



## SSC CGL 2012 Tier 1 1 July NZ Evening V

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# General Awareness

## Instructions

For the following questions answer them individually

### Question 1

Which of the following has recently produced the first cloned camel ?

- A Dubai
- B Iran
- C Syria
- D U.S.A.

Answer: A

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### Question 2

If all the plants of the world dies, all the animals would also die due to shortage of

- A Cold air
- B Food
- C Oxygen
- D Shelter

Answer: B

### Question 3

Chlorination is

- A adding small amounts of chloride to contaminated water
- B a chemical reaction in which chlorine is formed
- C the formation of a salt containing chlorine
- D a process of converting chlorides into chlorine

Answer: A

### Question 4

Who decides the disputes regarding election of President ?

- A The Supreme Court
- B The Election Commission
- C The Parliament
- D Both Supreme Court and High Courts

Answer: A

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### Question 5

The growth of bacteria is measured by

- A hemacytometer
- B spectrophotometer
- C calorimeter
- D auxanometer

**Answer: D**

### Question 6

For which one of the following, are honey bees used ?

- A Apiculture
- B Horticulture
- C Pisciculture
- D Sericulture

**Answer: A**

### Question 7

Which one of the following is not an internal factor for industrial sickness ?

- A Diversion of funds
- B Technological Obsolescence
- C Wrong dividend policy
- D Mismanagement

**Answer: B**

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### Question 8

Who is the first Law Officer of the Government of India ?

- A Law Secretary
- B Union Law Minister
- C Attorney General of India
- D The Chief Justice of India

**Answer: C**

**Question 9**

The substance that causes the worst air pollution is

- A sulphur dioxide
- B carbon dioxide
- C carbon monoxide
- D smoke

**Answer: C**

**Question 10**

Mammals form urea in the

- A Kidney
- B Spleen
- C Bladder
- D Liver

**Answer: A**

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**Question 11**

Main cause for agitations for separate states in India is

- A growing regional imbalances
- B people's political consciousness
- C social inequalities
- D regionalism

**Answer: A**

**Question 12**

Vikramshila University was founded by

- A Kanishka
- B Dharampala
- C Pulakesin II
- D Chandra Gupta Maurya

**Answer: B**

**Question 13**

A government is classified as federal or unitary on the basis of

- A Relations between the centre and states
- B Relations between the executive and the legislature
- C Relations between three organs of government
- D None of these

**Answer: A**

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### Question 14

Choose the correct one from among the following

- A nirukta – metre
- B jyotisha – phonetics
- C vyakarana – grammar
- D Siksha – astrology

**Answer: C**

### Question 15

The New Zealanders are also known as

- A Kiwis
- B Arabs
- C Orientals
- D Sams

**Answer: A**

### Question 16

Near which one of the following cities, the Palitana Temples are situated ?

- A Mount Abu
- B Mearke
- C Ujj ain
- D Bhav Nagar

**Answer: D**

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### Question 17

Which one of the following is an essential ingredient of parliamentary government ?

- A A rigid constitution
- B Political parties
- C An Independent judiciary
- D A written constitution

**Answer: B**

**Question 18**

'El Nino effect' is closely associated with

- A Humboldt current
- B Equatorial counter current
- C Canaries current
- D Gulf current

**Answer: B**

**Question 19**

'EVM' stands

- A Electric Vending Machine
- B Electronic Vending Machine
- C Electronic Voting Machine
- D None of these

**Answer: C**

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**Question 20**

JDBC stands for

- A Java Developer Connectivity
- B Java Database Connectivity
- C Java Developing Connectivity
- D Java Data Base Conductivity

**Answer: B**

**Question 21**

'Milk of magnesia' is a suspension of

- A Magnesium carbonate
- B Magnesium hydroxide

- C Magnesium chloride
- D Magnesium sulphate

**Answer: B**

**Question 22**

**Pik globosa is used as biofilter in cleaning pollution of water by:**

- A Mercury
- B Arsenic
- C Cadmium
- D Algal blooms

**Answer: C**

## General Science Notes for SSC CGL

**Question 23**

**Find the odd one out:**

- A IDBI - Financial assistance to large industries
- B SIDBI - Financial assistance to small industries
- C FCI - Financial assistance to foodgrains merchants
- D EXIM Bank - Financial assistance to exporters and importers

**Answer: C**

**Question 24**

**The word 'Secular' is a part of the Preamble of the Constitution of India**

- A after the 44th amendment
- B after the 73rd amendment
- C from the date of implementation
- D after the 42nd amendment

**Answer: D**

**Question 25**

**Chemical name of Plaster of Paris is**

- A Hydrated calcium carbonate
- B Calcium hydrate
- C Calcium sulphate hemihydrate
- D Calcium sulphate

Answer: C

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### Question 26

The tributary of River Indus which flows through Himachal Pradesh is

- A Sulej
- B Beas
- C Ravi
- D Hunza

Answer: A

### Question 27

Acidity of rain is measured by

- A Hygrometer
- B Ammeter
- C pHmeter
- D Barometer

Answer: C

### Question 28

Which revenue earned by Union Government is not distributed among State Governments ?

- A Excise duty
- B Income tax
- C Customs duty
- D None of these

Answer: C

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### Question 29

The world's fastest growing water plant is

- A Amazon water lily
- B Water hyacinth
- C Utricularia
- D Water Chestnut

Answer: B



**Question 30**

The contents of memory will not be lost, when the power goes off in

- A ROM
- B EPROM
- C EEPROM
- D All the above

**Answer: A**

**Question 31**

The Programme which is being implemented in all the districts of the country is:

- A Rajiv Gandhi Gramin Vidyutikaran Yojna
- B Sarva Shiksha Abhiyan
- C M.G.N.R.E.G. Programme
- D Navoday Vidyalaya

**Answer: B**

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**Question 32**

Who was the first envoy of the East India Company to meet Jahangir in 1608 A.D ?

- A William Edwards
- B Sir Thomas Roe
- C Edward Terry
- D William Hawkins

**Answer: D**

**Question 33**

As per 2011 census, in India the number of females per thousand males is

- A 940
- B 934
- C 933
- D 972

**Answer: A**

**Question 34**

Law of 'Use and disuse' was proposed by :

- A Lederberg
- B Lamarck
- C Darwin
- D Hugo De Vries

**Answer: B**

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### Question 35

Which one of the following Cricketers has been declared by the ICC as 'Cricketer of the Twentieth Century' ?

- A Sachin Tendulkar
- B Kapil Dev
- C Rahul Dravid
- D Anil Kumble

**Answer: B**

### Question 36

The rocket which gives us information about Mars is :

- A Discovery
- B Insat 4
- C Atlas 5
- D Cassinie

**Answer: C**

### Question 37

Wanchoo Committee dealt with

- A Agricultural Taxation
- B Direct Taxes
- C Monopolies and Trade Practices
- D Agricultural Prices

**Answer: B**

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### Question 38

Carbohydrates are compounds of

- A Carbon, oxygen and hydrogen
- B Carbon, nitrogen and hydrogen
- C Carbon and nitrogen
- D Carbon and hydrogen

Answer: A

**Question 39**

If a bacterium cell divides in every 20 minutes, how many bacteria will be formed in two hours?

- A 16
- B 8
- C 64
- D 4

Answer: C

**Question 40**

The International agreement to reduce greenhouse gases between 2008 - 2012 is known as :

- A Rule of 70
- B Rio Protocol
- C Kyoto Protocol
- D Agenda 21

Answer: C

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**Question 41**

A person opens his mouth on hearing a thunder in order to

- A equalise pressure of air on both sides of the ear drum
- B receive more sound
- C allow air to come out of the mouth
- D overcome fear

Answer: A

**Question 42**

When ice is heated from 0° C to 10° C, the volume of water

- A Decreases steadily
- B First increases then decreases

C First decreases then increases

D Increases steadily

**Answer: B**

**Question 43**

**Through which states does the river Chambal flows ?**

A M.P., Gujarat, U.P

B Rajasthan, M.P., Bihar

C Gujarat, M.P., Chhattisgarh

D U.P., M.P., Rajasthan

**Answer: D**

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**Question 44**

**As per the 2011 population census, the most populous state in the country is**

A Madhya Pradesh

B Uttar Pradesh

C West Bengal

D Rajasthan

**Answer: B**

**Question 45**

**The state of Jhansi was made a part of the British empire in India through the :**

A Doctrine of Lapse

B Policy of Subsidiary Alliance

C War against Rani Lakshmi Bai

D None of these

**Answer: A**

**Question 46**

**The famous book "A Better India, A Better World" has been written by :**

A Azim Premji

B N. R Narayana Murthy

C Praveen Mahapatra

D Rajiv Sikri

Answer: B

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### Question 47

Simple Goitre is a disease affecting :

- A Tear glands
- B Liver
- C Thyroid glands
- D Gums

Answer: C

### Question 48

Two bodies of the same mass are thrown with equal speed from the top of a tower simultaneously. One body (x) is thrown vertically downwards. The other (y) is thrown horizontally.

- A Both reaches ground with same Kinetic energy
- B x reaches ground with greater Kinetic energy
- C y reaches ground with greater Kinetic energy
- D Both x and y reaches ground simultaneously

Answer: A

### Question 49

An apparatus used for locating submerged objects is known as :

- A sonar
- B quasar
- C pulsar
- D radar

Answer: A

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### Question 50

Which of the following are wrongly matched ?

- (i) Tropic of Cancer -  $23\frac{1}{2}^{\circ}$  N latitude
- (ii) Tropic of Capricorn -  $66\frac{1}{2}^{\circ}$  N latitude
- (iii) International Date line -  $0^{\circ}$  longitude
- (iv) Antarctic Circle -  $66\frac{1}{2}^{\circ}$  S latitude

- A (i)
- B (ii) and (iii)

C (i), (ii) and (iv)

D None of these

Answer: B

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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, then your answer is (d), i.e. No error.

#### Question 51

**Our history can be seen as a long evolutionary dialectical development (a)/ in which there have been (b)/ a painstaking forging of rational and moral self (c)/. No error (d)**

A Our history can be seen as a long evolutionary dialectical development

B in which there have been

C a painstaking forging of rational and moral self

D No Error

Answer: B

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#### Question 52

**Our knowledge of history does not come to (a)/ our help and some times we even fail to (b)/ remember who invented America (c)/ No error (d)**

A Our knowledge of history does not come to

B our help and some times we even fail to

C remember who invented America.

