required distance be  $x$  km

Acc to ques :

$$\Rightarrow \frac{x}{35} - \frac{x}{40} = \frac{15}{60}$$

$$\Rightarrow \frac{8x-7x}{280} = \frac{1}{4}$$

$$\Rightarrow x = \frac{280}{4} = 70 \text{ km}$$

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**Question 129**

Three students A, B and C play cricket. The runs scored by A and B respectively are in the ratio 3 : 2. B's runs to C's runs are also in the same ratio. Together they score 342 runs. Then the runs scored by B are

- A 216
- B 108
- C 90
- D 171

**Answer: B**

**Explanation:**

It is given that A : B = 3 : 2

and B : C = 3 : 2

$$\Rightarrow A : B : C = 9 : 6 : 4$$

Total runs scored = 342

$$\therefore \text{Runs scored by B} = \frac{6}{9+6+4} \times 342$$

$$= 108$$

Question 130

A trader fixes selling prices of commodities after increasing them by 10% and offers 10% rebate on selling prices. The per cent gain or loss is

- A 1% gain
- B 0.9% gain
- C 1.2% loss
- D 1% loss

Answer: D

Explanation:

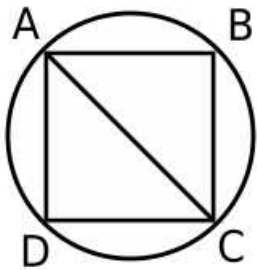
After increasing price by 10% and then giving discount of 10%

$$\begin{aligned} \text{Resultant effect} &= [10 - 10 + (\frac{10 \times -10}{100})]\% \\ &= \frac{-100}{100} = -1\% \end{aligned}$$

∴ Trader will incur a loss of 1%

Question 131

If the area of the circle in the figure is  $36\pi$  sq. cm. And ABCD is a square, then the area of  $\triangle ACD$ , in sq.cm, is



- A  $12\pi$
- B  $\frac{36}{\pi}$
- C 12
- D None of the above

Answer: D

Explanation:

$$\text{Area of circle} = \pi \times r^2 = 36\pi \text{ sq.cm}$$

$$\Rightarrow r = \sqrt{36} = 6 \text{ cm}$$

$$\Rightarrow \text{Diameter of circle} = AC = 2r = 12 \text{ cm}$$

$$\text{In } \triangle ACD, \text{ let } AD = CD = s \text{ cm}$$

$$\Rightarrow (AD)^2 + (CD)^2 = (AC)^2$$

$$\Rightarrow 2s^2 = (12)^2 = 144$$

$$\Rightarrow s^2 = \frac{144}{2} = 72 \text{ -----(i)}$$

$$\therefore \text{Area of } \triangle ACD = \frac{1}{2} \times s \times s$$

$$= \frac{s^2}{2} = 36 \text{ cm}^2$$

=> Ans - (D)

## SSC CGL Previous Papers (DOWNLOAD PDF)

### Question 132

If  $x^2 - 3x + 1 = 0$  and  $x > 1$ , then the value of  $(x - \frac{1}{x})$

A  $\sqrt{5}$  only

B 1

C  $\sqrt{5}$  only

D  $\pm\sqrt{5}$

Answer: D

Explanation:

Expression :  $x^2 - 3x + 1 = 0$

$$\Rightarrow x^2 + 1 = 3x$$

Dividing by  $(x)$  on both sides

$$\Rightarrow x + \frac{1}{x} = 3$$

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

$$\Rightarrow x - \frac{1}{x} = \sqrt{9 - 4}$$

$$\Rightarrow (x - \frac{1}{x}) = \pm\sqrt{5}$$

### Question 133

If the operation 'o' among real numbers is defined by  $x \circ y = x^2 - 2y$ , then values of  $x$  satisfying  $2x \circ 4 = 2 \circ x$  is

A  $-1/2, 3$

B  $-2, 3/2$

C  $2/3, 2$

D  $1/2, -2$

Answer: B

Explanation:

It is given that  $x \circ y = x^2 - 2y$

$$\therefore 2x \circ 4 = 4x^2 - 8$$

$$\text{and } 2 \circ x = 4 - 2x$$

$$\Rightarrow 4x^2 - 8 = 4 - 2x$$

$$\Rightarrow 2x^2 + x - 6 = 0$$

$$\Rightarrow 2x^2 + 4x - 3x - 6 = 0$$

$$\Rightarrow 2x(x + 2) - 3(x + 2) = 0$$

$$\Rightarrow (2x - 3)(x + 2) = 0$$

$$\Rightarrow x = \frac{3}{2}, -2$$

**Question 134**

If  $a^x = (x + y + z)^y$ ,  $a^y = (x + y + z)^z$  and  $a^z = (x + y + z)^x$ , then the value of  $x + y + z$  (given  $a \neq 0$ ) is

- A 0
- B  $a^3$
- C 1
- D a

**Answer: D**

**Explanation:**

Expressions :  $a^x = (x + y + z)^y$

$$a^y = (x + y + z)^z$$

$$a^z = (x + y + z)^x$$

Multiplying above equations, we get :

$$\Rightarrow a^x \times a^y \times a^z = (x + y + z)^x \times (x + y + z)^y \times (x + y + z)^z$$

$$\Rightarrow (a)^{x+y+z} = (x + y + z)^{x+y+z}$$

Since the power on both sides is same, thus :

$$\Rightarrow x + y + z = a$$

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**Question 135**

If  $x = 2 + \sqrt{3}$ , then the value of  $\frac{x^6 + x^4 + x^2 + 1}{x^3}$  is

- A 65
- B 56
- C 69
- D 67

**Answer: B**

**Question 136**

If 50% of  $(x - y) = 30\%$  of  $(x + y)$ , then what per cent of  $x$  is  $y$ ?

