



## SSC CGL 2013 Tier 1 21 April First Sitting

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# General Awareness

## Instructions

For the following questions answer them individually

### Question 1

Which of the following metals is used in Space Crafts to withstand high temperatures ?

- A Fe
- B Ti
- C Ni
- D Pb

Answer: B

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### Question 2

Over use of resource is called "Tragedy of Commons". It was propounded by:

- A Garrett Hardin
- B Seligman
- C Adolph Wagner
- D A.P Lemier

Answer: A

### Question 3

'National Youth Day' is marked on :

- A January 15
- B January 9
- C January 18
- D January 12

Answer: D

### Question 4

The highest altitude (4411 meters above sea level) is of:

- A Daocheng Yading Airport
- B Heathrow Airport
- C Kathmandu Airport
- D Bangda Airport

Answer: A

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### Question 5

Which of the following is protected under Wildlife (Protection) Act, 1972?

- A Porcupine
- B Gerbil
- C Bandicoot rat
- D Squirrel

Answer: A

### Question 6

Brass gets discoloured in air due to constant exposure in presence of:

- A Aluminium phosphide
- B Hydrogen sulphide
- C Hydrogenated wafers
- D Aluminium sulphide

Answer: B

### Question 7

A NOT gate can be implemented by:

- A a single diode
- B two diodes
- C a single resistor
- D a single transistor

Answer: D

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### Question 8

Article 1 of the Indian Constitution declares "India that is Bharat" is a:

- A Union of States
- B Federal State with Unitary features
- C Unitary State with federal features
- D Federal State

Answer: A

**Question 9**

Plantation of trees on a large scale to check soil erosion are called:

- A Shelter belts
- B Contour ploughing
- C Strip cropping
- D Afforestation

**Answer: D**

**Question 10**

Persistence of vision is the Principle behind:

- A Binocular
- B Cinema
- C Periscope
- D Camera

**Answer: B**

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**Question 11**

Thinner particles responsible for deteriorating the air-quality resulting in the damage of vital body organs are referred as PM:

- A 15.5
- B 10.5
- C 2.5
- D 20.5

**Answer: C**

**Question 12**

What is 'Milindapanho'?

- A A Buddhist place
- B One of the names of Buddha
- C A Buddhist Specimen of Art
- D A Buddhist text

**Answer: D**

**Question 13**

Of the following, in which did Napoleonic France suffer final defeat?

- A Battle of Trafalgar
- B Battle of Wagram
- C Battle of Pyramids
- D Battle of Austerlitz

**Answer: A**

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### Question 14

An example of protein which acts as a hormone is :

- A Trypsin
- B Oxytocin
- C Keratin
- D Casein

**Answer: B**

### Question 15

The fat of a common mussel-secretes a sticky glue that can be used to make heart implants. The unique chemical compound present in the glue is:

- A Amino phenyl alanine
- B Hydroxy phenyl alanine
- C Phenyl alanine
- D Dihydroxy phenyl alanine

**Answer: D**

### Question 16

Tick the correct option of GDP (Gross Domestic Product) contributed by service sector in the past:

- A During 2000-01 (GDP-65.54%)
- B During 1980 - 81 (GDP 50.00%)
- C During 1950 - 51 (GDP 34.63%)
- D During 2011 - 12 (GDP 57.00%)

**Answer: D**

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### Question 17

Which was the first super computer purchased by India for medium range weather forecasting ?

- A CrayXMP-14
- B Medha - 930
- C CDC Cyber 930-11
- D Param

**Answer: A**

**Question 18**

**The study of population is called :**

- A Cartography
- B Anthropology
- C Demography
- D Biography

**Answer: C**

**Question 19**

**Well preferred tree fossil supposed to be from Jurassic Age in India is reported from:**

- A Pithauragarh
- B Chhattisgarh
- C Ramgarh
- D Bahadurgarh

**Answer: B**

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**Question 20**

**The primary producer in an ecosystem are;**

- A Women
- B Men
- C Plants
- D Bacteria

**Answer: C**

**Question 21**

**The Vice-President is:**

- A A member of Lok Sabha

- B A member of Rajya Sabha
- C A member of either House
- D Not a member of the Parliament

**Answer: D**

**Question 22**

**In <HR>, the HR stands for:**

- A Heading Regulations
- B Happy Romulans
- C Horizontal Rule
- D Horizontal Rulers

**Answer: C**

## General Science Notes for SSC CGL

**Question 23**

**The Government of India Act, 1935 was based on :**

- A Simon Commission
- B Lord Curzon Commission
- C Dimitrov Thesis
- D Lord Clive's report

**Answer: A**

**Question 24**

**Some of the ingredients required for bread making are:**

- A Maida and Yeast
- B Maida and Baking Powder
- C Maida and Baking Soda
- D Maida and Ghee

**Answer: A**

**Question 25**

**Which one of the following hormone is called "Emergency Hormone" ?**

- A Adrenaline
- B Thyroxine
- C Vasopressin

D Insulin

Answer: A

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### Question 26

Rajiv Gandhi International Airport is situated in :

A Jammu and Kashmir

B New Delhi

C Mangalore

D Hyderabad

Answer: D

### Question 27

Who founded the Indian National Party in Berlin during 1914?

A Subhash Chandra Bose

B W.C. Banerjee

C Surendranath Banerjee

D Champakaraman Pillai

Answer: D

### Question 28

Malaria is transmitted from one person to another by:

A Aedes Mosquito

B Culex Mosquito

C Anopheles Mosquito

D All of the above

Answer: C

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### Question 29

Who was the head of the 10th Finance Commission ?

A Manmohan Singh

B Vasant Sathe

C Shiv-Shankar

D K.O Pant



**Answer: D**

**Question 30**

**In India, Special Economic Zones were established to enhance:**

- A Free trade
- B Foreign Investment
- C Employment
- D Technology Development

**Answer: B**

**Question 31**

**Salal is the hydro power project in:**

- A Haryana
- B Jammu and Kashmir
- C Himachal Pradesh
- D Punjab

**Answer: B**

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**Question 32**

**During Quit India Movement, Parallel Government' was constituted at:**

- A Varanasi
- B Allahabad
- C Lucknow
- D Ballia

**Answer: D**

**Question 33**

**Liver is a RICH source of :**

- A sugars
- B fat soluble vitamins
- C minerals
- D proteins

**Answer: D**

**Question 34**

**Cuscuta is a :**

- A Saprophyte
- B Epiphyte
- C Xerophyte
- D Parasite

**Answer: D**

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**Question 35**

**In the case of an inferior good, the income elasticity of demand is :**

- A Zero
- B Negative
- C Infinite
- D Positive

**Answer: B**

**Question 36**

**Nitrogen is an essential constituent of all :**

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

**Answer: B**

**Question 37**

**The Sargasso sea is situated in the :**

- A Atlantic Ocean
- B Pacific Ocean
- C Indian Ocean
- D Arctic Ocean

**Answer: A**

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**Question 38**

Who discovered electromagnetic nature of light ?

- A Snell
- B Newton
- C Maxwell
- D Young

**Answer: C**

**Question 39**

Judges of the district court are appointed by:

- A Governor
- B Chief Minister
- C Law Minister
- D President

**Answer: A**

**Question 40**

The Poona Pact (1932) was an agreement between:

- A Nehru and Ambedkar
- B Gandhi and Ambedkar
- C Malaviya and Ambedkar
- D Gandhi and Nehru

**Answer: B**

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**Question 41**

Time of exposure required for taking photograph of an object depends upon the

- A brightness of the object
- B skill of photographer
- C proximity of object
- D size of the object

**Answer: A**

**Question 42**

On which side did Japan fight in the First World War ?