D No Error

Answer: C

#### Question 53

**My grandfather owns (a)/ fifty acre (b)/ of wetland (c)/. No error (d)**

A My grandfather owns

B fifty acre

C of wetland

D No error

Answer: B

**Question 54**

Belgian chocolate is considered (a)/ by many to be finer (b)/ than any others in the World (c)/. No error (d)

- A Belgian chocolate is considered
- B by many to be finer
- C than any others in the World
- D No Error

**Answer: B**

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**Question 55**

Indian scientists are in no way (a)/ inferior than (b)/ any other scientist in the world (c)/. No error (d)

- A Indian scientists are in no way
- B inferior than
- C any other scientist in the world
- 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**

We didn't \_\_\_\_\_ the programme to be such a huge success.

- A except
- B expect
- C access
- D accept

**Answer: B**

**Question 57**

We should \_\_\_\_\_ opportunities as they arise.

- A cease
- B size
- C sneeze
- D seize

**Answer: D**

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### Question 58

The students aren't prepared \_\_\_ the examination.

- A to listen
- B to work
- C to take
- D to give

Answer: C

### Question 59

The government, in a bid to make Bihar, a preferred investment destination, has \_\_\_ major schemes to create infrastructure at different stages.

- A opposed
- B opened
- C pushed
- D launched

Answer: D

### Question 60

I suffer from no \_\_\_ about my capabilities.

- A doubts
- B hallucinations
- C imaginations
- D illusions

Answer: D

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### 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

#### Inadvertent

- A unexpected
- B unintentional
- C undisturbed



D ignorant

**Answer: B**

**Question 62**

**Fortitude**

A courage

B protection

C safety

D similarity

**Answer: A**

**Question 63**

**Duplicity**

A artlessness

B deceit

C cleverness

D repetition

**Answer: B**

## SSC CGL Important Questions PDF

**Question 64**

**Fidelity**

A resourcefulness

B strength

C weakness

D faithfulness

**Answer: D**

**Question 65**

**Vanguard**

A officer

B flag bearer

C pioneer

D race driver

**Answer: B**

**Instructions**

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

**Question 66**

**Taciturn**

- A silent
- B talkative
- C immense
- D judge

**Answer: B**

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**Question 67**

**Artisan**

- A skilled sculptor
- B learned person
- C ignorant villager
- D unskilled labour

**Answer: D**

**Question 68**

**Amicable**

- A friendly
- B haughty
- C unpleasant
- D hostile

**Answer: D**

**Question 69**

**Mitigate**

- A aggravate
- B allay
- C alleviate
- D abate

**Answer: A**



## General Science Notes for SSC CGL

### Question 70

#### Aversion

- A awareness
- B hatred
- C liking
- D avoidance

Answer: C

#### Instructions

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

### Question 71

He was **out of spirits** for a few days after his defeat.

- A gloomy
- B sober
- C lifeless
- D uninvolved

Answer: A

### Question 72

When the family in the next house **packed off** at midnight, I began to smell a rat.

- A to suspect a trick
- B to misunderstand
- C to see hidden meaning
- D to smell a bad smell

Answer: A

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### Question 73

At first, there was a show of resistance to the new rule issued by the Government, but the movement had no backbone and speedily collapsed.

- A justification
- B impact
- C strength

D support

Answer: C

**Question 74**

The cops were on their toes throughout the day.

A eager

B alert

C harried

D quick

Answer: B

**Question 75**

The minister assured the agitating employees that he would look into their demands sympathetically.

A discuss

B watch

C grant

D examine

Answer: D

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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**

The prolific writer's work is published every year.

A exquisite

B didactic

C great

D No improvement

Answer: D

**Question 77**

Those plucking flowers are liable for punishable.

A are liable for punishable

B are liable for punishing

C are liable to be punished

D are viable for punishment

**Answer: C**

**Question 78**

**His lust for power brought about his downfall.**

A intense desire

B desire for power

C desire for sex

D No improvement

**Answer: D**

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**Question 79**

**I'll meet the raging of the skies, but not an angry father.**

A sunshine

B rain

C anger

D No improvement

**Answer: C**

**Question 80**

**When we see black smoke near the wing of the plane, we were certain that disaster was imminent.**

A When we were seeing

B When we saw

C When we had seen

D No improvement

**Answer: B**

**Instructions**

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

**Question 81**

**Government by a small group of all powerful persons**

A monarchy

B democracy

C anarchy

D oligarchy

Answer: D

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Question 82

One indifferent to art and literature is

- A critic
- B philistine
- C scholar
- D aromatic

Answer: B

Question 83

Open to injury or criticism

- A vulnerable
- B naive
- C sensitive
- D invincible

Answer: A

Question 84

One who collects coins as a hobby

- A ornithologist
- B statistician
- C numismatist
- D philatelist

Answer: C

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Question 85

A narrow piece of land connecting two large masses of land

- A isthmus
- B continent
- C gulf
- D peninsula

Answer: A

**Instructions**

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

**Question 86**

- A beneficil
- B beneficial
- C benifical
- D benificial

**Answer: B**

**Question 87**

- A avericious
- B avaricious
- C avarisious
- D averisious

**Answer: B**

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**Question 88**

- A internaly
- B coldly
- C fortunetely
- D uniquely

**Answer: D**

**Question 89**

- A affectionately
- B afectionately
- C affectionnality
- D affactionately

**Answer: A**

**Question 90**

- A apprehension

- B apprihension
- C aprihension
- D apprehenson

**Answer: A**

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### Instructions

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

If this is so, if to read a book as it should be read calls for the rarest qualities of imagination, insight and judgement. You may perhaps conclude that literature is a very complex art and that it is unlikely that we shall be able, even after a life time of reading, to make any valuable contribution to its criticism. We must remain readers, we shall not put on the further glory that belongs to those rare beings who are also critics.

### Question 91

**What is the opinion of most of the people about literature?**

- A That it is not an easy one to contribute anything
- B That it is to some extent difficult to understand
- C That no contribution is necessary for literature
- D That it is very easy to understand

**Answer: B**

### Question 92

**The antonym of conclude is**

- A commence
- B exclude
- C end
- D include

**Answer: A**

### Question 93

**According to the author**

- A It is not possible for most of us to contribute anything for criticism
- B It is possible to do something
- C It is not even easy to understand literature
- D Most of the people can contribute to criticism of literature

**Answer: A**



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### Question 94

The author feels that we cannot have the greatness of

- A writers
- B critics
- C publishers
- D readers

**Answer: B**

### Question 95

What are the qualities required for reading a book ?

- A proper judgement
- B imagination
- C imagination, insight and judgement
- D None of the above

**Answer: C**

### Instructions

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

These days not even many politicians deny that the oceans are ill. Protecting the health of coastal waters is now a matter of national policy in dozens of countries including the U.S., and world leaders are beginning to prescribe a revolutionary remedy that conservationists have been promoting for years: marine planning and zoning.

The idea is a natural extension of management policies that have guided the development of cities and landscapes for nearly a century. Zoning advocates envision a mosaic of regional maps in which every watery space on the planet is designated for a particular purpose. Drilling and mining would be allowed only in certain parts of the ocean; fishing in others. The most critically threatened areas would be virtually offlimits.

Whereas people can easily find maps telling them what they can do where on land, the marine realm is a hodgepodge of rules emanating from an army of agencies, each one managing a single use or symptom.

### Question 96

Marine planning and zoning is a\_\_\_ to protect the coastal waters.

- A conservationists' discovery
- B marine project
- C revolutionary remedy
- D national policy of the US

**Answer: C**

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**Question 97**

These days \_\_\_\_ that the oceans are not in good health.

- A most of the politicians agree
- B all politicians agree
- C nobody agrees
- D everybody agrees

**Answer: A**

**Question 98**

'Marine realm' is a hodgepodge of rules means

- A seas need to be cleaned
- B there are no uniform laws governing the seas.
- C there is total anarchy
- D critical areas are not being looked after properly.

**Answer: B**

**Question 99**

Seazoning is all about \_\_\_\_ .

- A drilling and sea mining
- B conserving the environment
- C banning fishing in the sea
- D dividing watery space for specific purposes

**Answer: D**

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**Question 100**

'Conservationist' means \_\_\_\_.

- A a marine engineer .
- B one who looks after others
- C one who prevents something from destruction
- D a proficient speaker

**Answer: C**

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## Quant

### Instructions

For the following questions answer them individually

### Question 101

The average of  $1^2, 2^2, 3^2, 4^2, 5^2, 6^2, 7^2, 8^2, 9^2, 10^2$  is :

- A 42.5
- B 46.5
- C 50.5
- D 38.5

**Answer: D**

### Explanation:

sum of squares of first n natural numbers are  $\frac{(n)(n+1)(2n+1)}{6}$

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

we are given numbers as  $1^2, 2^2, 3^2, 4^2, 5^2, 6^2, 7^2, 8^2, 9^2, 10^2$

$$\text{Sum of 10 elements} = \frac{10 \times 11 \times 21}{6} = 385$$

$$\text{average} = \frac{385}{10} = 38.5$$

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### Question 102

The distance between the points (0, 0) and the intersecting point of the graphs of  $x=3$  and  $y=4$  is

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

**Answer: D**

### Explanation:

The lines  $x=3$  and  $y=4$  will intersect at the point (3,4)

$$x_1 = 0$$

$$y_1 = 0$$

$$x_2 = 3$$

$$y_2 = 4$$

Using distance formula

$$\text{Distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$= \sqrt{(3 - 0)^2 + (4 - 0)^2}$$

$$= \sqrt{9 + 16}$$

$$= \sqrt{25} = 5$$

Hence option D is the correct answer.