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

**Answer: C**

**Explanation:**

Expression : 50% of  $(x - y) = 30\%$  of  $(x + y)$

$$\Rightarrow \frac{50}{100}(x - y) = \frac{30}{100}(x + y)$$

$$\Rightarrow 5x - 5y = 3x + 3y$$

$$\Rightarrow 2x = 8y$$

$$\Rightarrow \frac{y}{x} = \frac{1}{4}$$

$$\therefore \frac{y}{x}\% = \frac{1}{4} * 100 = 25\%$$

#### Question 137

B borrowed 5,000 from A at 6%, p. a. simple interest and lends it to C at compound interest of 10% p. a. If B collects the money back from C after 2 years and repays A, the profit made by B in the transaction is

- A 600
- B 1,050
- C 500
- D 450

Answer: D

#### Explanation:

B borrowed Rs. 5,000 from A at 6% SI

$$\Rightarrow \text{Interest paid by B after 2 years} = \frac{5000 * 6 * 2}{100}$$

= Rs. 600

B lent Rs. 5,000 to C at 10% CI

$$\Rightarrow \text{Interest collected by B after 2 years} = 5000 \left[ \left( 1 + \frac{10}{100} \right)^2 - 1 \right]$$

$$= 5000 * \frac{21}{100} = \text{Rs. 1,050}$$

$$\therefore \text{Profit made by B} = 1050 - 600 = \text{Rs. 450}$$

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#### Question 138

Two trains starting at the same time from two stations 200 km apart and going in opposite directions cross each other at a distance of 110 km from one of the stations. The ratio of their speeds is

- A 11 : 20
- B 20 : 9
- C 9 : 20
- D 11 : 9

Answer: D

#### Explanation:

Distance between two trains = 200 km

Since one of the trains covered 110 km

$$\Rightarrow \text{Other train covered} = 200 - 110 = 90 \text{ km}$$

Also,  $\text{speed} \propto \text{distance}$

$$\therefore \text{Ratio of speed} = \frac{110}{90}$$

$$= 11 : 9$$

**Question 139**

The least number which when divided by 25, 40 and 60 leaves the remainder 7 in each case is

- A 609
- B 593
- C 1207
- D 607

**Answer:** D

**Explanation:**

The least number which when divided by 25, 40 and 60 leaves the remainder 7

$$= \text{L.C.M. (25,40,60)} + 7$$

$$= 600 + 7 = 607$$

**Question 140**

The least number which is divisible by all the natural numbers upto and including 10 is

- A 7560
- B 1260
- C 5040
- D 2520

**Answer:** D

**Explanation:**

The least number which is divisible by all natural numbers from 1 to 10

$$= \text{L.C.M. (1,2,3,4,5,6,7,8,9,10)}$$

$$= 2520$$

## SSC CGL Important Questions PDF

**Question 141**

The value of  $(3^2 - 2^2)^2 + (5^2 - 4^2)^2 + (6^2 - 5^2)^2$  is

- A 216
- B 206
- C 236
- D 227

**Answer:** D

**Explanation:**

$$\text{Expression : } (3^2 - 2^2)^2 + (5^2 - 4^2)^2 + (6^2 - 5^2)^2$$

$$= [(3 - 2)(3 + 2)]^2 + [(5 - 4)(5 + 4)]^2 + [(6 - 5)(6 + 5)]^2$$

$$= 25 + 81 + 121 = 227$$

**Question 142**

The value of  $2 \times (2.11 + 2.23 + 2.16)$  is

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

**Answer:** C

**Explanation:**

Expression :  $2 \times (2.11 + 2.23 + 2.16)$

$$= 2 * (6.50)$$

$$= 13$$

**Question 143**

40 men can finish a work in 15 days. If the work is to be completed 3 days earlier, how many more people should be employed ?

- A 8
- B 3
- C 15
- D 10

**Answer:** D

**Explanation:**

40 men can finish a work in 15 days

Let  $x$  men finish the work in  $(15 - 3) = 12$  days

$$\Rightarrow 40 \times 15 = x \times 12$$

$$\Rightarrow x = \frac{40 \times 15}{12}$$

$$\Rightarrow x = 50$$

$\therefore (50 - 40) = 10$  more men are required.

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**Question 144**

A father is 7 years older than the mother and the mother's age now is 3 times the age of the daughter. The daughter is 10 years old now. What was the father's age when the daughter was born ?

- A 27 years
- B 37 years
- C 15 years
- D 40 years

**Answer:** A

**Explanation:**

Present age of daughter = 10 years

=> Present age of mother =  $3 * 10 = 30$  years

=> Present age of father =  $30 + 7 = 37$  years

∴ Father's age when the daughter was born =  $37 - 10 = 27$  years

### Question 145

Of the three numbers, the first is twice the second and is half of the third. If the average of these numbers is 56, the numbers in order are