- A none, it was neutral
- B with Germany against United Kingdom
- C against Russia on its own
- D with United Kingdom against Germany

**Answer: D**

**Question 43**

**The First India-Africa Forum Summit was held during 2008 at:**

- A New Delhi
- B Tana
- C Bangalore
- D Addis Ababa

**Answer: A**

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**Question 44**

**In which year the planning commission was set-up ?**

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

**Answer: A**

**Question 45**

**"Rainbow Coalition" is a term derived from the politics and policies of ;**

- A Pranab Mukherjee
- B Barack Obama
- C Mitt-Romney
- D A.B.Vajpayee

**Answer: B**

**Question 46**

**The layer of the atmosphere in which Radio Waves are reflected back is called ;**

- A Ionosphere
- B Troposphere

C Stratosphere

D Exosphere

Answer: A

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**Question 47**

Who can impose reasonable restrictions over fundamental rights ?

A Council of Ministers

B Parliament

C People

D Cabinet

Answer: B

**Question 48**

The number of eggs normally released during one menstrual cycle is:

A 3

B 2

C 1

D 4

Answer: C

**Question 49**

Who won the under 14 in the "World Youth Chess Championship 2012" ?

A N.Priyanka

B Kimi Raikkonen

C Scott Flemming

D M. Mahalakshmi

Answer: D

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**Question 50**

The animal that do not develop hypertension in spite of heavy intake of salt is:

A Sheep

B Buffalo

C Tiger

D Camel

Answer: D

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### English

#### Instructions

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

#### Question 51

Each one of you (a)/ must make up their mind (b)/ as I did. (c)/ No error (d).

A Each one of you

B must make up their mind

C as I did

D No error

Answer: B

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#### Question 52

Sudoku was first designed in the 1970s (a)/ by a retired architect (b)/ and freelance puzzle constructor, (c)/ No error (d).

A Sudoku was first designed in the 1970s

B by a retired architect

C and freelance puzzle constructor

D No error

Answer: D

#### Question 53

During the last few years (a)/ the company works hard (b) / to modernise its image. (c)/ No en-or (d).

A During the last few years

B the company works hard

C to modernise its image

D No error

Answer: B

#### Question 54

This stamp is only one (a)/ of the design (b)/ ever printed. (c)/ No error (d).

A This stamp is only one

B of the design

C ever printed

D No error

Answer: B

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### Question 55

After he had apologised to the magistrate profusely (a)/ for having broke the promise (b)/ the magistrate was happy to forgive him. (c)/ No error (4).

A After he had apologised to the magistrate profusely

B for having broke the promise

C the magistrate was happy to forgive him

D No error

Answer: B

### Instructions

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

### Question 56

What..... ? It..... wonderful.

A is cooking, smell

B is cooking, smelled

C are you cooking, smelt

D are you cooking, smells

Answer: D

### Question 57

We had .....money left, so we went out for a meal. We decided to abandon our trip as we had..... money left.

A a little, a little

B little, a little

C a few, few

D a little, little

Answer: D

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**Question 58**

Please write to me..... this address.

- A upon
- B at
- C to
- D on

**Answer: B**

**Question 59**

I hate him for the simple reason that he keeps singing his own praises continually talking about himself. He is an irritating..... . He is a real .....because for anything he does he always expects something in return, a selfish person indeed.

- A Poser, Misanthrope
- B Poser, Egotist
- C Egoist Misanthrope
- D Egotist. Egoist

**Answer: D**

**Question 60**

On Tuesday it's the carnival,..... everybody gets dressed up in a fancy costume. So we will meet at John's house,..... is about a couple of kilometres away.

- A which, where
- B where, when
- C when, where
- D when, which

**Answer: D**

## SSC CGL Tier-2 Previous Papers PDF

**Instructions**

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

**Question 61**

**Ingenuous**

- A innocent
- B artful
- C cunning
- D clever



**Answer: A**

**Question 62**

**Innocuous**

- A careless
- B harmless
- C insufficient
- D irresponsible

**Answer: B**

**Question 63**

**Insolent**

- A disrespectful
- B insoluble
- C depreciating
- D the sole of a shoe

**Answer: A**

## SSC CGL Important Questions PDF

**Instructions**

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

**Question 64**

**Overt**

- A open
- B complete
- C hidden
- D culvert

**Answer: C**

**Question 65**

**Diffidence**

- A self-assurance
- B expansiveness
- C shyness
- D sharpness

**Answer: A**

**Question 66**

**Amateur**

- A novice
- B professional
- C lover
- D apprentices

**Answer: B**

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**Instructions**

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

**Question 67**

**He is known for blowing his own trumpet.**

- A clattering
- B shouting
- C clamouring
- D boasting

**Answer: D**

**Question 68**

**He cut the Gordian knot by practising what he preached.**

- A lessened the difficulty
- B let the difficulty remain as it was
- C removed the difficulty
- D add to the difficulty

**Answer: A**

**Question 69**

**He took a leap in the dark with his latest investment in stocks,**

- A took a risk
- B was hesitant
- C was confused
- D was cocksure

**Answer: A**

## General Science Notes for SSC CGL

### Question 70

**Communicative English** is the Achilles' heel for the job aspirants.

- A weak spot
- B source of strength
- C what they cherish most
- D top priority

**Answer:** A

### Question 71

**He is leaving the USA** for good.

- A urgently
- B permanently
- C temporarily
- D immediately

**Answer:** B

### Instructions

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

### Question 72

**They left the hotel by car** where they had been staying.

- A They left the hotel where they had been staying by car.
- B They left where they were staying in a hotel by car.
- C In a car they left where they were staying in a hotel
- D No improvement

**Answer:** D

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### Question 73

**Will you lend me few rupees** in this hour of need ?

- A lend me a little rupees
- B borrow me a few rupees
- C lend me a few rupees
- D No improvement

Answer: C

**Question 74**

Five years ago today, I am sitting in a small Japanese car, driving across Poland towards Berlin.

- A was sitting
- B sat
- C have been sitting
- D No improvement

Answer: A

**Question 75**

He could not look anything in the dark room.

- A look at
- B see
- C see through
- D No improvement

Answer: B

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**Question 76**

No one could explain how a calm and balanced person like him could penetrate such a mindless act on his friends.

- A perpetuate
- B perpetrate
- C precipitate
- D No improvement

Answer: B

**Question 77**

Anyone who would speak with authority on the poets of the Renaissance must have a broad acquaintance with the writers of classical antiquity.

- A Anyone who will speak
- B If one would speak
- C Anyone desirous for speaking
- D No improvement

Answer: D

**Question 78**

He found a wooden broken chair in the room,

- A wooden and broken chair
- B broken wooden chair
- C broken and wooden chair
- D No improvement

**Answer: B**

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**Question 79**

The starving and crawling people in the television programme looked more like beasts than tiring creatures.

- A posed
- B resembled
- C seemed
- D No improvement

**Answer: B**

**Question 80**

I took the cycle which he bought yesterday.

- A that he bought yesterday.
- B which he had bought yesterday.
- C that he has bought yesterday.
- D No improvement

**Answer: B**

**Question 81**

Having only a few hours left, she wondered as she would finish the assignment.

- A that if
- B whether
- C that
- D No improvement

**Answer: B**

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**Instructions**

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

**Question 82**

**A person who readily believes others.**

- A Credible
- B Credulous
- C Sensitive
- D Sensible

**Answer: B**

**Question 83**

**The political leader has an evil reputation. He is not trusted.**

- A is notorious
- B is malicious
- C is magnanimous
- D is dubious

**Answer: D**

**Question 84**

**A person who helps even a stranger in difficulty**

- A Samaritan
- B altruist
- C philanthropist
- D beneficiary

**Answer: A**

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**Question 85**

**Politicians are notorious for doing undue favour to their relatives.**

- A pluralism
- B nepotism
- C dualism
- D polarism

**Answer: B**

**Question 86**

The production of raw silk.