### Question 103

A certain number when divided by 899 leaves the remainder 65. When the same number is divided by 31, the remainder is :

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

**Answer: B**

**Explanation:**

if the number N is divided by 899 and leaves a remainder 65 then  $N = 899K + 65$   
 and hence when N will be divided by 31  
 remainder of  $\frac{899K+65}{31} = \text{Remainder of } \frac{65}{31}$  as 899 is completely divisible by 31  
 and hence remainder is 3

**Question 104**

If G is the centroid and AD, BE, CF are three medians of triangle ABC with area 72 sq cm , then the area of triangle BDG is :

- A 12 sq cm
- B 16 sq cm
- C 24 sq cm
- D 8 sq cm

**Answer: A**

**Explanation:**

The area of triangle formed by any two vertices and centroid is  $(1/3)$  times the area of ABC.  
 Also the median divides the triangle into two equal areas.  
 So, area of BDG =  $(1/6)$  times of ABC  
 $= (1/6)*72$   
 $= 12$

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**Question 105**

If  $a + b = 6$ ,  $a - b = 2$ , then the value of  $2*(a^2 + b^2)$  is :

- A 20
- B 30
- C 40
- D 10

**Answer: C**

**Explanation:**

here we are given with  
 $a + b = 6 \dots\dots(1)$   
 $a - b = 2 \dots(2)$   
 adding both equations

$$2a = 8$$

$$a = 4$$

$$\text{so } b = 2$$

$$\text{we need to calculate } 2 \times (a^2 + b^2) = 2 \times (4^2 + 2^2) = 40$$

**Question 106**

The odd element in the sequence 3, 7, 13, 21, 33, 43, 57, is :

A 21

B 33

C 43

D 7

**Answer: B**

**Explanation:**

here the given sequence is 3, 7, 13, 21, 33, 43, 57

$$7 - 3 = 4$$

$$13 - 7 = 6$$

$$21 - 13 = 8$$

$$33 - 21 = 12$$

$$43 - 33 = 10$$

$$57 - 43 = 14$$

here we can see that difference between consecutive terms is increasing by 2 every time but due to presence of 33 the pattern is not getting formed and hence 31 is the right number in place of 33 and hence odd one out is 33

**Question 107**

The tangents drawn at the points A and B of a circle centred at O meet at P. If  $\angle AOB = 120^\circ$  then  $\angle APB : \angle APO$  is :

A 2 : 5

B 3 : 2

C 4 : 1

D 2 : 1

**Answer: D**

**Explanation:**

Since, O is the centre of the circle .  $OA=OB=\text{radius}$  .

So, PO will be angular bisector of APB.

Hence,  $\angle APB : \angle APO = 2:1$

## SSC CGL Tier-2 Previous Papers PDF

**Question 108**

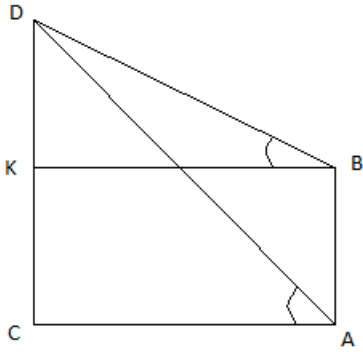
From the top of a cliff 90 metre high, the angles of depression of the top and bottom of a tower are observed to be  $30^\circ$  and  $60^\circ$  respectively. The height of the tower is :

A 45 m

- B 60 m
- C 75 m
- D 30 m

Answer: B

Explanation:



Given: CD = 90 meter;  
 $\angle KBD = 30^\circ$  &  $\angle CAD = 60^\circ$

$$BD \times \cos 30^\circ = BK$$

$$AD \times \cos 60^\circ = AC$$

$$BD \times \sin 30^\circ = DK$$

$$AD \times \sin 60^\circ = DC$$

$$BK = AC$$

$$BD \times \cos 30^\circ = AD \times \cos 60^\circ$$

$$\sqrt{3} \times BD = AD \quad (1)$$

Now, DC = DK + KC

$$DC - DK = AB \text{ [As, KC = AB]}$$

$$(AD \times \sin 60^\circ) - (BD \times \sin 30^\circ) = AB$$

Using equation (1)

$$(\sqrt{3} \times BD \times \frac{\sqrt{3}}{2}) - BD = AB(3 \times BD \times 32) - BD = AB$$

$$AB = BD \quad (2)$$

Now,  $AD \times \sin 60^\circ = DC = 90$  meter

$$AD = \frac{180}{\sqrt{3}}$$

From (1)

$$BD = AD / \sqrt{3}$$

$$= 180 / \sqrt{3} \times \sqrt{3} = 60 \text{ meter}$$

From (2) AB = 60 meter

Option B is the correct answer.

#### Question 109

The least positive integer which is a perfect square and also divisible by each of 21, 36 and 66 is :

- A 186624
- B 213444
- C 254016
- D 156816

Answer: B

Explanation:

$$21 = 3 \times 7$$

$$36 = 3^2 \times 2^2$$

$$66 = 2 \times 3 \times 11$$

and hence minimum number divisible by these numbers and perfect square is  $3^2 \times 2^2 \times 7^2 \times 11^2$   
= 213444

#### Question 110

The value of  $x$  when 5% of  $\sqrt{2x}$  is 0.01 will be :

A 0.03

B 0.02

C 0.01

D 0.05

Answer: B

#### Explanation:

It is given that 5% of  $\sqrt{2x}$  is 0.01

$$\frac{5}{100} \times \sqrt{(2x)} = 0.01$$

$$x = 0.02$$

### SSC CGL Important Questions PDF

#### Question 111

If  $\sqrt{\frac{x-a}{x-b}} + \frac{a}{x} = \sqrt{\frac{x-b}{x-a}} + \frac{b}{x}$  and  $b \neq a$ , then the value of  $x$  is

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

B  $\frac{ab}{a+b}$

C 1

D  $\frac{a}{a+b}$

Answer: B

#### Question 112

If  $x = \frac{2\sqrt{24}}{\sqrt{3}+\sqrt{2}}$ , then the value of  $\frac{x+\sqrt{8}}{x-\sqrt{8}} + \frac{x+\sqrt{12}}{x-\sqrt{12}}$  is

A 1

B 2

C 3

D -2

Answer: B

#### Explanation:

Given :  $x = \frac{2\sqrt{24}}{\sqrt{3}+\sqrt{2}}$

$\Rightarrow x = \frac{2\sqrt{24}}{\sqrt{3}+\sqrt{2}} \times \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}-\sqrt{2}}$

$\Rightarrow x = \frac{2\sqrt{24}(\sqrt{3}-\sqrt{2})}{3-2}$

$\Rightarrow x = 2\sqrt{72} - 2\sqrt{48}$

$\Rightarrow x = 6\sqrt{8} - 4\sqrt{12}$  -----(i)

To find :  $\frac{x+\sqrt{8}}{x-\sqrt{8}} + \frac{x+\sqrt{12}}{x-\sqrt{12}}$

$= \frac{6\sqrt{8}-4\sqrt{12}+\sqrt{8}}{6\sqrt{8}-4\sqrt{12}-\sqrt{8}} + \frac{6\sqrt{8}-4\sqrt{12}+\sqrt{12}}{6\sqrt{8}-4\sqrt{12}-\sqrt{12}}$  [Using (i)]

$= \frac{7\sqrt{8}-4\sqrt{12}}{5\sqrt{8}-4\sqrt{12}} + \frac{6\sqrt{8}-3\sqrt{12}}{6\sqrt{8}-5\sqrt{12}}$

$= \frac{(336-35\sqrt{96}-24\sqrt{96}+240)+(240-15\sqrt{96}-24\sqrt{96}+144)}{240-25\sqrt{96}-24\sqrt{96}+240}$

$= \frac{960-98\sqrt{96}}{480-49\sqrt{96}}$

$= \frac{2(480-49\sqrt{96})}{480-49\sqrt{96}} = 2$

$\Rightarrow$  Ans - (B)

**Question 113**

If  $a = \frac{2+\sqrt{3}}{2-\sqrt{3}}$  and  $b = \frac{2-\sqrt{3}}{2+\sqrt{3}}$ , then the value of  $a^2 + b^2 + a \times b$  is

- A 185
- B 195
- C 200
- D 175

**Answer: B**

**Explanation:**

$a = \frac{2+\sqrt{3}}{2-\sqrt{3}}$  on rationalising we will get  $a = (2 + \sqrt{3})^2$

$b = \frac{2-\sqrt{3}}{2+\sqrt{3}}$  on rationalizing we will get  $b = (2 - \sqrt{3})^2$

now putting values of a and b in ,  $a^2 + b^2 + a \times b$

$a^2 + b^2 + a \times b = 195$

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**Question 114**

If  $\sec\theta - \operatorname{cosec}\theta = 0$ , then the value of  $(\sec\theta + \operatorname{cosec}\theta)$  is :

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



D  $2 \times \sqrt{2}$

Answer: D

Explanation:

If  $\sec\theta - \operatorname{cosec}\theta = 0$  Then  $\theta = 45^\circ$

$$\sec 45^\circ = \operatorname{cosec} 45^\circ = \sqrt{2}$$

$$\sec\theta + \operatorname{cosec}\theta = 2 \times \sqrt{2}$$

Hence Option D is the correct answer.

Question 115

A and B can separately do a piece of work in 20 and 15 days respectively. They worked together for 6 days after which B was replaced by C. The work was finished in next 4 days. The number of days in which C alone could do the work is :

A 35 days

B 30 days

C 45 days

D 40 days

Answer: D

Explanation:

$$\text{Work done by A in 1 day} = \frac{1}{20}$$

$$\text{Work done by B in 1 day} = \frac{1}{15}$$

$$\text{A and B worked together for 6 days. Work completed in 6 days} = 6\left(\frac{1}{20} + \frac{1}{15}\right)$$

$$= 6\left(\frac{1}{20} + \frac{1}{15}\right) = \frac{7}{60} = \frac{7}{60}$$

A and C worked together for next 4 days to complete the remaining  $\frac{3}{10}$  th of the work.

$$4\left(\frac{1}{20} + \frac{1}{C}\right) = \frac{3}{10}$$

$$\frac{1}{5} + \frac{4}{C} = \frac{3}{10}$$

$$\frac{4}{C} = \frac{3}{10} - \frac{1}{5}$$

$$\frac{4}{C} = \frac{1}{10}$$

$$\frac{1}{C} = \frac{1}{40}$$

Hence C alone would take 40 days to complete the entire work.

Option D is the correct answer.