A 96, 24, 48

B 96, 48, 24

C 48, 96, 24

D 48, 24, 96

Answer: D

### Explanation:

Let the first number be  $2x$

=> Second number =  $x$

and third number =  $4x$

Average of these numbers =  $\frac{2x+x+4x}{3} = 56$

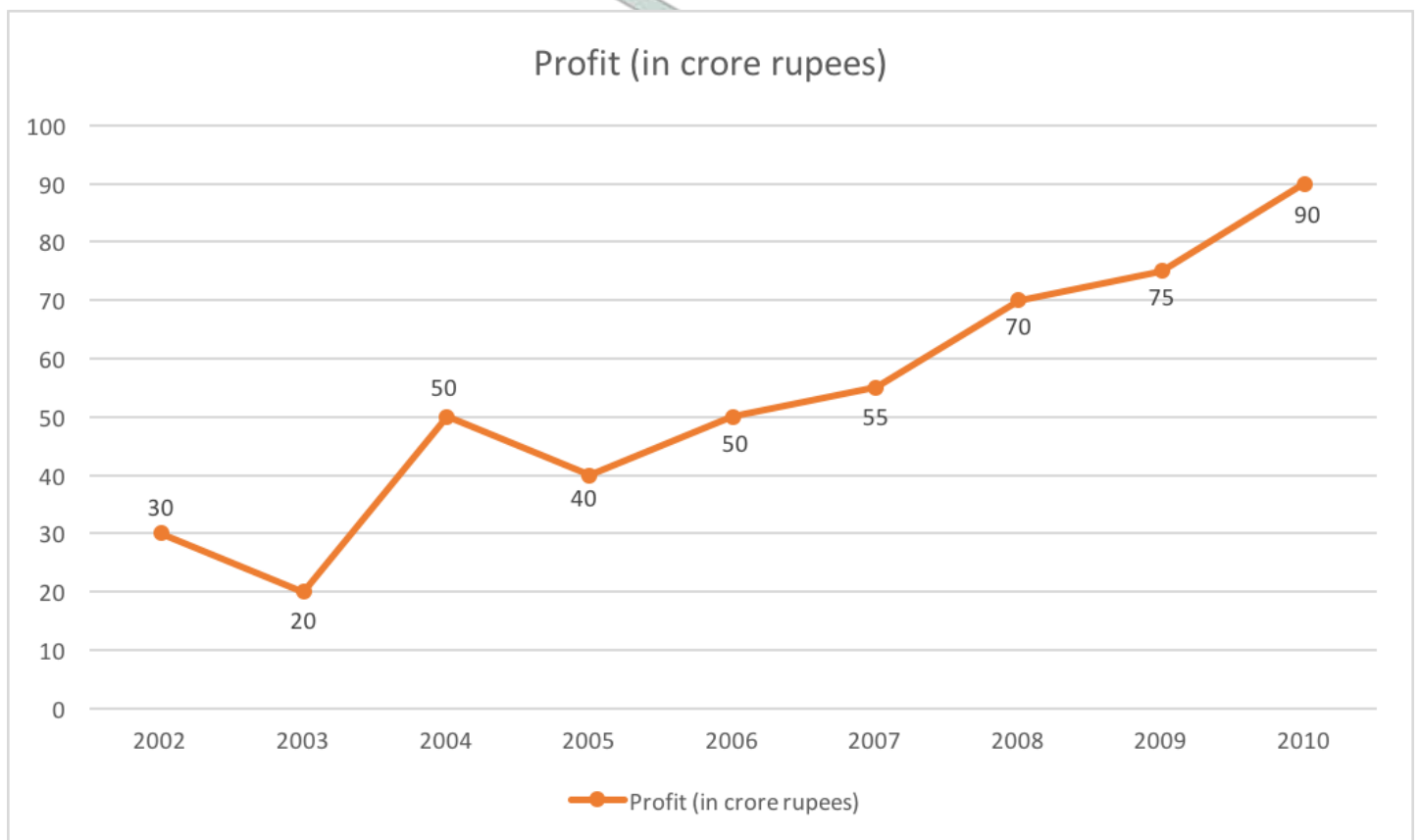
=>  $x = \frac{56*3}{7} = 24$

Numbers are =  $2*24, 24, 4*24$

= 48, 24, 96

### Instructions

Study the graph carefully and answer the following questions. Profit Earned by a company (in crore rupees) during certain years





**Question 146**

If the income in the year 2003 was 60 crores and the expenditure of that year equals the expenditure of the year 2005, the income of the company (in crore rupees) in 2005 was

- A 75
- B 80
- C 65
- D 70

**Answer: B**

**Explanation:**

profit in 2003 = 20cr

if income in 2003 = 60cr, then expenditure =  $60 - 20 = 40$ cr

according to question, expenditure in 2005 = expenditure in 2003 = 40crs

from graph, profit in 2005 = 40cr

so income in 2005 = profit + expenditure =  $40 + 40 = 80$ cr

so the answer is option B.

## General Science Notes for SSC CGL

**Question 147**

If the expenditure in the year 2007 was 60 crores, then the income (in crore rupees) in that year was

- A 115
- B 120
- C 85
- D 90

**Answer: A**

**Explanation:**

profit = income - expenditure

$55 = \text{Income} - 60$

Income = 115

so the answer is option A.

**Question 148**

The year in which the percentage increase in the profit from that of the previous year is the highest is

- A 2006
- B 2008
- C 2002
- D 2004

Answer: D

**Explanation:**

profit increased only in the years 2004, 2006, 2007, 2008, 2009 & 2010.

$$\text{percentage increase in the profit in 2004} = \frac{50-20}{20} \times 100 = \frac{30}{20} \times 100 = 150\%$$

$$\text{percentage increase in the profit in 2006} = \frac{50-40}{40} \times 100 = \frac{10}{40} \times 100 = 25\%$$

$$\text{percentage increase in the profit in 2007} = \frac{55-50}{50} \times 100 = \frac{5}{50} \times 100 = 10\%$$

$$\text{percentage increase in the profit in 2008} = \frac{70-55}{55} \times 100 = \frac{15}{55} \times 100 = 27.27\%$$

$$\text{percentage increase in the profit in 2009} = \frac{75-70}{70} \times 100 = \frac{5}{70} \times 100 = 7.14\%$$

$$\text{percentage increase in the profit in 2010} = \frac{90-75}{75} \times 100 = \frac{15}{75} \times 100 = 20\%$$

so the answer is option D.

**Question 149**

What is the approximate per cent (to the nearest integer) increase in the profit of the year 2006, if the increase of that year was 120 crores ?

- A 42%
- B 51%
- C 41%
- D 43%

Answer: A

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**Question 150**

What is the approximate per cent (to nearest integer) increase in the profit in the year 2009 from that of the previous year ?

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

Answer: C

**Explanation:**

profit in the year 2009 = 75cr

profit in the year 2008 = 70cr

$$\% \text{ increase in profit} = \frac{5}{70} \times 100 = 7.142 \sim 7$$

so the answer is option C.

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**Reasoning**

Instructions

In each of the following questions, select the related letters/word/number from the given alternatives:

**Question 151**

**PQR : CBA :: ?**

- A MNO : UVW
- B GIH : DFE
- C SUT : VWX
- D LMN : ZYX

**Answer: D**

**Explanation:**

Expression = PQR : CBA :: ?

The first 3 combination of letters are in consecutive order in English alphabetical order, and the second term in reverse order forms consecutive alphabets. Similar pattern is observed only in last option.