- A sericulture
- B seroculture
- C sariculture
- D syrumculture

**Answer: A**

**Question 87**

Meaningless language with an exaggerated style intended to impress.

- A Orator
- B Public speaking
- C Verbalization
- D Rhetoric

**Answer: D**

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**Question 88**

The conference takes place once in three years.

- A tetraenning
- B triennial
- C treennial
- D thriennial

**Answer: B**

**Instructions**

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

**Question 89**

- A Perjary
- B Perjury
- C Parjury
- D Perjery

**Answer: B**

**Question 90**

- A hetrogenous
- B heterogineous
- C heteroganeous
- D heterogeneous

**Answer: D**

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

### Instructions

Read the passage carefully and choose the best answer to each question out of the four alternatives.

The Bengal Renaissance refers to a social reform movement during the nineteenth and early twentieth centuries in the region of Bengal in Undivided India during the period of British rule. The Bengal renaissance can be said to have started with Raja Ram Mohan Roy (1775-1833) and ended with Rabindranath Tagore (1861-1941), although there have been many stalwarts thereafter embodying particular aspects of the unique intellectual and creative output. Nineteenth century Bengal was a unique blend of religious and social reformers, scholars, literary giants, journalists, patriotic orators and scientists, all merging to form the image of a renaissance, and marked the transition from the 'medieval' to the 'modern'. During this period, Bengal witnessed an intellectual awakening that is in some way similar to the European Renaissance during the 16th century, although Europeans of that age were not confronted with the challenge and influence of alien colonialism. This movement questioned existing orthodoxies, particularly with respect to women, marriage, the dowry system, the caste system and religion. One of the earliest social movements that emerged during this time was the Young Bengal movement, that espoused rationalism and atheism as the common denominators of civil conduct among upper caste educated Hindus. The parallel socio-religious movement, the Brahmo Samaj, developed during this time period and counted many of the leaders of the Bengal Renaissance among its followers.

### Question 91

**Find the option that is opposite in meaning to alien.**

- A disputable
- B indigenous
- C unethical
- D unscientific

**Answer: B**

### Question 92

**The Bengal Renaissance was different from the 16th century European Renaissance because :**

- A Europeans did not have the dowry system.
- B Raja Rammohan Roy and Tagore were not born in the 16th century.
- C The Bengal Renaissance was an essentially Hindu Movement.
- D Unlike the Bengalis, Europeans were not under foreign rule.

**Answer: D**

### Question 93

**"The spirit" of Renaissance:**



- A is to embrace atheism
- B is to get inspiration from Western-intellectual thought
- C lies in breaking all shackles of backwardness and narrow mindedness
- D is essentially scientific

**Answer: C**

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**Question 94**

**The Bengal Renaissance movement:**

- A wanted to overthrow colonialism
- B wanted to propagate Brahmoism
- C wanted social reform to improve the lot of the weak and the downtrodden
- D none of the above

**Answer: C**

**Question 95**

**The Bengal Renaissance gathered momentum in the 19th century because :**

- A the British had colonised India
- B there was an abundance of intellectual and creative activities in Bengal then.
- C the Brahmo Samai was formed
- D Raja Rammohan Roy and Tagore lived at that time

**Answer: B**

**Instructions**

Read the passage carefully and choose the best answer to each question out of the four alternatives.

"I must find a hiding place," he thought, "and in the next few seconds or I am done for." Scarcely had the thought crossed his mind that the lane took a sudden turning so that he found himself hidden from his pursuers. There are circumstances in which the least energetic of mankind learn to act with speed and decision. This was such an occasion for Rehmat Ali and those who knew him best would have been the most astonished at the lad's boldness. He stopped dead, threw the box of jewellery over a garden wall and, leaping upwards with incredible lightness, he seized the top of the wall with his hands and tumbled headlong into the garden.

**Question 96**

**Rehmat Ali is most likely :**

- A a burglar
- B a policeman
- C a night watchman
- D a jogger

**Answer: A**

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### Question 97

What kind of a person was Rehmat Ali originally ?

- A slow and steady
- B lazy and indecisive
- C reflective in nature
- D bold and decisive

Answer: B

### Question 98

The expression 'to stop dead' means:

- A to be paralysed
- B to come to a complete halt
- C to die suddenly
- D be close to death

Answer: B

### Question 99

Rehmat All found himself hidden from his pursuers because:

- A he had gone around an unexpected bend
- B his pursuers could not run fast enough
- C he had stopped dead
- D he had acted with speed and decision

Answer: A

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### Question 100

There are circumstances in which the least energetic of mankind, learn to act with speed and decision, and the most cautious forget their care', Rehmat illustrates this by :

- A running away from his pursuers
- B by stopping dead
- C turning into a lane
- D jumping into the garden

Answer: D

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### Quant

#### Instructions

For the following questions answer them individually

#### Question 101

If  $\left(\frac{3}{4}\right)^3 \left(\frac{4}{3}\right)^{-7} = \left(\frac{3}{4}\right)^{2x}$  then x is

- A -2
- B 2
- C 5
- D 2.5

Answer: C

#### Explanation:

$$\left(\frac{4}{3}\right)^{-7} = \left(\frac{3}{4}\right)^3$$

$$\left(\frac{3}{4}\right)^3 \times \left(\frac{3}{4}\right)^3 = \left(\frac{3}{4}\right)^{10}$$

It is given that

$$\left(\frac{3}{4}\right)^{10} = \left(\frac{3}{4}\right)^{2x}$$

$$2x = 10$$

$$x = 5$$

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#### Question 102

Three numbers are in the ratio 1 : 2 : 3. By adding 5 to each of them, the new numbers are in the ratio 2 : 3 : 4. The numbers are:

- A 10, 20, 30
- B 15, 30, 45
- C 1, 2, 3
- D 5, 10, 15

Answer: D

#### Explanation:

Initial ratio of the numbers 1:2:3

So, let the numbers be y, 2y, 3y

Now adding 5 to each number will give us y+5, 2y+5, 3y+5

as it is given that new ratio is 2:3:4 so assume that the new numbers are 2z, 3z, 4z

and hence we can relate numbers in following way:

$$y+5 = 2z \dots\dots\dots(1)$$

$$2y + 5 = 3z \dots\dots\dots(2)$$

$$3y+5 = 4z \dots\dots\dots(3)$$

from equation 1 and 2

$$y = 5 \text{ and } z = 5$$

So initially the numbers are

(5, 10, 15)

**Question 103**

If  $a^2 + b^2 + c^2 + 3 = 2(a - b - c)$ , then the value of  $2a - b + c$  is :

- A 3
- B 4
- C 0
- D 2

**Answer: D**

**Explanation:**

$$\text{Expression : } a^2 + b^2 + c^2 + 3 = 2(a - b - c)$$

$$\Rightarrow (a^2 - 2a + 1) + (b^2 + 2b + 1) + (c^2 + 2c + 1) = 0$$

$$\Rightarrow (a - 1)^2 + (b + 1)^2 + (c + 1)^2 = 0$$

$$\therefore a - 1 = 0 \Rightarrow a = 1$$

$$\text{and } b + 1 = 0 \Rightarrow b = -1$$

$$\text{and } c + 1 = 0 \Rightarrow c = -1$$

To find :  $2a - b + c$

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

$$= 2 + 1 - 1 = 2$$

**Question 104**

A man buys 3 cows and 8 goats in 47,200. Instead if he would have bought 8 cows and 3 goats, he had to pay 53,000 more. Cost of one cow is