Question 116

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

A  $\sqrt{2}$

B  $\sqrt{3}$

C  $\sqrt{6}$

D 2

Answer: D

Explanation:

$$\text{Given : } x = \frac{2\sqrt{6}}{\sqrt{3}+\sqrt{2}}$$

$$\Rightarrow x = \frac{2\sqrt{6}}{\sqrt{3}+\sqrt{2}} \times \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}-\sqrt{2}}$$

$$\Rightarrow x = \frac{2\sqrt{6}(\sqrt{3}-\sqrt{2})}{3-2}$$

$$\Rightarrow x = 2\sqrt{18} - 2\sqrt{12}$$

$$\Rightarrow x = 6\sqrt{2} - 4\sqrt{3} \text{-----(i)}$$

To find :  $\frac{x+\sqrt{2}}{x-\sqrt{2}} + \frac{x+\sqrt{3}}{x-\sqrt{3}}$

$$= \frac{6\sqrt{2}-4\sqrt{3}+\sqrt{2}}{6\sqrt{2}-4\sqrt{3}-\sqrt{2}} + \frac{6\sqrt{2}-4\sqrt{3}+\sqrt{3}}{6\sqrt{2}-4\sqrt{3}-\sqrt{3}} \quad [\text{Using (i)}]$$

$$= \frac{7\sqrt{2}-4\sqrt{3}}{5\sqrt{2}-4\sqrt{3}} + \frac{6\sqrt{2}-3\sqrt{3}}{6\sqrt{2}-5\sqrt{3}}$$

$$= \frac{(84-35\sqrt{6}-24\sqrt{6}+60)+(60-15\sqrt{6}-24\sqrt{6}+36)}{60-25\sqrt{6}-24\sqrt{6}+60}$$

$$= \frac{240-98\sqrt{6}}{120-49\sqrt{6}}$$

$$= \frac{2(120-49\sqrt{6})}{120-49\sqrt{6}} = 2$$

$\Rightarrow$  Ans - (D)

## General Science Notes for SSC CGL

### Question 117

Side AB of rectangle of ABCD is divided into four equal parts by points X, Y, Z respectively. The ratio of the areas of Triangle XYZ and the rectangle ABCD is ?

A  $\frac{1}{7}$

B  $\frac{1}{6}$

C  $\frac{1}{9}$

D  $\frac{1}{8}$

**Answer: D**

**Explanation:**

$$\begin{aligned} \text{ratio of their areas} &= \frac{\frac{1}{2}bh}{\frac{1}{2} \times \frac{1}{4}AB \times BC} \\ &= \frac{AB \times BC}{AB \times BC} \\ &= 1:8 \end{aligned}$$

### Question 118

If the length of a chord of a circle, which makes an angle  $45^\circ$  with the tangent drawn at one end point of the chord, is 6cm, then the radius of the circle is :

A  $6\sqrt{2}$  cm

B 5 cm

C  $3\sqrt{2}$  cm

D 6 cm

**Answer: C**

**Explanation:**

Let the chord AB = 6 . 'M' be it's midpoint . 'O' be the centre. The tangent MN meets at B and OB makes  $90^\circ$  . Given that angle by chord

at  $B = 45^\circ$ .

So, angle OAM =  $45^\circ =$  angle BOM. Also, MB = 3.

$$\frac{OB}{\sin 90} = \frac{3}{\sin 45}$$

we get  $OB = 3\sqrt{2}$

#### Question 119

A man buys one table and one chair for Rs. 500. He sells the table at a loss of 10% and the chair at a gain of 10%. He still gains Rs. 10 on the whole. The cost price of the chair is:

- A Rs. 250
- B Rs. 300
- C Rs. 350
- D Rs. 200

**Answer: B**

#### Explanation:

If the CP of the chair be Rs.  $x$  then,

$$\text{Total SP} = x \cdot 0.9 + (500 - x) \cdot 1.1$$

So,,  $x =$  Rs. 300.

## Free SSC Study Material (18,000 Solved Questions)

#### Question 120

The three medians AD, BE and CF of triangle ABC intersect at point G. If the area of triangle ABC is 60 sq.cm. then the area of the quadrilateral BDGF is :

- A 10 sq.cm
- B 15 sq.cm
- C 20 sq.cm
- D 30 sq.cm

**Answer: C**

#### Explanation:

Given  $\Delta ABC$ , G is the centroid and AD, BE, CF are three medians and the area of  $\Delta AGE = 10$

As we know the median divides the triangle into 6 triangles of equal area

Hence area of the quadrilateral BDGF =  $2 \cdot \Delta AGE = 2 \cdot 10$

area of the quadrilateral BDGF = 20

#### Question 121

The rate of simple interest at which a sum of money becomes three times in 25 years is :

- A 6%
- B 8%
- C 5%
- D 4%

**Answer: B**

**Explanation:**

Let the rate of interest be  $r\%$

as the money is becoming 3 times the investment in 25 years it means we are generating an interest of 2times the principal amount in 25 years

$$2p = \frac{p \times r \times t}{100}$$

$t = 25$  years is given

$$r = 8\%$$

**Question 122**

If  $p \sin \theta = \sqrt{3}$  and  $p \cos \theta = 1$ , then the value of  $p$  is :

A  $\frac{1}{2}$

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

C  $-\frac{1}{\sqrt{3}}$

D 2

**Answer: D**

**Explanation:**

$$p \sin \theta = \sqrt{3} \text{ and } p \cos \theta = 1$$

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

$$\theta = 60^\circ$$

$$p \cos \theta = 1$$

$$p \cos 60^\circ = 1$$

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

$$p = 2$$

Hence Option D is the correct answer

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**Question 123**

ABCD is a trapezium, such that  $AB = CD$  and  $AD$  is parallel to  $BC$ .  $AD = 5$  cm,  $BC = 9$  cm. If area of ABCD is 35 sq.cm, then  $CD$  is :

A  $\sqrt{29}$  cm

B 5 cm

C 6 cm

D  $\sqrt{21}$  cm

**Answer: A**

**Explanation:**

$$\text{Area} = \frac{1}{2} \times (a + b) \times h$$

$$35 = \frac{1}{2} \times (5 + 9) \times h$$

$$h = \frac{70}{14} = 5$$

$$CD = \sqrt{h^2 + (2)^2} = \sqrt{29}$$

**Question 124**

If  $x \sin^3 \theta + y \cos^3 \theta = \sin \theta \cos \theta \neq 0$  and  $x \sin \theta - y \cos \theta = 0$ , then value of  $(x^2 + y^2)$  is

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

**Answer: A**

**Explanation:**

Given,  $x\sin\theta - y\cos\theta = 0$

$$y = x\sin\theta/\cos\theta \Rightarrow y = x\tan\theta$$

Given the expression:

$$x\sin^3\theta + y\cos^3\theta = \sin\theta\cos\theta$$

Replacing the value of y we get,

$$x\sin^3\theta + (x\sin\theta/\cos\theta)\cos^3\theta = \sin\theta\cos\theta$$

$$x\sin^3\theta + x\sin\theta\cos^2\theta = \sin\theta\cos\theta$$

$$x\sin\theta(\sin^2\theta + \cos^2\theta) = \sin\theta\cos\theta$$

We know the identity:  $\sin^2\theta + \cos^2\theta = 1$

$$x = \cos\theta$$

$$y = x\sin\theta/\cos\theta$$

$$y = \sin\theta$$

Hence,

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

$$= 1$$

Option A is the correct answer.

**Question 125**

If  $\sqrt{4x-9} + \sqrt{4x+9} = 5 + \sqrt{7}$ , then the value of  $x$  is

- A 4
- B 5
- C 7
- D 3

**Answer: A**

**Explanation:**

given that

$$\sqrt{4x-9} + \sqrt{4x+9} = 5 + \sqrt{7}$$

$$\sqrt{4x-9} - 5 = \sqrt{7} - \sqrt{4x+9}$$

on squaring both sides

$$4x - 9 + 25 + 10\sqrt{4x+9} = 7 + 4x + 9 - 2\sqrt{28x+63}$$

$$10\sqrt{4x+9} = 2\sqrt{28x+63}$$

on squaring both sides again

$$400x - 900 = 112x + 252$$

$$288x = 1152$$

$$x = 4$$

**Question 126**

If  $u_n = \cos^n \alpha + \sin^n \alpha$ , then the value of  $2u_6 - 3u_4 + 1$  is :

- A 1
- B 4
- C 6
- D 0

**Answer: D**

**Explanation:**

$$u_6 = \cos^6 \alpha + \sin^6 \alpha$$

$$2u_6 = 2\cos^6 \alpha + 2\sin^6 \alpha$$

$$u_4 = \cos^4 \alpha + \sin^4 \alpha$$

$$3u_4 = 3\cos^4 \alpha + 3\sin^4 \alpha$$

$$2u_6 - 3u_4 = (2\cos^6 \alpha + 2\sin^6 \alpha) - (3\cos^4 \alpha + 3\sin^4 \alpha)$$

$$2\cos^6 \alpha = 2(1 - \sin^2 \alpha)^3 = 2(1 - \sin^3 \alpha - 3\sin^2 \alpha + 3\sin^4 \alpha)$$

$$3\cos^4 \alpha = 3(1 - \sin^2 \alpha)^2 = 3(1 + \sin^4 \alpha - 2\sin^2 \alpha)$$

$$2\cos^6 \alpha - 3\cos^4 \alpha = 2(1 - \sin^3 \alpha - 3\sin^2 \alpha + 3\sin^4 \alpha) - 3(1 + \sin^4 \alpha - 2\sin^2 \alpha) = 3\sin^4 \alpha - 2\sin^6 \alpha - 1$$

$$2\cos^6 \alpha - 3\cos^4 \alpha = 2\sin^4 \alpha - 3\sin^6 \alpha - 1$$

$$2u_6 - 3u_4 + 1 = (2\cos^6 \alpha + 2\sin^6 \alpha) - (3\cos^4 \alpha + 3\sin^4 \alpha) + 1 = 3\sin^4 \alpha - 2\sin^6 \alpha - 3\sin^4 \alpha + 2\sin^6 \alpha - 1 + 1$$

$$2u_6 - 3u_4 = 0$$

Hence Option D is the correct answer.

**Question 127**

The value of  $\sqrt{-\sqrt{3} + \sqrt{3 + 8\sqrt{7} + 4\sqrt{3}}}$  is

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

**Answer: A**

**Explanation:**

we need to find value of  $\sqrt{-\sqrt{3} + \sqrt{3 + 8\sqrt{7} + 4\sqrt{3}}}$

$$\sqrt{7 + \sqrt{3}} = \sqrt{2^2 + (\sqrt{3})^2 + 2 \times 2 \times \sqrt{3}} = 2 + \sqrt{3}$$

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

$$\sqrt{-\sqrt{3} + 4 + \sqrt{3}} = 2$$

$$\text{hence } \sqrt{-\sqrt{3} + \sqrt{3 + 8\sqrt{7} + 4\sqrt{3}}} = 2$$

**Question 128**

P and Q are the middle points of two chords (not diameters) AB and AC respectively of a circle with centre at a point O. The lines OP and OQ are produced to meet the circle respectively at the points R and S. T is any point on the major arc between the points R and S of the circle. If  $\angle BAC = 32^\circ$ ,  $\angle RTS = ?$

- A 32°
- B 74°
- C 106°
- D 64°

**Answer: B**

**Explanation:**

In a circle radius passing through the mid-point of the chord is perpendicular to that chord.