Thus, LMN : ZYX

=> Ans - (D)

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**Question 152**

**2 : 12 :: ? : 80**

- A 36
- B 48
- C 6
- D 25

**Answer: A**

**Explanation:**

Expression = 2 : 12 :: ? : 80

The pattern followed is =  $n^2 + n^3$

Eg =  $1^2 + 1^3 = 1 + 1 = 2$

and  $2^2 + 2^3 = 4 + 8 = 12$

Thus, missing term  $3^2 + 3^3 = 9 + 27 = 36$

Similarly,  $4^2 + 4^3 = 16 + 64 = 80$

=> Ans - (A)

**Question 153**

**3 : 10 :: 08 : ?**

- A 25
- B 14
- C 20

D 13

Answer: A

Explanation:

Expression =  $3 : 10 :: 08 : ?$

The pattern followed is  $n : 3n + 1$

Eg =  $3 : 3 \times 3 + 1 = 3 : 10$

Similarly,  $3 \times 8 + 1 = 24 + 1 = 25$

=> Ans - (A)

Question 154

? : 233345 :: 51119 : 91523

A 203042

B 192840

C 182840

D 192941

Answer: D

Explanation:

Expression = ? : 233345 :: 51119 : 91523

Sum of digits are in same ratio.

$5+1+1+1+9 = 17 = 1 + 7 = 8$

$9+1+5+2+3 = 20 = 2 + 0 = 2$

Ratio =  $8 : 2$

Similarly,  $2+3+3+3+4+5 = 20 = 2 + 0 = 2$

Thus, sum of the digits should be 8, which is only possible in last option.

$1+9+2+9+4+1 = 26 = 2 + 6 = 8$

=> Ans - (D)

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Question 155

Finger : Hand :: ?

A Chair : Table

B Cycle : Wheels

C Money : Bank

D Month : Year

Answer: D

Explanation:

Fingers are part of the hand, similar to as a month is part of the year.

=> Ans - (D)

**Question 156**

**Newspaper : Reader :: Bread : ?**

- A Wheat
- B Buyer
- C Consumer
- D Baker

**Answer: C**

**Explanation:**

A reader buys a newspaper to read, similarly a consumer buys bread to eat.

=> Ans - (C)

**Question 157**

**Axis : Earth :: Hub : ?**

- A Wheel
- B Watch
- C Tyre
- D Car

**Answer: A**

**Explanation:**

Earth rotates on its axis, similarly a hub is a central part of the wheel which helps it to rotate.

=> Ans - (A)

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**Question 158**

**AZBY : ? :: EVFU : GTHS**

- A CWXD
- B CXDW
- C CDWX
- D CXWD

**Answer: B**

**Explanation:**

Expression = AZBY : ? :: EVFU : GTHS

The pattern followed is that in alternate positions consecutive English alphabets are written, and in the remaining places, their reverse letters according to the English alphabetical series is written.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
↓ ↓ ... ↓ ↓ ↓  
Z Y X W V U T S R Q P O N M L K J I H G F E D C B A

Thus, C -> X and D -> W

Thus, missing term = **CXDW**

=> Ans - (B)

**Question 159**

**ZXVT : ? : : MKIG : NPRT**

**A** DCBA

**B** ACEG

**C** ABCD

**D** GECA

**Answer: B**

**Explanation:**

Expression = ZXVT : ? : : MKIG : NPRT

The pattern followed is =

|      |      |      |       |
|------|------|------|-------|
| M    | K    | I    | G     |
| (+1) | (+5) | (+9) | (+13) |
| N    | P    | R    | T     |

Similarly, for ZXVT :

|      |      |      |       |
|------|------|------|-------|
| Z    | X    | V    | T     |
| (+1) | (+5) | (+9) | (+13) |
| A    | C    | E    | G     |

=> Ans - (B)

**Instructions**

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

**Question 160**

**A** B.G. Tilak

**B** Madan Mohan Malviya

**C** V.D. Savarkar

**D** Lajpat Rai

**Answer: B**

**Explanation:**

Madan Mohan Malviya was a member of moderate group of Indian National Congress. B.G. Tilak, V.D. Savarkar and Lajpat Rai were members of the extremist group.

=> Ans - (B)

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**Question 161**

**A** MRZQ

**B** ZMSR

**C** PQST

D BTEP

**Answer:** D

**Explanation:**

In letter group BTEP, there is one Vowel and three Consonants. In all other groups, all the four letters are Consonants, hence BTEP is the odd one out.

=> Ans - (D)

**Question 162**

A Yearly

B Quickly

C Weekly

D Monthly

**Answer:** B

**Explanation:**

Except Quickly, all others signify a certain period of time.

=> Ans - (B)

**Question 163**

A Horse

B Ox

C Dog

D Cow

**Answer:** C

**Explanation:**

Except Dog, all others are herbivores. Dog is an omnivore.

=> Ans - (C)

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**Question 164**

A 572

B 963

C 532

D 761

**Answer:** D

**Explanation:**

The number 761 is a Prime Number, all the other are composite, hence it is the odd one out.

=> Ans - (D)

**Question 165**

A (35, 56)

B (44, 68)

C (24, 44)

D (32, 26)

**Answer: B**

**Explanation:**

Digits in each pair is multiplied, and the result is divided.

(A) :  $35 \rightarrow 3 \times 5 = 15$  and  $56 \rightarrow 5 \times 6 = 30$

$$\Rightarrow \frac{30}{15} = 2$$

(B) :  $44 \rightarrow 4 \times 4 = 16$  and  $68 \rightarrow 6 \times 8 = 48$

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

(C) :  $24 \rightarrow 2 \times 4 = 8$  and  $44 \rightarrow 4 \times 4 = 16$

$$\Rightarrow \frac{16}{8} = 2$$

(D) :  $32 \rightarrow 3 \times 2 = 6$  and  $26 \rightarrow 2 \times 6 = 12$

$$\Rightarrow \frac{12}{6} = 2$$

$\Rightarrow$  Ans - (B)

**Question 166**

A Radiation

B Concentration

C Confluence

D Concourse

**Answer: A**

**Explanation:**

Radiation is different from the other three words, rest all are synonyms meaning gathering or merge.