- A 11,000
- B 12,000
- C 13,000
- D 10,000

**Answer: B**

**Explanation:**

Let cost of 1 cow =  $x$  and cost of 1 goat =  $y$

$$\Rightarrow 3x + 8y = 47200$$

$$\text{and } 8x + 3y = 100200$$

$$\Rightarrow \text{Adding the above two equations, we get : } 11x + 11y = 147400$$

$$\Rightarrow x + y = 13400 \text{ -----Eqn (1)}$$

$$\Rightarrow \text{Subtracting those, we get : } 5x - 5y = 53000$$

$$\Rightarrow x - y = 10600 \text{ -----Eqn (2)}$$

Now, adding eqns (1) & (2), we get

$$\Rightarrow 2x = 24000$$

$$\Rightarrow x = 12000$$

## 25 SSC CHSL Mocks for just Rs. 149

### Question 105

A chord of length 30 cm is at a distance of 8 cm from the centre of a circle. The radius of the circle is:

A 17

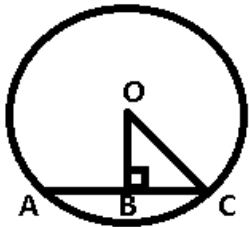
B 23

C 21

D 19

Answer: A

Explanation:



Given :  $AC = 30$  cm and  $OB = 8$  cm

To find :  $OC = ?$

Solution :  $AB = \frac{AC}{2} = 15$  cm

In right  $\triangle OBC$

$$\Rightarrow OC = \sqrt{(OB)^2 + (BC)^2}$$

$$\Rightarrow OC = \sqrt{8^2 + 15^2} = \sqrt{64 + 225}$$

$$\Rightarrow OC = \sqrt{289} = 17 \text{ cm}$$

### Question 106

Number of digits in the square root of 62478078 is:

A 4

B 5

C 6

D 3

Answer: A

Explanation:

When the number of digits in a no. is 7 or 8, then no. of digits in square root will be 4.

62478078 has 8 digits,  $\Rightarrow$  Its square root has 4 digits.

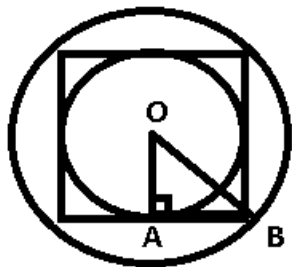
Question 107

The ratio of inradius and circumradius of a square is :

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

Answer: A

Explanation:



Let the side of square be  $a$

$$\Rightarrow \text{Inradius}(OA) = \frac{a}{2} = AB$$

In  $\triangle OAB$

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

$$\Rightarrow OB = \sqrt{\left(\frac{a}{2}\right)^2 + \left(\frac{a}{2}\right)^2}$$

$$\Rightarrow OB = \sqrt{\frac{a^2}{4} + \frac{a^2}{4}} = \sqrt{\frac{a^2}{2}}$$

$$\Rightarrow OB = \frac{a}{\sqrt{2}}$$

To find :  $\frac{OA}{OB}$

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

$$= \frac{1}{\sqrt{2}}$$

## SSC CGL Tier-2 Previous Papers PDF

Question 108

Out of 10 teachers of a school, one teacher retires and in his place, a new teacher of age 25 years joins. As a result, average age of teachers is reduced by 3 years. The age (in years) of the retired teacher is:

- A 58
- B 60
- C 55
- D 50

Answer: C

Explanation:

Number of teachers = 10 years

Let the initial average age be A years

total age before retirement = 10A

Now new average age = (A-3) years

So new total age after new person joined =  $10(A-3) = 10A - 30$  .....(1)

let the age of retired teacher be z years, So

new total age can be calculated also as =  $10A - z + 25$  .....(2)

equations 1 and 2 are equal

so,  $10A - 30 = 10A - z + 25$

$z = 55$  years.

**Question 109**

Evaluate:  $\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 89^\circ$

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

Answer: A

**Explanation:**

$\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 88^\circ \tan 89^\circ$

$= \tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 43^\circ \tan 44^\circ \tan 45^\circ \cot 44^\circ \cot 43^\circ \dots \cot 2^\circ \cot 1^\circ$

As we know  $\tan 1^\circ \times \cot 1^\circ = \tan 2^\circ \times \cot 2^\circ = \dots = \tan 44^\circ \times \cot 44^\circ = 1$

and  $\tan 45^\circ = 1$

hence ,

$\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 88^\circ \tan 89^\circ = 1$

**Question 110**

Equation of the straight line parallel to x-axis and also 3 units below x-axis is :

- A  $x = -3$
- B  $y = 3$
- C  $y = -3$
- D  $x = 3$

Answer: C

**Explanation:**

Equation of straight line parallel to x axis :  $y = k$  where  $k$  is a constant.

The line is 3 units below x axis,  $\Rightarrow k = -3$

Required Equation :  $y = -3$

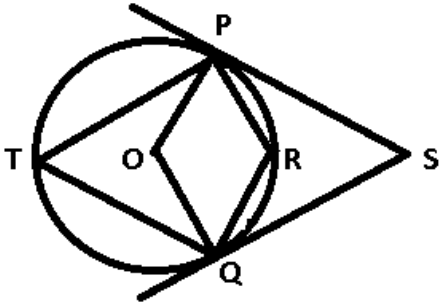
Question 111

P and Q are two points on a circle with centre at O. R is a point on the minor arc of the circle, between the points P and Q. The tangents to the circle at the points P and Q meet each other at the point S. If  $\angle PSQ = 20^\circ$ ,  $\angle PRQ = ?$

- A  $80^\circ$
- B  $200^\circ$
- C  $160^\circ$
- D  $100^\circ$

Answer: D

Explanation:



It is given that  $\angle PSQ = 20^\circ$

and we know that  $\angle OPS = \angle OQS = 90^\circ$

Now, in quadrilateral OPQS, sum of all angles is  $360^\circ$

$$\Rightarrow \angle POQ + \angle PSQ + \angle OPS + \angle OQS = 360^\circ$$

$$\Rightarrow \angle POQ + 20^\circ + 90^\circ + 90^\circ = 360^\circ$$

$$\Rightarrow \angle POQ = 160^\circ$$

Using the property that angle subtended at the centre is double the angle subtended by the same points at any other point on the circle.

$$\Rightarrow \angle PTQ = \frac{\angle POQ}{2} = 80^\circ$$

Also, PTQR is cyclic quadrilateral and thus sum of opposite angles is  $180^\circ$

$$\Rightarrow \angle PRQ = 180^\circ - \angle PTQ = 180^\circ - 80^\circ = 100^\circ$$

Question 112

The value of a machine depreciates every year by 10%. If its present value is 50,000 then the value of the machine after 2 years is

- A 40,050
- B 45,000
- C 40,005
- D 40,500

Answer: D

Explanation:

We know that value after n years of depreciation =  $P \left(1 - \frac{R}{100}\right)^n$

R - Rate of depreciation per annum = 10%

P - Initial amount of machine = Rs 50000



given that time (n) = 2 years

so depreciated value =  $50000 \left(1 - \frac{10}{100}\right)^2 = 50000 \times 0.81 = \text{Rs } 40500$

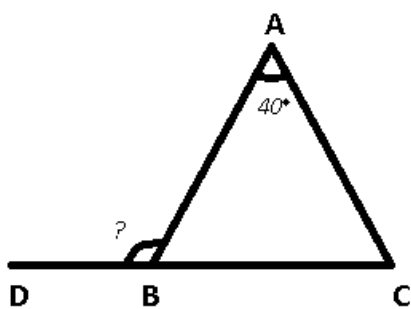
**Question 113**

In a triangle ABC, AB = AC,  $\angle BAC = 40^\circ$  Then the external angle at B is :

- A  $90^\circ$
- B  $70^\circ$
- C  $110^\circ$
- D  $80^\circ$

Answer: C

Explanation:



Since AB = AC  $\Rightarrow \angle ACB = \angle ABC$

In  $\triangle ABC$

$$\Rightarrow \angle ABC + \angle ACB + \angle BAC = 180^\circ$$

$$\Rightarrow 2\angle ABC = 180^\circ - 40^\circ = 140^\circ$$

$$\Rightarrow \angle ABC = 70^\circ$$

To find :  $\angle ABD = 180^\circ - \angle ABC$

$$= 180^\circ - 70^\circ = 110^\circ$$

## 1500 + Free Must Solved SSC Questions (With Solutions)

**Question 114**

A can finish a work in 18 days and B can do the same work in 5 days. B worked for 2 days and left the job. In how many days, A alone can finish the remaining work?