Hence, OP and OQ are perpendicular to AB and AC respectively.

Hence,  $\angle APO$  and  $\angle AQO$  is  $90^\circ$  both.

In quadrilateral APOQ sum of all internal angles is  $360^\circ$ . i.e.

$$\angle APO + \angle AQO + \angle PAQ + \angle POQ = 360^\circ$$

$$\text{Given, } \angle BAC = 32^\circ, \text{ thus } 90^\circ + 90^\circ + 32^\circ + \angle POQ = 360^\circ \therefore \angle POQ = 148^\circ$$

Also,  $\angle ROS = \angle POQ$  ( $\because$  The lines OP and OQ is extended to R and S) Or,  $\angle ROS = 148^\circ$

Now, since  $\angle ROS$  and  $\angle RTS$  have same arc RS but one subtend angle at centre of the circle while other at a point T anywhere on the remaining part of circle. Thus according to the

**Theorem:** The angle subtended by an arc at the centre of a circle is twice the angle subtended by the same arc at any other point on the remaining part of the circle.

$$\therefore \angle ROS = 2\angle RTS$$

$$\angle RTS = 148/2$$

$$= 74^\circ$$

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**Question 129**

A container has 80 L of milk. From this container 8 L of milk was taken out and replaced by water. The process was further repeated twice. The value of milk in the container after that is :

- A 85.32 L
- B 58.23 L
- C 85.23 L
- D 58.32 L

**Answer: D**

**Explanation:**

$$\frac{QNR}{total} = \frac{QNR(initial)}{total} \left(1 - \frac{\text{Replaced Quantity}}{total}\right)^3$$

QNR is the quantity which has not entered again

so here QNR is milk ,let milk quantity be A ltr

$$\frac{A}{80} = \frac{80}{80} \left(1 - \frac{8}{80}\right)^3$$

$$A = 80 \frac{729}{1000}$$

$$A = \frac{1458}{25}$$

$$= 58.32 \text{ Ltr}$$

**Question 130**

The radius of a circle is 13 cm and XY is a chord which is at a distance of 12 cm from the centre. The length of the chord is :

- A 15 cm

- B 12 cm
- C 10 cm
- D 20 cm

**Answer: C**

**Explanation:**

Let the Chord be AB . Centre be O . Mid point of AB be 'M'.

OA= radius = 13 . OM = 12.

OMA forms a right angle triangle .

$$AM = \sqrt{13^2 - 12^2} = 5$$

$$AB = 2 * AM = 10$$

**Question 131**

Two angles of a triangle are a radian and 1/3 radian. The measure of the third angle in degree (taking  $\pi = 22/7$ ) is :

- A  $132\frac{1}{11}^\circ$
- B  $132\frac{2}{11}^\circ$
- C  $132\frac{3}{11}^\circ$
- D  $132^\circ$

**Answer: C**

**Explanation:**

1 radian =  $(180/\pi)^\circ$

SO, 1/2 radian =  $(90/\pi)^\circ$  & 1/3 radian =  $(60/\pi)^\circ$

Sum of three angles of a triangle is  $180^\circ \therefore (90/\pi) + (60/\pi) + x = 180$

$$x = 180 - (150/\pi)$$

Putting  $\pi = 22/7$ ,

$$x = 132\frac{3}{11}^\circ$$

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**Question 132**

Two equal circles pass through each other's centre. If the radius of each circle is 5 cm, what is the length of the common chord?

- A 5
- B  $5\sqrt{3}$
- C  $10\sqrt{3}$
- D  $\frac{5\sqrt{3}}{2}$

**Answer: B**

**Explanation:**

Let O be the mid point between the centres. So, AO=OB=2.5

Let C be one of the intersecting points of the circles. AC=5

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

$$OC = \sqrt{5^2 - 2.5^2}$$

$$= \frac{5\sqrt{3}}{2}$$



$$\begin{aligned} \text{Length of cord} &= 2 \times \frac{5\sqrt{3}}{2} \\ &= 5\sqrt{3} \end{aligned}$$

**Question 133**

A grain dealer cheats to the extent of 10% while buying as well as selling by using false weights. His total profit percentage is :

- A 20%
- B 22.22%
- C 23.23%
- D 25%

**Answer: B**

**Explanation:**

let the retailer buys 110 gram in Rs 100 because of 10 % cheating

so cost price = 1 gram = Rs 100/110 = Rs 0.909

and retailer sells 90 gram in Rs 100

and hence selling price = Rs 100 / 90 = Rs 1.111

$$\text{Profit \%} = \frac{1.111 - 0.909}{0.909} = 22.22\%$$

**Question 134**

Consider  $\triangle ABD$  such that  $\angle ADB = 20^\circ$  and C is a point on BD such that  $AB = AC$  and  $CD = CA$ . Then the measure of  $\angle ABC$  is :

- A  $40^\circ$
- B  $45^\circ$
- C  $60^\circ$
- D  $30^\circ$

**Answer: A**

**Explanation:**

$$\angle ABD = 20^\circ$$

$$\text{So, } \angle CAD = 20^\circ$$

$$\angle ACD = 180^\circ - 40^\circ = 140^\circ$$

$$\angle ACB = 180^\circ - 140^\circ = 40^\circ$$

$$\angle ABC = \angle ACB = 40^\circ$$

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**Question 135**

If  $\sin(x + y) = \cos[3(x + y)]$ , then the value of  $\tan[2(x + y)]$  is :

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

**Answer: B**

**Explanation:**

Given,

$$\sin(x + y) = \cos[3(x + y)]$$

$$\text{Using: } \cos \theta = \sin(90^\circ - \theta)$$

$$\sin(x + y) = \sin[90^\circ - 3(x + y)]$$

$$\sin[90^\circ - 3(x + y)] - \sin(x + y) = 0$$

$$\sin C - \sin D = 2\sin\left[\frac{C-D}{2}\right] \cos\left[\frac{C+D}{2}\right]$$

$$= 2\sin\left[\frac{(90-3(x+y))-(x+y)}{2}\right] \cos\left[\frac{90-3(x+y)+(x+y)}{2}\right] = 0$$

$$= 2\sin(45-2(x+y)) \cos(45-(x+y)) = 0$$

$$\therefore \sin(45^\circ - 2(x + y)) = 0$$

$$45^\circ - 2(x + y) = 0$$

$$2(x + y) = 45^\circ$$

OR

$$\cos(45^\circ - (x + y)) = 0$$

$$45^\circ - (x + y) = 90^\circ$$

$$x + y = -45^\circ$$

$$2(x + y) = -90^\circ$$

$$\text{Putting } 2(x + y) = 45^\circ$$

$$\tan 2(x + y) = \tan 45^\circ = 1$$

Again, Putting  $2(x + y) = -90^\circ$ , we will not get any answer among given options

Option B is the correct answer.

**Question 136**

The diameter of a garden roller is 1.4 metre and it is 2 metre long. The area covered by the roller in 5 revolutions is :

A 8.8 sq.m

B 4.4 sq.m

C 44 sq.m

D 16.8 sq.m

**Answer: C**

**Explanation:**

We know that, Surface area of cylinder =  $\pi \times d \times L$  Where, d and L are diameter and length of the cylinder

Given, Diameter of the roller = 1.4 m & Length of the roller = 2 m

$$\therefore \text{Surface area of the roller} = \pi \times 1.4 \times 2 = \left(\frac{22}{7}\right) \times 1.4 \times 2 = 8.8 \text{ m}^2$$

$$\therefore \text{Area covered by 5 revolution} = 5 \times 8.8 \text{ m}^2 = 44 \text{ m}^2$$

**Question 137**

A person travels 285 km in 6 hr. In the first part of the journey, he travels at 40 km/hr by bus. In the second part, he travels at 55km/hr by train. The distance travelled by train is :

A 156 km

B 165 km

C 615 km

D 561 km

**Answer: B**

**Explanation:**

In the first part the man travels in a bus at 40kmph. The total distance covered in first part of journey(3 hours) is 120 km.

The remaining part was covered by train at 55 kmph. The total distance covered in second part of journey(3 hours) is 165 km.

Hence Option B is the correct answer.

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### Question 138

The average of five numbers is 56.4. The average of the first and the second number is 53. The average of the fourth and the fifth number is 56. What is the third number ?

- A 64
- B 63
- C 35
- D 7

**Answer:** A

#### **Explanation:**

Average of 5 numbers is given as 56.4

Total of 5 numbers = Average x Number of Elements

Total of 5 numbers =  $56.4 \times 5 = 282$

Average of 1st and 2nd number is 53

Total of 1st and 2nd number =  $53 \times 2 = 106$

Average of 4th and 5th number is 56

total of 4th and 5th number =  $56 \times 2 = 112$

$1\text{st} + 2\text{nd} + 3\text{rd} + 4\text{th} + 5\text{th} = 282$

$106 + 3\text{rd} + 112 = 282$

$3\text{rd} = 64$

hence option A is correct

### Question 139

The value of  $(1 + \sec 20^\circ + \cot 70^\circ) * (1 - \operatorname{cosec} 20^\circ + \tan 70^\circ)$  is ?

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

**Answer:** C

#### **Explanation:**

$\cot 70^\circ = \cot (90^\circ - 20^\circ) = \tan 20^\circ$

$\tan 70^\circ = \tan (90^\circ - 20^\circ) = \cot 20^\circ$

$(1 + \sec 20^\circ + \cot 70^\circ) = (1 + \sec 20^\circ + \tan 20^\circ) = \frac{\cos 20^\circ + \sin 20^\circ + 1}{\cos 20^\circ}$

$(1 + \operatorname{cosec} 20^\circ + \tan 70^\circ) = (1 - \operatorname{cosec} 20^\circ + \cot 20^\circ) = \frac{\cos 20^\circ + \sin 20^\circ - 1}{\sin 20^\circ}$

$(1 + \sec 20^\circ + \cot 70^\circ) \times (1 - \operatorname{cosec} 20^\circ + \tan 70^\circ) = \frac{\cos 20^\circ + \sin 20^\circ + 1}{\cos 20^\circ} \times \frac{\cos 20^\circ + \sin 20^\circ - 1}{\sin 20^\circ}$

$= \frac{(\cos 20^\circ + \sin 20^\circ)^2 - 1}{\sin 20^\circ \cos 20^\circ}$

$$= \frac{\cos^2 20^\circ + \sin^2 20^\circ + 2 \sin 20^\circ \cos 20^\circ - 1}{\sin 20^\circ \cos 20^\circ}$$

$$= \frac{2 \sin 20^\circ \cos 20^\circ}{\sin 20^\circ \cos 20^\circ} = 2$$

Hence Option C is the correct answer.