$\Rightarrow$  Ans - (A)

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**Question 167**

A tttxxbbb

B mmmqqttt

C cccggkkk

D kkkoooss

**Answer: B**

**Explanation:**

(A) : t (+4 letters) = x (+4 letters) = b

(B) : m (+4 letters) = q (+3 letters) = t

(C) : c (+4 letters) = g (+4 letters) = k

(D) : k (+4 letters) = o (+4 letters) = s



=> Ans - (B)

**Question 168**

- A Godan and Munshi Premchand
- B Bhagwat Gita and Ved Vyas
- C Freedom at Midnight and Jawahar Lal Nehru
- D Geetanjali and Ravindranath Tagore

**Answer: C**

**Explanation:**

Except in third option, in all others the name of book and its author are given. "Freedom at Midnight" has been authored by Larry Collins and Dominique Lapiere.

=> Ans - (C)

**Instructions**

For the following questions answer them individually

**Question 169**

Find out a set of numbers amongst the alternatives given which is most unlike the set given below.  
3, 7, 100

- A 11, 12, 365
- B 13, 17, 900
- C 1, 2, 9
- D 6, 7, 169

**Answer: A**

**Explanation:**

Expression =  $(3 + 7)^2 = (10)^2 = 100$

(A):  $(11 + 12)^2 = (23)^2 = 529 \neq 365$

(B):  $(13 + 17)^2 = (30)^2 = 900$

(C):  $(1 + 2)^2 = (3)^2 = 9$

(D):  $(6 + 7)^2 = (13)^2 = 169$

=> Ans - (A)

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**Instructions**

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

**Question 170**

AZ ,YB ,CX ,?

- A WD
- B OU
- C QA

D UJ

Answer: A

**Explanation:**

In the given series the next term is obtained by moving the letters of previous term starting from A one step forward and letters starting from Z one step backward and then interchanging their positions

The series is

AZ

$A+1, Z-1 = BY$  which after interchanging becomes YB

Similarly  $Y-1, B+1 = XC$  which after interchanging becomes CX

$C+1, X-1 = DW$  which after interchanging becomes WD

**Question 171**

1763, 1992, 2221, ?, 2679, 2908

A 2474

B 2512

C 2314

D 2450

Answer: D

**Explanation:**

The Series follows the pattern

1763

$1763+229=1992$

$1992+229=2221$

$2221+229=2450$

$2450+229=2679$

$2679+229=2908$

**Question 172**

10, 43, 175, ?, 2815

A 703

B 1320

C 315

D 633

Answer: A

**Explanation:**

The Series follows the pattern

10

$10 \times 4 + 3 = 43$

$43 \times 4 + 3 = 175$

$175 \times 4 + 3 = 703$

$703 \times 4 + 3 = 2815$

**Question 173**

A G L P \_\_?\_\_ UV

- A R
- B S
- C Q
- D T

**Answer: B**

**Explanation:**

The pattern followed is :

A (+6 letters) = G

G (+5 letters) = L

L (+4 letters) = P

P (+3 letters) = S

S (+2 letters) = U

U (+1 letter) = V

=> Ans - (B)

**Question 174**

cdeb, ceed, cfef, cgeh, ?

- A chef
- B chik
- C chjk
- D cghj

**Answer: A**

**Explanation:**

The first and the third letter of each term of the series is same

the second letter of next term is obtained by shifting second letter of previous term one step forward

$d, d+1 = e, e+1 = f, f+1 = g, g+1 = h$

Similarly fourth letter of next term is obtained by shifting second letter of previous term two steps forward

$b, b+2 = d, d+2 = f, f+2 = h, h+2 = j$

Hence the next term is

chej

**Question 175**

\_\_?\_\_, LMKJNL, MONLKM, NOPLMN, OQPMNO, PQRNPQ

- A IKMIJL
- B KJLIMK

C MJLIMK

D LJKILM

**Answer: B**

**Explanation:**

In each of the given term of the series the first and last letter is same and the number of letters in each term are 6. Among the given options only option B satisfies both conditions so option B is correct .

## SSC CGL Tier-2 Previous Papers PDF

**Instructions**

For the following questions answer them individually

**Question 176**

**Which of the given letter groups follows the same principle on which the numbers are arranged in the given number group ?  
(5, 8, 13, 20, 29)**

A ACGKR

B ADIMS

C ADIPY

D ADGRO

**Answer: C**

**Explanation:**

The Series follows the pattern

5

$5+3 = 8$

$8+5 = 13$

$13 + 7 = 20$

$20+9 = 29$

So the option representing the correct letter group must follow the same pattern

So

the letter series is

A

$A+3 = D$

$D + 5 = I$

$I + 7 = P$

$P + 9 = Y$

So the letter series is ADIPY

**Question 177**

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

**\_bcc\_ ac\_ aabb\_ab\_ cc**

A abaca

B bcaca

C aabca

D bacab

**Answer: D**

**Explanation:**

Going by the options one by one  
If we put letters sequentially  
starting from the last option we get the given series as

bbccaaccaabbaabbcc  
So the given series follows the pattern  
bbccaa,ccaabb,aabbcc  
So option D is correct .

**Question 178**

**From the given alternative words, select the word which cannot be formed using the letters of the given word. ECCENTRICITY**

- A TRINITY
- B TRICKY
- C ENTER
- D CENTRE

**Answer: B**

**Explanation:**

From the given alternative words, the word which cannot be formed using the letters of the given word. ECCENTRICITY is TRICKY as there is no K in ECCENTRICITY . hence the correct answer is option B.

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**Question 179**

**The word TRADE is coded as XVEHI. How should the word PUBLIC be coded ?**

- A TYFPMG
- B SXLLQP
- C TYFMPG
- D SXEOLF

**Answer: A**

**Explanation:**

If The word TRADE is coded as XVEHI, we see a pattern in the form of each letter being represented by a letter that comes fourth in the sequence of the Alphabet. therefore PUBLIC will be coded as TYFPMG. hence the correct answer is option A.