- A 10.8
- B 10
- C 12
- D 8

Answer: A

Explanation:

Let the amount of work be 90 units (which is LCM of 5 and 18)

It is given that A complete 90 units of work in = 18 days

A's 1 day work = 5 units

Given that B completes 180 units of work in = 5 days

B's 1 day work = 18 units

B worked for 2 days then the amount of work done by him =  $18 \times 2 = 36$  units

Units of work left =  $90 - 36 = 54$  units

Now time taken by A to complete the remaining work =  $\frac{54}{5} = 10.8$  days

**Question 115**

**A man can swim 3 km/hr. in still water. If the velocity of the stream is 2 km/hr., the time taken by him to swim to a place 10 km upstream and back is :**

A  $9\frac{1}{3}$  hr

B 10 hr

C 12 hr

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

**Answer: C**

**Explanation:**

Given that speed of swimmer = 3km/hr

speed of river current = 2km/hr

Speed of swimmer in upstream =  $(3-2)$  km/hr = 1 km/hr

Speed of swimmer in downstream =  $(3+2)$  km/hr = 5 km/hr

Distance to be covered upstream = Distance to be covered downstream = 10 km

So time taken in to and fro journey =  $\frac{10}{3-2} + \frac{10}{3+2} = \frac{10}{1} + \frac{10}{5} = 12$  hour

**Question 116**

**It 10 men or 20 women or 40 children can do a piece of work in 7 months, then 5 men, 5 women and 5 children together can do half of the work in :**

A 6 months

B 4 months

C 5 months

D 8 months

**Answer: B**

**Explanation:**

Assume that every month has 30 days , so in 7 months =  $7 \times 30 = 210$  days

Let assume the amount of work be 840 units (which is LCM of 10,20,40, 210)

It is given that 10 men can do 840 units of work in = 210 days

then 1 men's 1 day work =  $\frac{2}{5}$  units

5 men's 1 day work =  $\frac{2}{5}$  units  $\times 5 = 2$  units

20 women can do 840 units of work in = 210 days

1 women's 1 day work =  $\frac{1}{5}$  units

5 women's 1 day work =  $\frac{1}{5}$  units  $\times$  5 = 1 units

40 children's can do 840 units of work in = 210 days

1 children's 1 day work =  $\frac{1}{10}$  units

5 children's 1 day work =  $\frac{1}{10}$  units  $\times$  5 = 0.5 units

Now, (5 men + 5women + 5 children) 's 1 day work = 2 + 1 + 0.5 = 3.5 units

So, number of days required by (5 men + 5women + 5 children) to complete  $\frac{840}{2} = 420$  units of work =  $\frac{420}{3.5} = 120$  days

=  $\frac{120}{30} = 4$  months

## General Science Notes for SSC CGL

### Question 117

The value of  $\cos 1^\circ \cos 2^\circ \cos 3^\circ \dots \cos 177^\circ \cos 178^\circ \cos 179^\circ$  is :

- A 0
- B  $\frac{1}{2}$
- C 1
- D  $\frac{1}{\sqrt{2}}$

Answer: A

#### Explanation:

$\cos 1^\circ \cos 2^\circ \cos 3^\circ \dots \cos 177^\circ \cos 178^\circ \cos 179^\circ$

here in this question when we are progressing from  $1^\circ$  to  $179^\circ$  one by one then in between we will get  $\cos 90^\circ$  whose value is 0 and hence

$$\cos 1^\circ \times \cos 2^\circ \times \cos 3^\circ \times \dots \times 0 \times \cos 91^\circ \dots \cos 177^\circ \times \cos 178^\circ \times \cos 179^\circ = 0$$

### Question 118

If  $p - 2q = 4$ , then the value of  $p^3 - 8q^3 - 24pq - 64$  is :

- A 2
- B 0
- C 3
- D -1

Answer: B

#### Explanation:

Expression :  $p - 2q = 4$

Cubing both sides, we get :

$$\Rightarrow (p - 2q)^3 = 4^3$$

$$\Rightarrow p^3 - 8q^3 - 6pq(p - 2q) = 64$$

$$\Rightarrow p^3 - 8q^3 - 24pq = 64$$

$$\Rightarrow p^3 - 8q^3 - 24pq - 64 = 0$$

**Question 119**

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

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

**Answer: B**

**Explanation:**

we need to find :  $\sin^2\theta + \operatorname{cosec}^2\theta$

Given that :  $\sin\theta + \operatorname{cosec}\theta = 2$

So squaring both sides

$$(\sin\theta + \operatorname{cosec}\theta)^2 = (2)^2$$

$$\sin^2\theta + \operatorname{cosec}^2\theta + 2\sin\theta\operatorname{cosec}\theta = 4$$

$$\sin^2\theta + \operatorname{cosec}^2\theta = 4 - 2 = 2$$

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**Question 120**

A shopkeeper marks the price of an article at 80. What will be the selling price, if he allows two successive discounts at 5% each ?

- A 72.2
- B 72
- C 85
- D 7.2

**Answer: A**

**Explanation:**

marked price of article = Rs 80

Now as it is given that two successive discounts of 5% are being provided it means after 1st discount price becomes =  $0.95 \times 80 = 76$

Now after 2nd 5% discount price becomes =  $0.95 \times 76 = \text{Rs } 72.2$

Hence selling price = Rs 72.2

**Question 121**

Which of the following successive discounts is better to a customer

- (a) 20%, 15%, 10% or
- (b) 25%, 12%, 8% ?

- A (a) is better
- B (b) is better
- C (a) or (b) (both are same)
- D None of these

**Answer: B**

**Explanation:**

Let the initial amount be Rs  $y$

case 1: 3 discounts of 20%, 15%, 10% are given

amount after 1st discount of 20% =  $0.8y$

amount after 2nd discount of 15% =  $0.85 \times 0.8y = 0.68y$

amount after 3rd discount of 10% =  $0.9 \times 0.68y = 0.612y$

So, effective discount for the given 3 discount =  $\frac{y - 0.612y}{y} \times 100 = 38.8\%$

case 2: 3 discounts of 25%, 12%, 8%

amount after 1st discount of 25% =  $0.75y$

amount after 2nd discount of 12% =  $0.88 \times 0.75y = 0.66y$

amount after 3rd discount of 8% =  $0.92 \times 0.66y = 0.6072y$

So, effective discount for the given 3 discount =  $\frac{y - 0.6072y}{y} \times 100 = 39.28\%$

As we can see that effectively 2nd series of successive discounts is more advantageous for consumer. So the answer is option B

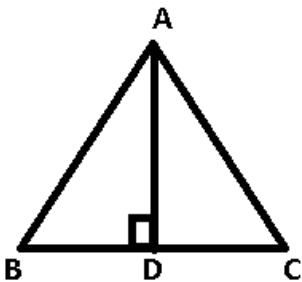
**Question 122**

ABC is an isosceles triangle such that  $AB = AC$  and  $\angle B = 35^\circ$ . AD is the median to the base BC. Then  $\angle BAD$  is:

- A  $70^\circ$
- B  $35^\circ$
- C  $110^\circ$
- D  $55^\circ$

Answer: D

**Explanation:**



In an isosceles triangle, a median is also perpendicular to the base.