#### Question 140

If  $0 \leq \alpha \leq \pi/2$  and  $2 \sin \alpha + 15 \cos^2 \alpha = 7$  then the value of  $\cot \alpha$  is :

A  $\frac{1}{2}$

B  $\frac{5}{4}$

C  $\frac{3}{4}$

D  $\frac{1}{4}$

Answer: C

#### Explanation:

$$2 \sin \alpha + 15 \cos^2 \alpha = 7$$

$$\text{Using: } \cos^2 \alpha = 1 - \sin^2 \alpha$$

$$2 \sin \alpha + 15 (1 - \sin^2 \alpha) = 7$$

$$2 \sin \alpha + 15 - 15 \sin^2 \alpha = 7$$

$$15 \sin^2 \alpha - 2 \sin \alpha - 8 = 0$$

$$15 \sin^2 \alpha - 12 \sin \alpha + 10 \sin \alpha - 8 = 0$$

$$3 \sin \alpha (5 \sin \alpha - 4) + 2(5 \sin \alpha - 4) = 0$$

$$(5 \sin \alpha - 4)(3 \sin \alpha + 2) = 0$$

$$5 \sin \alpha - 4 = 0 \text{ or } 3 \sin \alpha + 2 = 0$$

$$\sin \alpha = 4/5 \text{ or } \sin \alpha = -2/3$$

$$\because 0 \leq \alpha \leq \pi/2$$

$$\therefore \sin \alpha = 4/5$$

$$\operatorname{cosec} \alpha = 5/4$$

$$\operatorname{cosec}^2 \alpha = 25/16$$

$$1 + \cot^2 \alpha = \operatorname{cosec}^2 \alpha$$

$$1 + \cot^2 \alpha = 25/16$$

$$\cot^2 \alpha = (25/16) - 1 = 9/16$$

$$\cot \alpha = 3/4 [\because 0 \leq \alpha \leq \pi/2]$$

Option C is the correct answer.

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#### Question 141

The marked price of a shop keeper for an article is 30% higher than the cost price. If he sells the article allowing 10% discount to customers, then the gain percent will be :

A 17%

B  $16\frac{2}{3}\%$

C  $12\frac{1}{2}\%$

D 15%

Answer: A

#### Explanation:

$$\begin{aligned}
 MP &= 1.3CP \\
 SP &= 0.9 \times 1.3CP \\
 \% \text{gain} &= \frac{SP - CP}{CP} \times 100 \\
 &= \frac{(0.9 \times 1.3CP) - CP}{CP} \times 100 \\
 &= 17\%
 \end{aligned}$$

#### Question 142

If  $\sin 2\theta = 1/2$ , then the value of  $\cos(75^\circ - \theta)$  is :

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

**Answer: B**

#### Explanation:

$$\text{If } \sin 2\theta = 1/2$$

$$2\theta = 30^\circ$$

$$\theta = 15^\circ$$

$$\cos(75^\circ - \theta) = \cos(75^\circ - 15^\circ) = \cos 60^\circ = 1/2$$

Hence Option B is the correct answer.

#### Question 143

A triangle is formed by the x axis and the lines  $2x + y = 4$  and  $x - y + 1 = 0$  as three sides. Taking the side along x axis as its base, the corresponding altitude of the triangle is :

- A 2 unit
- B 3 unit
- C  $\sqrt{5}$  unit
- D 1 unit

**Answer: A**

#### Explanation:

$$\text{equation of x axis is } y = 0 \text{ ----(1)}$$

$$2x + y - 4 = 0 \text{ ----(2)}$$

$$x - y + 1 = 0 \text{ ----(3)}$$

on solving (1) (2) & (3) we will get 3 points, let those be A, B, C.

$$A(3, 2), B(-1, 0), C(2, 0)$$

since, B & C lies on X axis,

$$\text{altitude} = \text{height of point A from x axis} = \text{ordinate} = y \text{ value of point A} = 2$$

so the answer is option A.

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**Question 144**

If  $x = \frac{1}{2+\sqrt{3}}$  and  $y = \frac{1}{2-\sqrt{3}}$  then the value of  $\frac{1}{x+1} + \frac{1}{y+1}$  is

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

**Answer: C**

**Explanation:**

$x = \frac{1}{2+\sqrt{3}}$ , on rationalizing  $x = 2 - \sqrt{3}$

$y = \frac{1}{2-\sqrt{3}}$ , on rationalizing  $y = 2 + \sqrt{3}$

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

using above values of x and y

$$\frac{1}{x+1} + \frac{1}{y+1} = \frac{1}{2+\sqrt{3}+1} + \frac{1}{2-\sqrt{3}+1}$$

now on rationalizing ,

$$\frac{1}{x+1} + \frac{1}{y+1} = \frac{3-\sqrt{3}+3+\sqrt{3}}{6} = 1$$

**Question 145**

A starts business with Rs. 7000 and after 5 months. B joined as a partner. After a year the profit is divided in the ratio 2 : 3. The capital of B is :

- A Rs. 9,000
- B Rs. 10,000
- C Rs. 6,500
- D Rs. 18,000

**Answer: D**

**Explanation:**

B's capital be x.

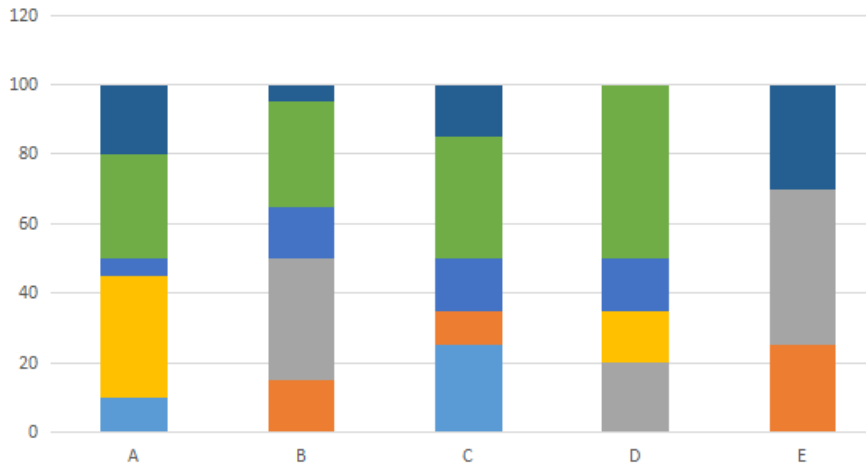
$$\frac{7000 \times 12}{(12-5)x} = \frac{2}{3}$$

$$x=18000$$

**Instructions**

In the following questions, the following Bar Diagram shows the percentage of 7 coloured balls sold in 5 shops A, B, C, D and E. All the five shops sold an equal number of balls. Study the graph and answer all the questions.

■ Blue ■ Black ■ Red ■ Violet ■ White ■ Orange ■ Yellow



**Question 146**

In shop A, the ratio of percentage of violet balls and yellow balls is :

- A 2 : 7
- B 7 : 4
- C 6 : 1
- D 2 : 4

**Answer: B**

**Explanation:**

In shop A, percentage of violet balls sold as a percentage of total number of balls = 35%

Percentage of yellow balls sold as a percentage of total number of balls = 20%

Ratio = 35:20 = 7:4

Option B is the right answer.

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**Question 147**

The shops having equal percentage of white balls among the given options are :

- A A and C
- B C and E
- C B and C
- D A and B

**Answer: C**

**Explanation:**

As it can be seen from the graph, shops B and C have an equal percentage of white balls (15%). Hence, option C is the right answer.

**Question 148**

What percentage of total coloured balls is yellow balls?

- A 12%
- B 16%
- C 14%
- D 10%

Answer: C

**Explanation:**

Let us assume that each shop sells 100 balls. Now, total number of balls = 500.

Total yellow balls =  $20+5+15+0+30 = 70$

Percentage =  $70/500 = 14/100 = 14\%$ .

Option C is the right answer.

**Question 149**

The difference between the sum of percentages of violet balls sold to the sum of percentages of blue balls sold is

- A 10
- B 15
- C 25
- D 40

Answer: B

**Explanation:**

Since all the shops sold equal number of balls and we are asked to find the ratio, we can directly use the percentages involved.

Total percentage of violet balls =  $35+0+0+15+0 = 50$

Total percentage of blue balls =  $10+0+15+0+0 = 35$

Difference in percentage = 15%

Option B is the right answer.

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**Question 150**

The ratio of total number of red balls sold to the total number of orange balls sold is :

- A 1 : 1
- B 10:19
- C 9 : 11
- D 20:29

Answer: D

**Explanation:**

Since all the shops sell the same number of balls, total number can be equated to total percentage (Since ratio is asked)

Total number of red balls sold =  $0 + 35+0+ 20+ 45 = 100$

Total number of orange balls sold =  $30 + 30+ 35 + 50 = 145$

Ratio =  $100:145 = 20:29$

Option D is the right answer.



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### Reasoning

#### Instructions

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

#### Question 151

8 : 9 : 56 : ?

- A 90
- B 73
- C 72
- D 89

Answer: C

#### Explanation:

Expression = 8 : 9 : 56 : ?

The pattern followed is =  $n(n - 1)$

Eg =  $8(8 - 1) = 8 \times 7 = 56$

Similarly,  $9(9 - 1) = 8 \times 8 = 72$

=> Ans - (C)

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#### Question 152

ACEG : ZXVT :: BDFH : ?

- A YVSP
- B IKMO
- C YUQM
- D YWUS

Answer: D

#### Explanation:

The pattern followed is that every letter is opposite to each other.

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, BDFH -> YWUS

=> Ans - (D)

#### Question 153

BCFG : HILM :: NORQ ?

- A TXUW

B TUXW

C TVWX

D TXWU

**Answer: B**

**Explanation:**

Expression = BCFG : HILM :: NORQ ?