**Question 180**

**If  $4 \times 6 \times 9 \times 1 = 4196$ ,  
 $2 \times 3 \times 7 \times 2 = 2273$ ,  
then  $1 \times 4 \times 8 \times 9 = ?$**

- A 1984
- B 9841
- C 1489
- D 8149

**Answer: A**

**Explanation:**

If  $4 \times 6 \times 9 \times 1 = 4196$ ,

$2 \times 3 \times 7 \times 2 = 2273$ ,

then a general pattern that can be seen is:

$A \times B \times C \times D = ADCB$ .

therefore  $1 \times 4 \times 8 \times 9 = 1984$ . hence the correct answer is option A.

**Question 181**

Anil had to travel 900 km. He hired a taxi for the first 350 km at the rate of 4.00 per km. Then he travelled by bus for 250 km and purchased a ticket of 70. He travelled the next 250 km by train and purchased a ticket of 50. Rest of the journey was performed by boat at 2 per km. What is the average cost of his journey per km ?

A 1.80

B 1.70

C 2.90

D 2.67

**Answer: A**

**Explanation:**

Total distance travelled by Anil = 900 km

Distance travelled by taxi = 350 at Rs 4/km

=> Total cost in taxi =  $350 \times 4 = \text{Rs } 1400$

Distance travelled by bus = 250 at Rs 70

=> Total cost in bus = Rs 70

Distance travelled by train = 250 at Rs 50

=> Total cost in train = Rs 50

Distance travelled by boat =  $900 - (350 + 250 + 250) = 50$  km at Rs 2/km

=> Total cost in boat =  $50 \times 2 = \text{Rs } 100$

Now total cost incurred by Anil =  $1400 + 70 + 50 + 100 = \text{Rs } 1,620$

=> Average cost =  $\frac{1620}{900} = \text{Rs } 1.80$

## SSC CGL Important Questions PDF

**Question 182**

The day before the day before yesterday is three days after Saturday. What day is it today?

A Thursday

B Friday

C Tuesday

D Wednesday

**Answer: B**

**Explanation:**

3 days after Saturday = Tuesday

Day before day before yesterday = 3 days before

Now, 3 days before today is Tuesday

=> Today is Friday.

Ans - (B)

**Question 183**

From the given alternatives select the word which can be formed using the letters of the given word. RAPPROCHEMENT

- A CANCEL
- B TAMPER
- C ROUGH
- D PERTAIN

Answer: B

**Explanation:**

all the words except option B contain letters that are not a part of the word RAPPROCHEMENT. hence the correct answer is option B.

**Question 184**

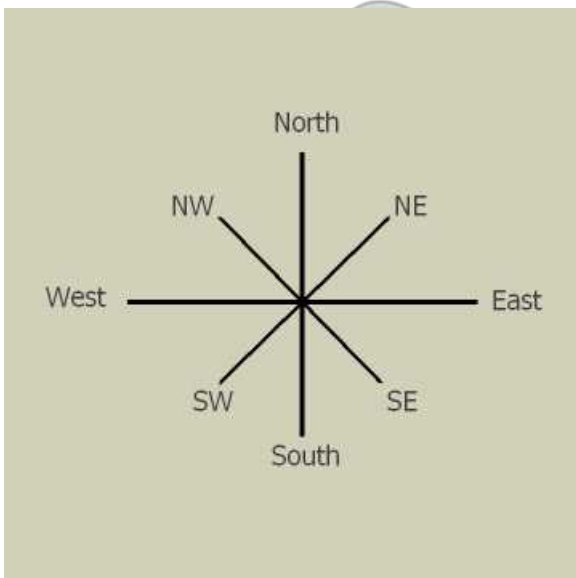
Ravi is facing East. He turns 90° in the anticlockwise direction and then another 180° turn in the same direction, finally he turns 45° in the clockwise direction. In which direction is he facing now ?

- A SouthWest
- B East
- C NorthWest
- D South

Answer: A

**Explanation:**

from the above description Ravi rotated a total of  $90+180-45=235$  degrees in the anti clockwise direction, hence the final position will be in the southwest direction. therefore the correct answer is option A.



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Question 185

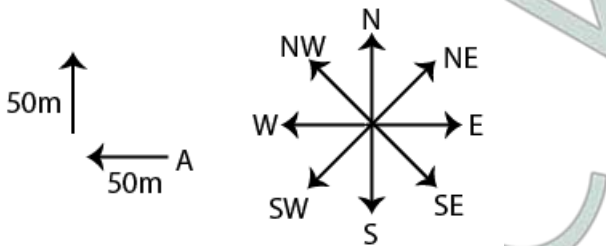
A's house is in Chennai and faces the sea. To visit his friend's house, he turns to the left, walks 50 metres and turns to the right and walks 50 metres. In which direction is his friend's house from his own house ?

- A NorthEast
- B SouthEast
- C NorthWest
- D SouthWest

Answer: C

Explanation:

he will be in the north west direction as shown , hence the correct answer is option C



Question 186

If A stands for '+', D for '-', M for 'x', V for '÷', G for '>', E for '=' and L for '<' then 20A4 is

- A L (21 D 3)
- B G (30 D 3)
- C G (21 V 3)
- D E (15 M 2)

Answer: C

Explanation:

Expression = 20A4

$$\equiv 20 + 4 = 24$$

(A) : L (21 D 3)

$$\equiv < (21 - 3) = 18$$

But,  $24 > 18$ , false

(B) : G (30 D 3)

$$\equiv > (30 - 3) = 27$$

But,  $24 < 27$ , false

(C) : G (21 V 3)

$$\equiv > (21 \div 3) = 7$$

Because  $24 > 7$ , true

=> Ans - (C)

Question 187

If the numbers from 4 to 55 which are divisible by 3 and also the numbers which contain 3 as one of the digits are removed, then how many numbers will be left ?



- A 25
- B 26
- C 23
- D 24

**Answer: A**

**Explanation:**

Numbers from 4 to 55 that are divisible by 3 = 6,9,12.....,54

=> Total nos. = 17

Numbers from 4 to 55 that contain digit '3' = 13,23,30,31,32.....53

=> Total nos. = 14

Numbers from 4 to 55 that are divisible by 3 and also contain digit '3' = 30,33,36,39

=> Total nos. = 4

Total numbers from 4 to 55 = 52

=> Required answer =  $52 - (17+14-4) = 25$

## General Science Notes for SSC CGL

**Question 188**

The sum of the squares of two consecutive positive numbers is 1861. What are the two numbers ?