Now, in  $\triangle ABD$

$$\Rightarrow \angle ABD + \angle ADB + \angle BAD = 180^\circ$$

$$\Rightarrow 35^\circ + 90^\circ + \angle BAD = 180^\circ$$

$$\Rightarrow \angle BAD = 180^\circ - 125^\circ = 55^\circ$$

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**Question 123**

The degree measure of 1 radian  $\pi = \frac{22}{7}$  is

- A  $57^{\circ}60'22''$  (approx.)
- B  $57^{\circ}16'22''$  (approx.)
- C  $57^{\circ}21'16''$  (approx.)
- D  $57^{\circ}22'16''$  (approx.)

**Answer: B**

**Explanation:**

We know that,  $\pi \text{ rad} = 180^{\circ}$

$$\Rightarrow 1 \text{ rad} = \frac{180^{\circ}}{\pi} = 57.2727^{\circ}$$

$$\Rightarrow \text{Converting to minutes} = (0.2727 \times 60) = 16.36200'$$

$$\Rightarrow \text{Converting to seconds} = (0.362 \times 60) = 21.72''$$

$$\Rightarrow 1 \text{ radian} = 57^{\circ}16'22'' \text{ (approx)}$$

**Question 124**

A train moving at a rate of 36 km/hr. crosses a standing man in 10 seconds. It will cross a platform 55 metres long, in :

- A 6 seconds
- B 7 seconds
- C  $15\frac{1}{2}$  seconds
- D  $5\frac{1}{2}$  seconds

**Answer: C**

**Explanation:**

Let the length of train be y meter

$$\text{speed of train} = 36 \text{ km/hr} = 36 \times \frac{5}{18} = 10 \text{ m/sec}$$

It crosses a man in 10 seconds . a train is assumed to cross a man when the train's back part fully crosses the man and hence

$$y = 10 \times 10 = 100 \text{ meter}$$

Platform length = 55 meter

time taken to cross a platform

$$(55 + 100) = 10 \times T$$

$$T = 15\frac{1}{2} \text{ seconds}$$

**Question 125**

If  $(n^2 - tn + \frac{1}{4})$  be a perfect square then the value of t are:

- A  $\pm 2$
- B 1, 2
- C 2,3
- D  $\pm 1$

**Answer: D**

**Explanation:**

If  $(n^2 - tn + \frac{1}{4})$  need to be a perfect square then ,

$$(n^2 - tn + \frac{1}{4}) = (n^2 + \pm 2^2 - 2 \times \pm 2n)$$

and hence we can conclude that "t" can take  $\pm 1$  value

## SSC Free Preparation App

### Question 126

If  $\frac{x}{a} = \frac{1}{a} - \frac{1}{x}$  then of  $x - x^2$  is

A  $-a$

B  $\frac{1}{a}$

C  $-\frac{1}{a}$

D  $a$

Answer: D

Explanation:

$$\frac{x}{a} = \frac{1}{a} - \frac{1}{x}$$

$$\frac{x}{a} - \frac{1}{a} = -\frac{1}{x}$$

$$\frac{1-x}{a} = \frac{1}{x}$$

and hence ,

$$x - x^2 = a$$

So D is the correct option

### Question 127

If  $\Delta ABC$  is similar to  $\Delta DEF$  such that  $BC = 3$  cm,  $EF = 4$  cm and area of  $\Delta ABC = 54$   $cm^2$  ,

A 66 sq. cm

B 78 sq. cm

C 96 sq. cm

D 54 sq. cm

Answer: C

Explanation:

Since, ratio of areas of two similar triangles is equal to the ratio of squares of any two corresponding sides.

$$BC = 3 \text{ cm} , EF = 4 \text{ cm}$$

$$\Rightarrow \frac{\Delta ABC}{\Delta DEF} = \frac{BC^2}{EF^2}$$

$$\Rightarrow \frac{54}{\Delta DEF} = \frac{9}{16}$$

$$\Rightarrow \Delta DEF = \frac{54 \times 16}{9} = 96 cm^2$$

### Question 128

On selling an article for ! 170, a shopkeeper loses 15%. In order to gain 20%, he must sell that article at rupees:

- A 215.50
- B 212.50
- C 240
- D 210

**Answer: C**

**Explanation:**

Original S.P. = 170

Loss % = 15%

Let C.P. =  $x$

$$\Rightarrow \frac{x-170}{x} * 100 = 15$$

$$\Rightarrow 17x = 3400 \Rightarrow x = 200$$

Profit % = 20%

$$\Rightarrow \text{Profit amount} = \frac{20}{100} * 200 = 40$$

New S.P. = 200+40 = 240

## Daily Free SSC Practice Set

**Question 129**

The time in which 80,000 amounts to 92,610 at 10% p.a. at compound interest, interest being compounded semi annually is :

- A 1.5 years
- B 2 years
- C 2.5 years
- D 3 years

**Answer: A**

**Explanation:**

Given that Rs 80000 becomes Rs 92610 at 10% per annum .

$$\text{semi-annual Rate become} = \frac{10}{2} = 5\%$$

Let number of semi-annual cycles required = T

So Using ,

$$\text{Compounded Amount} = P\left(1 + \frac{R}{100}\right)^T$$

$$92610 = 80000\left(1 + \frac{5}{100}\right)^T$$

$$T = 3 \text{ semi annual cycles} = 1.5 \text{ years}$$

**Question 130**

If ABCD be a rectangle and P,Q,R,S be the mid points of AB, BC, CD, and DA respectively,, then the area of the quadrilateral PQRS is equal to:

- A area (ABCD)
- B  $\frac{1}{3}$  area (ABCD)

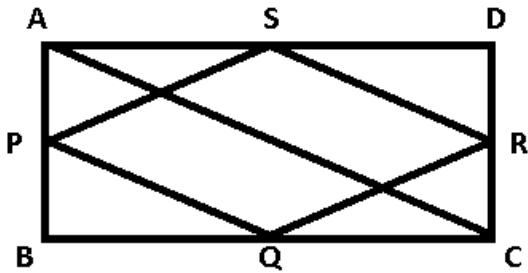


C  $\frac{3}{4}$  area (ABCD)

D  $\frac{1}{2}$  area (ABCD)

Answer: D

Explanation:



Using the theorem that a line joining the mid points of 2 sides of the triangle is parallel to the third side and equal to half of its length.

$$\Rightarrow PQ = \frac{1}{2} AC \text{ and } PQ \parallel AC$$

Similarly,  $RS = \frac{1}{2} AC$  and  $RS \parallel AC$

$\Rightarrow$  PQRS is a parallelogram.