The pattern followed is :

B	C	F	G
(+6)	(+6)	(+6)	(+6)
H	I	L	M

Similarly, for NORQ :

N	O	R	Q
(+6)	(+6)	(+6)	(+6)
T	U	X	W

=> Ans - (B)

**Question 154**

**Affluent : Opulent :: Flourish :**

A Prosper

B Flatter

C Comprise

D Outflow

**Answer: A**

**Explanation:**

Affluent and opulent are synonyms, similarly, the word with similar meaning as flourish is prosper.

=> Ans - (A)

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**Question 155**

**25 : 37 :: 49 : ?**

A 56

B 60

C 65

D 41

**Answer: C**

**Explanation:**

Expression = 25 : 37 :: 49 : ?

The pattern followed is =  $n^2 : (n + 1)^2 + 1$

Eg =  $5^2 : (5 + 1)^2 + 1 = 25 : 37$



- C Go
  - D Run
- Answer:** C

**Explanation:**

Gulp means to drink in large mouthful, similarly rush means to go in a hurry.

=> Ans - (C)

**Question 159**

**Joy : Delight :: Gloomy : ?**

- A Silent
- B Dull
- C Vague
- D Plain

**Answer:** B

**Explanation:**

Joy and delight are synonyms, which is related to happiness, similarly, the word similar in meaning to gloomy is dull.

=> Ans - (B)

**Instructions**

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

**Question 160**

- A NQ
- B AT
- C HK
- D CF

**Answer:** B

**Explanation:**

(A) : N (+3 letters) = Q

(B) : A (+19 letters) = T

(C) : H (+3 letters) = K

(D) : C (+3 letters) = F

=> Ans - (B)

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**Question 161**

- A Mumbai
- B New Delhi
- C Kolkata

D Chennai

**Answer: B**

**Explanation:**

Mumbai, Kolkata and Chennai are capital of states, while New Delhi is the capital of the country.

=> Ans - (B)

**Question 162**

A Tiger

B Cheetah

C Lion

D Wolf

**Answer: D**

**Explanation:**

Tiger, Cheetah and wolf comes under the cat family called felidae, hence wolf is the odd one out.

=> Ans - (D)

**Question 163**

A OUT

B FED

C DIN

D JOT

**Answer: A**

**Explanation:**

The words in the last three options contain only one vowel, but there are 2 vowels in the first option, hence OUT is the odd one.

=> Ans - (A)

## General Science Notes for SSC CGL

**Question 164**

A 26

B 82

C 15

D 65

**Answer: C**

**Explanation:**

From the given numbers, only 15 is a multiple of 3, hence it is the odd one out.

=> Ans - (C)

**Question 165**

A 27

B 37

C 47

D 17

**Answer: A**

**Explanation:**

17, 37 and 47 are prime numbers, hence 27 is the odd one.

=> Ans - (A)

**Question 166**

A CFI

B DGJ

C EHL

D BEH

**Answer: C**

**Explanation:**

(A) : C (+3 letters) = F (+3 letters) = I

(B) : D (+3 letters) = G (+3 letters) = J

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

(D) : B (+3 letters) = E (+3 letters) = H

=> Ans - (C)

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**Question 167**

A 5 - 35

B 4 - 44

C 6 - 64

D 3 - 30

**Answer: C**

**Explanation:**

In all the options but for the third, the second number is completely divisible by the first.

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

(B) :  $\frac{44}{4} = 11$

(C) :  $\frac{64}{6} = 10.67$

(D) :  $\frac{30}{3} = 10$

=> Ans - (C)

**Question 168**

A Disk

- B SIM
- C USB
- D Modem

**Answer: B**

**Explanation:**

Disk, USB and modem can be connected in a computer to transfer data, hence sim is the odd one out.

=> Ans - (B)

**Instructions**

In each of the following questions, which of the following word will appear last in the dictionary ?

**Question 169**

- A rhapsody
- B revolve
- C rheumatism
- D reward

**Answer: C**

**Explanation:**

As per the order in the dictionary,

Revolve -> Reward -> Rhapsody -> Rheumatism

Thus, **rheumatism** will appear last.

=> Ans - (C)

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**Question 170**

- A heart strings
- B heavy
- C health
- D heathen

**Answer: B**

**Explanation:**

As per the order in dictionary,

Health -> Heart strings -> Heathen -> heavy

Thus, **heavy** will appear last.

=> Ans - (B)

**Question 171**

- A prize
- B prosecute
- C prompt

D prostrate

Answer: D

**Explanation:**

As per the order in the dictionary,

Prize -> Prompt -> Prosecute -> Prostrate

Thus, **prostrate** will appear last.

=> Ans - (D)

**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 172**

2 6 12 20 30 ? 56

A 38

B 46

C 56

D 42

Answer: D

**Explanation:**

The pattern followed is that consecutive even numbers starting from 4 are added.

$$2 + 4 = 6$$

$$6 + 6 = 12$$

$$12 + 8 = 20$$

$$20 + 10 = 30$$

$$30 + 12 = 42$$

$$42 + 14 = 56$$

=> Ans - (D)

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**Question 173**

JkL AbC MnO DeF PqR Gh?

A l

B i

C S

D s

Answer: A

**Explanation:**

Each series consists of consecutive letters alternating between upper case and lower case.

Last term of the series is Gh.

Hence the next letter is l.



Hence Option A is the correct answer.

**Question 174**

1, 4, 10, 19, 31, ?

- A 43
- B 46
- C 50
- D 55

**Answer: B**

**Explanation:**

The pattern followed is that multiples of 3 are added.

$$1 + 3 = 4$$

$$4 + 6 = 10$$

$$10 + 9 = 19$$

$$19 + 12 = 31$$

$$31 + 15 = 46$$

=> Ans - (B)

**Question 175**

RQOLH ?

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

**Answer: B**

**Explanation:**

R-1 = Q (Preceding letter of R)

Q-2 = O (Second letter before Q)

O-3 = L (Third letter before Q)

L-4 = H (Forth letter before Q)

H-5 = C (Fifth letter before H)

Hence Option B is the correct answer.

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**Question 176**

YXHGWFVFEUTDCSRB?

- A D
- B C
- C I

D A

Answer: D

**Explanation:**

Split the series into series of two letters each. The second letter is the preceding letter of the first letter of the series. The last two letters are B?. Hence the last letter is A. Hence Option D is the correct answer.

**Question 177**

0, 6, 24, 60, 120, 210, ....

A 336

B 504

C 338

D 420

Answer: A

**Explanation:**

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

$$6-0=6$$

$$24-6=18$$

$$60-24=36$$

$$120-60=60$$

$$210-120=90$$

Difference between differences :

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

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

$$60-36=24(6 \times 4)$$

$$90-60=30(6 \times 5)$$

The next value must be 36.

The difference between 90 and the next term in the series must be 36 more than 90 which is 126.

The next term of the series is 126 more than 210 which is 336.

Hence Option A is the correct answer.

**Instructions**

For the following questions answer them individually

**Question 178**

A husband and a wife had five married sons and each of them had four children. How many members are there in the family?

A 32

B 36

C 30

D 40

Answer: A

**Explanation:**

5 married sons = 10 members ( 5 husband & 5 wives)

Each pair had four children

=> 1 family has 6 members (4children , 1 husband & 1 wife)

There are 5 such families =>  $5 \times 6 = 30$  members

Also, the five sons have a mother and father

=> Total members =  $30 + 2 = 32$

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### Question 179

In a certain code, if DEMOCRACY is written as YCARCOMED, how will the word PRESIDENT be coded as?

- A EIETPRSDN
- B NDSRPTEIE
- C TNEDISERP
- D RSDNPEIET

**Answer:** C

#### Explanation:

In a certain code, DEMOCRACY is written as YCARCOMED then we can notice that the word is represented by the same group of words arranged in the reverse order. similarly the word PRESIDENT, can be coded as TNEDISERP. that is option C.

### Question 180

From the given alternatives, select the word which cannot be formed using the letters of the given word. 'Distribution'

- A tribute
- B riot
- C dust
- D disturb

**Answer:** A

#### Explanation:

From the given alternatives, the word which cannot be formed using the letters of the given word. 'Distribution' is 'tribute' as there is no 'e' in 'Distribution', therefore the answer is option A.

### Question 181

If MOTHER is coded as 'NPUIFS' select the appropriate code from the answer choices, for the word in capital letters : ZENITH

- A AFOGHJ
- B BGPKVJ
- C AFOJUI
- D AFOGHI

**Answer:** C

#### Explanation:

if A=1, B=2 and so on we can see that for the pair of words MOTHER and 'NPUIFS', each letter is represented by the letter immediately succeeding it. similarly for ZENITH can be coded as AFOJUI. which is option C.

## SSC CHSL Previous Question papers (download pdf)

### Question 182

If AEIOU is written as BCJMV, how XCKYB can be written in that code ?

- A YALWC
- B YELAC
- C ADNZE
- D YBLXC

**Answer: A**

#### Explanation:

if  $A=1, B=2$  and so on then we can see that for the pair AEIOU and BCJMV.

$A+1=B$

$E-2=C$

$I+1=J$

$O-2=M$

$U+1=V$

similarly XCKYB can be coded as YALWC. answer is option A.

### Question 183

Five persons (R, S, T, U and V) are in a queue facing a reservation counter. Immediately behind S is U. T is standing between R and V. In between R and U, no one is there. Then, where is S standing in the queue ?

- A Last but one
- B First
- C Second
- D Last

**Answer: B**

#### Explanation:

U is standing immediately behind S and there is no one between R and U

=> 'S U R' are standing in that order.

Also, T is standing between R & V.

=> The position of the five persons from left to right is :

S U R T V

=> S is at first position.

### Question 184

In the year 2003, some months have 31 days. How many months have 28 days ?

- A 12 months
- B Alternate months
- C 6 months

D 1 month

**Answer:** A

**Explanation:**

It is obvious that each month in a calendar year has at least 28 days.

Thus, all 12 months have 28 days.

Ans - (A)

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**Question 185**

In a team of five players, Vani is older than Rani. Sita is younger than Vani but older than Rani. Nita is younger than Mary and Rani. Rani is older than Mary. Whose age is middle of the five in this team?