- A 28 and 29
- B 26 and 27
- C 30 and 31
- D 32 and 33

**Answer: C**

**Explanation:**

Let two consecutive numbers be  $x$  and  $(x+1)$

Acc to ques :

$$\Rightarrow x^2 + (x+1)^2 = 1861$$

$$\Rightarrow 2x^2 + 2x + 1 - 1861 = 0$$

$$\Rightarrow x^2 + x - 930 = 0$$

$$\Rightarrow x^2 + 31x - 30x - 930 = 0$$

$$\Rightarrow x(x+31) - 30(x+31) = 0$$

$$\Rightarrow (x+31)(x-30) = 0$$

$$\Rightarrow x = 30, -31$$

Since, numbers are positive,  $\Rightarrow x = -31$  is not possible.

=> Numbers are = 30 & 31

**Question 189**

Select the missing number from the given responses.

|   |   |   |
|---|---|---|
| 6 | 4 | 5 |
| 3 | 2 | 1 |
| 8 | 5 | ? |

- A 7
- B 5
- C 11
- D 9

**Answer: B**

**Explanation:**

Let number in first row be 'x', in second row be 'y' and in third row be 'z'

The pattern followed is :  $x + y - 1 = z$

=> The missing number =  $5 + 1 - 1 = 5$

Ans - (B)

**Instructions**

In these questions, two statements are given, followed by two conclusions I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

**Question 190**

**Statements :**

1. All the educated persons follow the "public" rules.
2. Some of the educated persons follow the "Govt." rules.

**Conclusions :**

- I. Educated persons who follow Govt. rules also follow the public rules.
- II. Some do not follow Govt. rules but follow the public rules.

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

**Answer: C**

**Explanation:**

c: All educated persons follow the "public" rules and a part of educated persons follows the "Government" rules. Therefore, the educated persons who follow Government rules also follow the public rules. Therefore, Conclusion I follows.

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Question 191

Statements :

1. All lawyers are liars.
2. Some women are lawyers.

Conclusions :

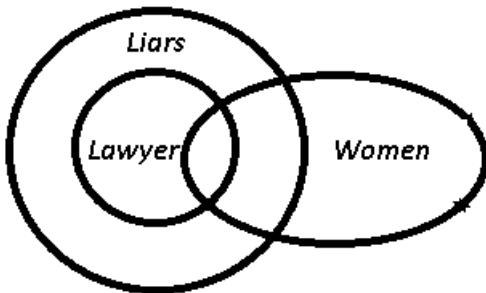
- I. Some women are liars.
- II. All liars are women.

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

Answer: C

Explanation:

The venn diagram for above statements is :



Conclusions :

- I. Some women are liars = true
- II. All liars are women = false

Thus, only conclusion I follows

=> Ans - (C)

Instructions

For the following questions answer them individually

Question 192

Some equations are solved on the basis of a certain system. Find out the correct answer for the unsolved equation on that basis.

$$3 + 8 + 5 + 5 = 36,$$

$$6 + 2 + 8 + 1 = 16,$$

$$8 + 5 + 9 + 5 = 58,$$

$$7 + 4 + 3 + 8 = ?$$

- A 35
- B 54
- C 34
- D 32

Answer: A

Explanation:

from the given patterns in the first three equations, a general rule can be formulated as:

$A+B+C+D = CxD + A+B$ . which when applied to  $7 + 4 + 3 + 8 = ?$  will be equal to  $3*8+7+4 = 35$ .

hence the correct answer is option A.

#### Question 193

Find three consecutive even numbers, the sum of whose squares is 116.

- A 8, 10, 12
- B 6, 8, 10
- C 2, 4, 6
- D 4, 6, 8

Answer: D

#### Explanation:

Let the three consecutive even numbers be  $(x-2)$ ,  $(x)$ ,  $(x+2)$

Acc to ques :

$$\Rightarrow (x-2)^2 + x^2 + (x+2)^2 = 116$$

$$\Rightarrow (x^2 - 4x + 4) + x^2 + (x^2 + 4x + 4) = 116$$

$$\Rightarrow 3x^2 = 116 - 8$$

$$\Rightarrow x^2 = 36$$

$$\Rightarrow x = \pm 6$$

Since, numbers are even, they are all positive

$$\Rightarrow \text{Numbers are } (6-2), (6), (6+2) = 4, 6, 8$$

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#### Question 194

If A denotes +, B denotes -, C denotes x and D denotes \*, then which of the following statements is true ?

- A  $9C9B9D9A9 = 17$
- B  $3A3B3C3A3D3 = 4$
- C  $8B6D2A4C3 = 15$
- D  $8A8B8C8 = -48$

Answer: D

#### Explanation:

For the given notations

option D will be equal to:  $8+8-8*8$ , which on solving by applying BODMAS will be equal to -48.

hence option D is true and is the correct answer.

#### Question 195

In a certain code of numbers, GREEN is written as 20, 9, 22, 22, 13. How would YELLOW be written in the code ?

- A 2, 26, 15, 15, 12, 4
- B 2, 5, 4, 14, 14, 10

C 2, 2, 5, 12, 12, 3

D 2, 9, 17, 17, 3, 7

Answer: A

Explanation:

Code for GREEN : 20, 9, 22, 22, 13

The pattern followed is that the the position of the letters from right end is given, i.e. Z = 1 , Y = 2 , X = 3 , ....., B = 25 , A = 26

Thus, Y -> 2

A -> 26

L -> 15

L -> 15

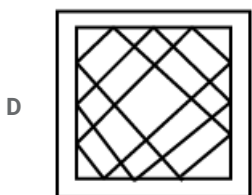
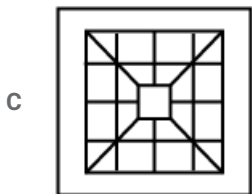
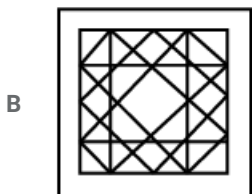
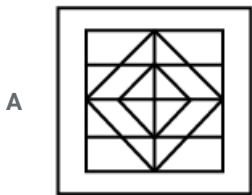
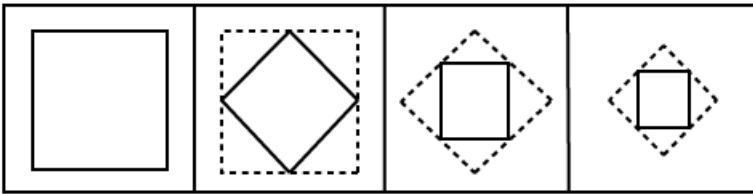
O -> 12

W -> 4

=> YELLOW : 2, 26, 15, 15, 12, 4

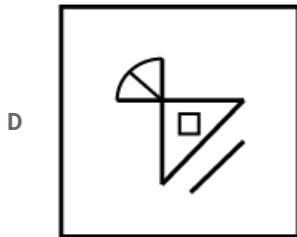
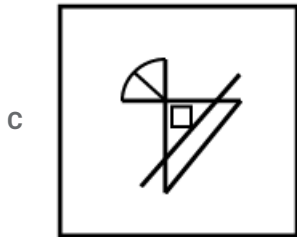
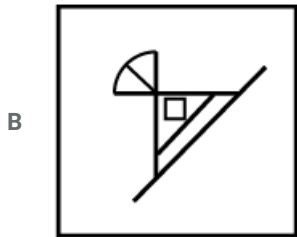
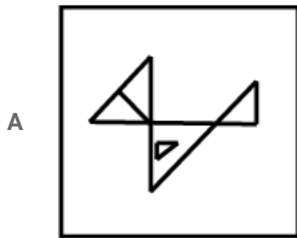
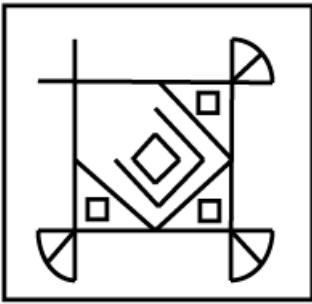
=> Ans - (A)

Question 196



Answer: B

Question 197



Answer: D

**Explanation:**

To complete the given figure, we need a quadrant of a circle.

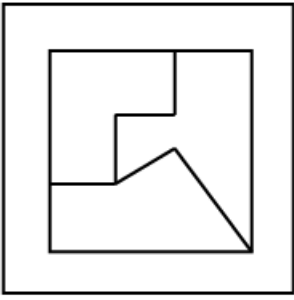
=> (A) is eliminated

Also, we need a right angled triangle attached to the quadrant and a line parallel to the hypotenuse outside the triangle.

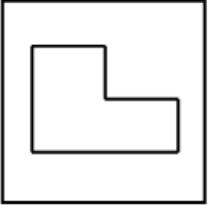
=> (B) & (C) are also eliminated.

Ans - (D)

Question 198



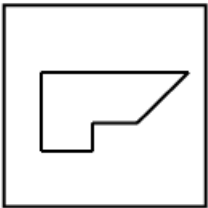
A



B



C

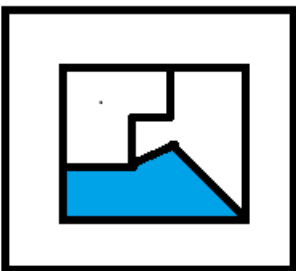


D

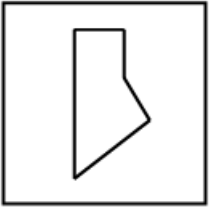


Answer: B

Explanation:



If we rotate the part shaded with blue in clockwise direction, the rotated figure will be :



=> Ans - (B)

**Question 199**

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 the 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. 7 can be represented by 31, 76, etc. and 'S' can be represented by 14, 99, etc. Similarly, you have to identify the set for the word GOVERN.

**Matrix I**

|   | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 0 | G | V | E | A | C |
| 1 | R | O | N | G | S |
| 2 | M | N | E | S | I |
| 3 | O | T | I | T | A |
| 4 | N | S | N | E | P |

**Matrix II**

|   | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|
| 5 | R | E | O | N | G |
| 6 | N | P | V | E | S |
| 7 | M | T | I | O | N |
| 8 | E | A | I | C | O |
| 9 | N | T | A | R | S |

- A 59, 89, 67, 22, 98, 21
- B 13, 78, 01, 67, 55, 79
- C 59, 11, 56, 22, 44, 65
- D 00, 11, 56, 02, 10, 58

**Answer: A**

**Explanation:**

- (A) - 59, 89, 67, 22, 98, 21 = **GOVERN**
- (B) - 13, 78, 01, 67, 55, 79 = GOVVRN
- (C) - 59, 11, 56, 22, 44, 65 = GOEPPN
- (D) - 00, 11, 56, 02, 10, 58 = GOEERN

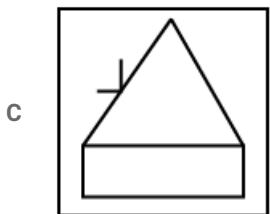
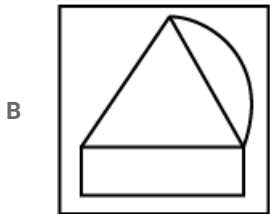
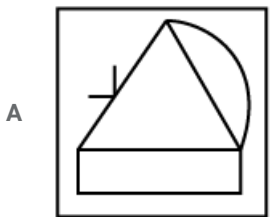
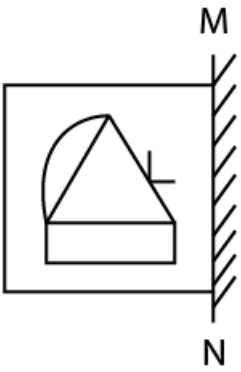
=> Ans - (A)

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Question 200

Which of the answer figures is exactly the mirror image of the question figure if a mirror is placed on the line MN ?



D None of these

Answer: A

**Explanation:**

A vertical mirror is placed, so object originally in the left will appear at right and vice-versa. The 'L' symbol will be reversed and will appear at left side of triangle and the semi circle will appear at the right side, so the second and third options are eliminated.

=> Ans - (A)

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