A Mary

B Vani

C Rani

D Sita

**Answer:** C

**Explanation:**

Vani is older than Rani,  $\Rightarrow V > R$

Sita is younger than Vani but older than Rani  $\Rightarrow V > S > R$

Nita is younger than Mary and Rani  $\Rightarrow M, R > N$

Rani is older than Mary  $\Rightarrow R > M > N$

$\Rightarrow$  Combining above inequalities :  $V > S > R > M > N$

$\Rightarrow$  Rani's age is in the middle.

**Question 186**

In a certain code, SURFER is written as RUSREF. How is KNIGHT written in that code ?

A THGINK

B GHTINK

C INKTHG

D THINKG

**Answer:** C

**Explanation:**

The pattern followed above is that divide the word in two parts and write each part in reverse order and then merge it.

Eg - SURFER = SUR & FER

When we reverse each part, we get : RUS & REF,  $\Rightarrow$  RUSREF

Similarly, code for KNIGHT :

KNI  $\rightarrow$  INK

GHT  $\rightarrow$  THG

$\Rightarrow$  KNIGHT  $\rightarrow$  INKTHG

**Instructions**

In each of the following questions, some equations are solved on the basis of certain system. Find out the correct answer for the unsolved equation on that basis.

**Question 187**

4	6	8
5	8	3
7	9	6
266	398	?

- A 544
- B 445
- C 515
- D 454

**Answer: B**

**Explanation:**

$(\text{Half of Value in row 1} \times 100) + ((\text{value in row 2} + 1) \times 10) + (\text{Value in Row 3} - 1) = \text{Value in Row 4}$

Let the unknown be  $x$ .

$$(4 \times 100) + (40) + (6 - 1) = x$$

Hence  $x = 445$

Hence Option B is the correct answer

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**Question 188**

$$4 \times 6 \times 9 = 649, 9 \times 8 \times 4 = 894,$$
$$3 \times 7 \times 2 = ?$$

- A 272
- B 294
- C 732
- D 813

**Answer: C**

**Explanation:**

The first term of the solution is the second term in the product.

The second term of the solution is the first term in the product.

The third term of the solution is the third term in the product.

$$\text{Hence } 3 \times 7 \times 2 = 732.$$

Hence Option C is the correct answer.

**Instructions**

For the following questions answer them individually

Question 189

Based on the given details, find out the number of postgraduates enrolled in a college for the year 1970.

1968	1969	1970	1971	1972
113	88	?	63	59

- A 63
- B 79
- C 62
- D 84

Answer: C

**Explanation:**

Represent each letter as a number starting from A=1, B=2, C=3 till Z=26.

L=12

A=1

T=20

E=5

X=24

$L+A+T+E+X = 12+1+20+5+24 = 62.$

Hence Option C is the correct answer.

Question 190

Two squads of soldiers A and B facing North and South respectively received the following commands - Right Turn, Left Turn, Left Turn, Left Turn. Which directions would the squads A and B face at the end ?

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

Answer: A

**Explanation:**

Two squads of soldiers A and B facing North and South respectively received the following commands - Right Turn, Left Turn, Left Turn, Left Turn then:

the directions of squads A and B will be:

A: north-east-north-west-south

B: south-west-south-east-north

which is option A.

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Question 191

In a squareshaped hostel, there are 8 rooms on each side in every floor. Room No. 101 is the first room facing north in the first floor. The room nubers are continued clockwise. which direction does Room No. 125 face?

- A South
- B North

C West

D East

Answer: C

**Explanation:**

with the given conditions:  
room number 101-108: NORTH  
room number 109-116: EAST  
room number 117-124: SOUTH  
room number 125-132: WEST.  
the answer is option B.

**Question 192**

Select the missing number from the given responses :

9	6	7
8	?	3
3	5	8
216	900	168

A 30

B 55

C 60

D 70

Answer: A

**Explanation:**

Value in row 1  $\times$  value in row 2  $\times$  Value in Row 3 = Value in Row 4

Let the unknown be  $x$ .

$$6 \times x \times 5 = 900$$

$$\text{Hence } x = \frac{900}{30}$$

$$x = 30$$

Hence Option A is the correct answer

**Question 193**

If - stands for  $\times$ ,  $\times$  stands for  $+$ ,  $\div$  stands for  $-$  and  $+$  stands for  $\div$  which one of the following is correct ?

A  $11 - 6 \div 4 + 2 = 68$

B  $10 - 5 \times 6 \div 2 = 54$

C  $15 + 3 \times 4 \div 3 = 12$

D  $12 + 4 \div 2 - 7 = 8$

Answer: B

**Explanation:**

If - stands for  $\times$ ,  $\times$  stands for  $+$ ,  $\div$  stands for  $-$  and  $+$  stands for  $\div$ , then:

option A :  $11 - 6 \div 4 + 2 = 68$ ;  $11 \times 6 - 4 \div 2 = 64$  which isn't true.



option B:  $10 - 5 \times 6 \div 2 = 10 \times 5 + 6 - 2 = 54$  which is true.  
hence the correct answer is option B.

## SSC CGL Free Mock Test

### Instructions

In each of the following 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, follow from the given statements.

### Question 194

#### Statements :

1. All scholars are eccentric.
2. No woman is eccentric.

#### Conclusions :

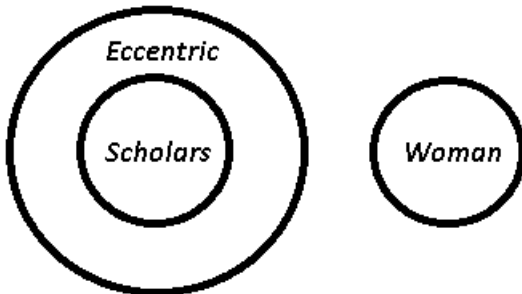
- I. No woman is scholar.
- II. All eccentric are men.

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

Answer: D

#### Explanation:

The venn diagram for above statements is :



#### Conclusions :

- I. No woman is scholar = true
- II. All eccentric are men = false

Thus, only conclusion I follows

=> Ans - (D)

### Question 195

#### Statements :

1. All students are girls.
2. No girl is dull.

#### Conclusions :

- I. There are no boys in the class.
- II. No student is dull.

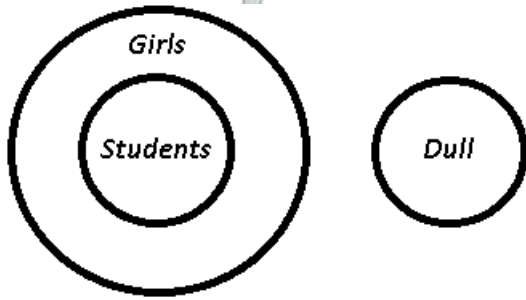
- A Only conclusion II follows  
B Both conclusions I and II follow  
C Neither conclusion I nor II follows

D Only conclusion I follows

Answer: B

Explanation:

The venn diagram for above statements is :



Conclusions :

I. There are no boys in the class = true

II. No student is dull = true

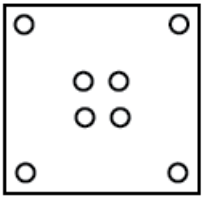
Thus, both conclusions I and II follow

=> Ans - (B)

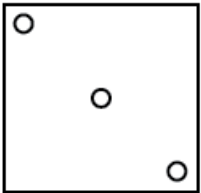
Instructions

For the following questions answer them individually

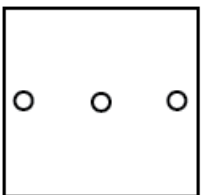
Question 196



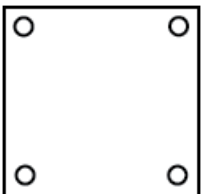
A

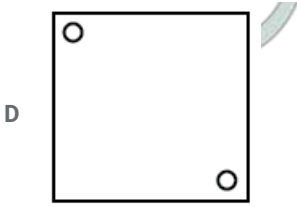


B



C





Answer: D

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Question 197

Identify the code for 'MARS'.

Matrix I

	0	1	2	3	4
0	P	A	I	V	R
1	I	P	R	A	V
2	A	R	V	P	I
3	V	I	P	R	A
4	R	V	A	I	P

Matrix II

	5	6	7	8	9
5	S	L	K	M	E
6	K	M	S	E	L
7	M	E	L	K	S
8	L	K	E	S	M
9	E	S	M	L	K

A 66, 34, 21, 56

B 89, 20, 22, 79

C 97, 41, 33, 96

D 75, 13, 40, 67

Answer: D

Explanation:

(A) - 66, 34, 21, 56 = MARL

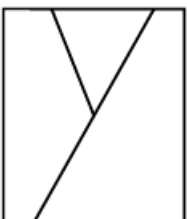
(B) - 89, 20, 22, 79 = MAVS

(C) - 97, 41, 33, 96 = MVRS

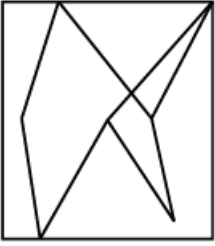
(D) - 75, 13, 40, 67 = **MARS**

=> Ans - (D)

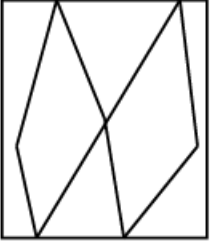
Question 198



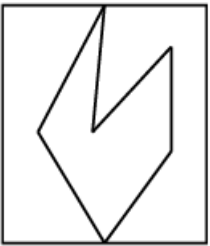
A



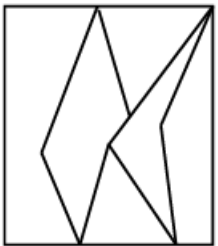
B



C



D



Answer: B

**Explanation:**

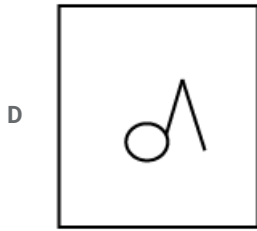
The figure given in the figure can be interpreted as reverse Y.

Clearly, it can be seen in option (B). The blue lines in the below diagram will show it.



Ans - (B)

Question 199



Answer: B

**Explanation:**

The shape of the figure is 'V' which in mirror will not change.

=> (D) & (C) are eliminated

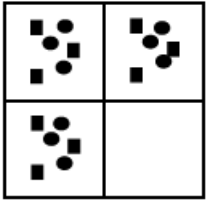
Now, the circle is attached to the left outside of V, => It will appear on the right outside in the mirror

=> (A) is eliminated.

Ans - (B)

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Question 200



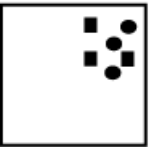
A



B



C



D



Answer: B

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