Also,  $\triangle PQB \sim \triangle ABC$

$$\Rightarrow \frac{ar(\triangle PQB)}{ar(\triangle ABC)} = \frac{PQ^2}{BC^2} = \frac{1}{4}$$

$$\Rightarrow ar(\triangle PQB) = \frac{1}{4} ar(\triangle ABC)$$

Similarly,  $ar(\triangle SDR) = \frac{1}{4} ar(\triangle ADC)$

$$ar(\triangle CRQ) = \frac{1}{4} ar(\triangle CDB)$$

$$ar(\triangle ASP) = \frac{1}{4} ar(\triangle ADB)$$

$$\Rightarrow ar(PQRS) = ar(ABCD) - ar(\triangle PQB) - ar(\triangle SDR) - ar(\triangle CRQ) - ar(\triangle ASP)$$

$$\Rightarrow ar(PQRS) = ar(ABCD) - \frac{1}{4} * [ar(\triangle ABC) + ar(\triangle ADC) + ar(\triangle CDB) + ar(\triangle ADB)]$$

$$\Rightarrow ar(PQRS) = ar(ABCD) - \frac{1}{4} * [2 * ar(ABCD)]$$

$$\Rightarrow ar(PQRS) = \frac{1}{2} ar(ABCD)$$

Question 131

AB and CD are two parallel chords of a circle such that AB = 10 cm and CD = 24 cm. If the chords are on the opposite sides of the centre and distance between them is 17 cm, then the radius of the circle is :

A 11 cm

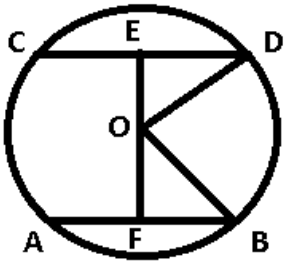
B 12 cm

C 13 cm

D 10 cm

Answer: C

Explanation:



Given :  $AB = 10$  ,  $CD = 24$  and  $EF = 17$  cm

To find :  $OB = OD = r = ?$

Solution : A line perpendicular to the chord from the centre of the circle bisects the chord.

$$\Rightarrow AF = FB = \frac{AB}{2} = \frac{10}{2} = 5$$

Similarly,  $CE = ED = 12$

Let  $OF = x \Rightarrow OE = (17 - x)$

In right  $\triangle OFB$

$$\begin{aligned} \Rightarrow (OB)^2 &= (OF)^2 + (FB)^2 \\ \Rightarrow r^2 &= x^2 + 25 \end{aligned}$$

Now, in right  $\triangle OED$

$$\begin{aligned} \Rightarrow (OD)^2 &= (OE)^2 + (ED)^2 \\ \Rightarrow r^2 &= (17 - x)^2 + 144 \end{aligned}$$

$$\Rightarrow x^2 + 25 = x^2 - 34x + 289 + 144$$

$$\Rightarrow 34x = 408$$

$$\Rightarrow x = \frac{408}{34} = 12$$

$$\Rightarrow r^2 = 12^2 + 25$$

$$\Rightarrow r = \sqrt{169} = 13 \text{ cm}$$

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**Question 132**

The average of 50 numbers is 38. If two numbers namely 45 and 55 are discarded, the average of the remaining numbers is :

- A 35
- B 32.5
- C 37.5
- D 36

**Answer: C**

**Explanation:**

Given that average age of 50 members = 38 years

So using , average =  $\frac{\text{Sum of Age}}{\text{number of persons}}$

$$\text{Sum of ages} = 50 \times 38 = 1900$$

Now 45 and 55 are discarded and hence number of term left = 48

$$\text{and Total Sum left} = 1900 - 45 - 55 = 1800$$

$$\text{New Average} = \frac{1800}{48} = 37.5$$

**Question 133**

If  $x^2 - 2x + 1 = \frac{1}{3}$  then the value of  $x^3 + \frac{1}{x^3}$  is :

- A 81
- B 110
- C 125
- D 27

**Answer: B**

**Explanation:**

$$x^3 + \frac{1}{x^3} = \left(x + \frac{1}{x}\right)^3 - 3\left(x + \frac{1}{x}\right) \dots\dots\dots(1)$$

Now,

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

$$(x^2 - 2x + 1) = 3x$$

$$(x^2 - 5x + 1) = 0$$

$$(x^2 + 1) = 5x \dots\dots\dots(2)$$

using equation 1 and 2

$$\left(x + \frac{1}{x}\right)^3 - 3\left(x + \frac{1}{x}\right) = \left(\frac{x^2+1}{x}\right)^3 - 3 \frac{(x^2+1)}{x} = 125 - 15 = 110$$

**Question 134**

The marked price of a mixie is 1600, The shopkeeper gives successive discounts of 10% and x% to the customer. If the customer pays 1224 for the mixie, find the value of x

- A 10%
- B 12%
- C 15%
- D 8%

**Answer: C**

**Explanation:**

Marked price = 1600

$$\text{After 1st discount of 10\%} \Rightarrow 10\% \text{ of } 1600 = \frac{10}{100} * 1600 = 160$$

$$\text{Amount payable} = 1600 - 160 = 1440$$

After 2nd discount of x%

$$\Rightarrow x\% \text{ of } 1440 = \frac{x}{100} * 1440 = 14.4x$$

$$\Rightarrow \text{Customer will pay} = 1440 - 14.4x = 1224$$

$$\Rightarrow 14.4x = 216$$

$$\Rightarrow x = 15$$

Question 135

'Given A is 50% larger than C and B is 25% larger than C, then A is what percent larger than B?

- A 25%
- B 50%
- C 75%
- D 20%

Answer: D

Explanation:

Let C be 100

So, It is given that B is 25% more than C so,  $B = 1.25 C = 1.25 \times 100 = 125$

It is given that A is 50% more than C, so,  $A = 1.5 C = 1.5 \times 100 = 150$

Now A is greater than B by  $= \frac{150-125}{125} \times 100 = 20\%$

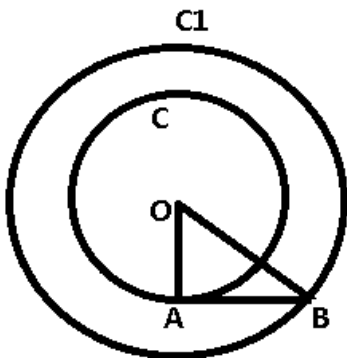
Question 136

A chord AB of a circle C1 of radius  $(\sqrt{3} + 1)$  cm touches a circle C which is concentric to C. If the radius of C is  $(\sqrt{3} - 1)$  cm., the length of AB is :

- A  $2\sqrt{3}$  cm
- B  $8\sqrt{3}$  cm
- C  $4\sqrt{3}$  cm
- D  $4\sqrt{3}$

Answer: A

Explanation:



$$OB = (\sqrt{3} + 1) \text{ cm}$$

$$OA = (\sqrt{3} - 1) \text{ cm}$$

In right  $\triangle OAB$

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

$$\Rightarrow (AB)^2 = (\sqrt{3} + 1)^2 - (\sqrt{3} - 1)^2$$

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

$$\Rightarrow (AB)^2 = 4\sqrt{3}$$

$$\Rightarrow AB = \sqrt{4\sqrt{3}}$$

$$\Rightarrow AB = 2\sqrt[4]{3}$$

**Question 137**

If  $(x + \frac{1}{x}) = 4$  then the value of  $x^4 + \frac{1}{x^4}$  is

- A 64
- B 194
- C 81
- D 124

**Answer: B**

**Explanation:**

$$(x + \frac{1}{x}) = 4$$

squaring both sides

$$x^2 + \frac{1}{x^2} + 2 * x * \frac{1}{x} = 16$$

$$x^2 + \frac{1}{x^2} = 16 - 2 = 14$$

again squaring both sides

$$x^4 + \frac{1}{x^4} + 2 * x^2 * \frac{1}{x^2} = 196$$

$$x^4 + \frac{1}{x^4} = 196 - 2 = 194$$

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**Question 138**

The perimeter of the base of a right circular cone is 8 cm. If the height of the cone is 21 cm, then its volume is:

- A  $108\pi cm^3$
- B  $\frac{112}{\pi} cm^3$
- C  $112\pi cm^3$
- D  $\frac{108}{\pi} cm^3$

**Answer: B**

**Explanation:**

Let the radius of the cone be  $r$  and height = 21

$$\Rightarrow \text{Perimeter of base} = 2\pi r = 8$$

$$\Rightarrow r = \frac{4}{\pi}$$

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

$$= \frac{1}{3}\pi \left(\frac{4}{\pi}\right)^2 21$$

$$= \frac{112}{\pi} cm^3$$

**Question 139**

A circular road runs around a circular ground. If the difference between the circumferences of the outer circle and the inner circle is 66 metres, the width of the road is:

- A 10.5 metres
- B 7 metres
- C 5.25 metres
- D 21 metres

**Answer: A**

**Explanation:**

Let the radius of outer circle be  $R$  and of smaller circle be  $r$

Width of road =  $(R - r) = ?$

Acc to ques :

$$\Rightarrow 2\pi R - 2\pi r = 66$$

$$\Rightarrow R - r = \frac{33}{\pi}$$

$$\Rightarrow R - r = \frac{33 \times 7}{22} = 10.5m$$

**Question 140**

If  $\sec \theta + \tan \theta = 2 + \sqrt{5}$ , then the value of  $\sin \theta + \cos \theta$  is :

- A  $\frac{3}{\sqrt{5}}$
- B  $\sqrt{5}$
- C  $\frac{7}{\sqrt{5}}$
- D  $\frac{1}{\sqrt{5}}$

**Answer: A**

**Explanation:**

given  $\sec \theta + \tan \theta = 2 + \sqrt{5}$ -----(1)

we know that,

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

$$(\sec \theta + \tan \theta) \cdot (\sec \theta - \tan \theta) = 1$$

$$(2 + \sqrt{5}) \cdot (\sec \theta - \tan \theta) = 1$$

$$(\sec \theta - \tan \theta) = \frac{1}{2 + \sqrt{5}}$$
-----(2)

on solving (1)&(2)

$$\sec \theta = \sqrt{5} \Rightarrow \cos \theta = \frac{1}{\sqrt{5}}$$

$$\tan \theta = 2 \Rightarrow \frac{\sin \theta}{\cos \theta} = 2 \Rightarrow \sin \theta = 2 \cdot \cos \theta \Rightarrow \sin \theta = \frac{2}{\sqrt{5}}$$

$$\Rightarrow \sin \theta + \cos \theta = \frac{1}{\sqrt{5}} + \frac{2}{\sqrt{5}}$$

$$\Rightarrow \sin \theta + \cos \theta = \frac{3}{\sqrt{5}}$$

so the answer is option A.

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**Question 141**

The value of  $(\sin^2 25^\circ + \sin^2 65^\circ)$  is :

- A  $\frac{\sqrt{3}}{2}$
- B 1
- C 0
- D  $\frac{2}{\sqrt{3}}$

Answer: B

**Explanation:**

the given equation is  $(\sin^2 25^\circ + \sin^2 65^\circ)$

we know that  $\sin^2 25^\circ = \sin^2(90 - 65) = \cos^2 65$

So,  $(\sin^2 25^\circ + \sin^2 65^\circ) = \cos^2 65 + \sin^2 65$

and we know that  $\sin^2 \theta + \cos^2 \theta = 1$

Hence  $\cos^2 65 + \sin^2(65) = 1$

**Question 142**

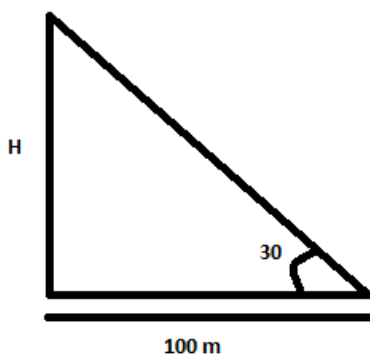
The angle of elevation of a tower from a distance 100 m from its foot is  $30^\circ$ . Height of the tower is :

- A  $\frac{100}{\sqrt{3}}$  m
- B  $50\sqrt{3}$  m
- C  $\frac{200}{\sqrt{3}}$  m
- D  $100\sqrt{3}$  m

Answer: A

**Explanation:**

it is given that angle of elevation of a tower from a distance 100 m from its foot is  $30^\circ$



using,

$$\tan 30 = \frac{H}{100}$$

$$\frac{1}{\sqrt{3}} = \frac{H}{100}$$

$$H = \frac{100}{\sqrt{3}} \text{ m}$$

Question 143

A man undertakes to do a certain work in 150 days. He employs 200 men. He finds that only a quarter of the work is done in 50 days. The number of additional men that should be appointed so that the whole work will be finished in time is :

- A 75
- B 100
- C 125
- D 50

Answer: B

Explanation:

lcm of 150,200,50 = 600

lets assume total work to be 600 units

work completed in 50 days =  $600 \times \frac{1}{4} = 150$  units

work left to be completed in 100 days = 450 units

actual work completed by per man per day =  $\frac{150}{50 \times 200}$

100 days of work per man =  $\frac{150 \times 100}{50 \times 200} = 1.5$  units

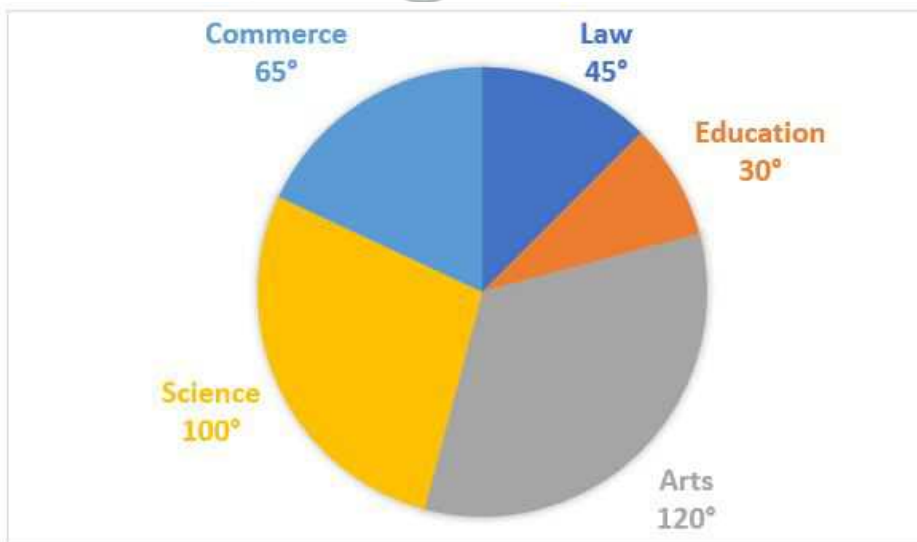
total men needed to complete the leftover work =  $\frac{450}{1.5} = 300$  men

so additional men needed =  $300 - 200 = 100$  men

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Instructions

In the following questions, the pie-chart shows the number of students admitted in different faculties of a college. Study the chart and answer the questions.



Question 144

How many students are more in commerce than in law if 1000 students are in science?

- A 200
- B 2000



C 500

D 20

**Answer: A**

**Explanation:**

No. of students in Science = 1000

Angle subtended by students in Science =  $100^\circ$

$$\Rightarrow \text{Total no. of students} = \frac{1000}{100} * 360 = 3600$$

Angle subtended by students in Commerce =  $65^\circ$

$$\Rightarrow \text{No. of students in Commerce} = \frac{65}{360} * 3600 = 650$$

Angle subtended by students in Law =  $45^\circ$

$$\Rightarrow \text{No. of students in Law} = \frac{45}{360} * 3600 = 450$$

$\therefore$  No. of students more in commerce than in law =  $650 - 450 = 200$

(SHORTCUT) :

Since, angle subtended in Science =  $100^\circ$  and no. of students given in Science = 1000

$$\Rightarrow 1^\circ = 10 \text{ students}$$

Difference in angle between commerce and law =  $65 - 45 = 20^\circ$

$$\Rightarrow \text{Difference in students} = 200 \text{ [Since, } 1^\circ = 10 \text{ students, } \Rightarrow 20^\circ = 200 \text{ students]}$$

**Question 145**

**If 1000 students are admitted in science, what is the ratio of students in science and arts?**

A 6 : 5

B 7 : 5

C 7 : 6

D 5 : 6

**Answer: D**

**Explanation:**

No. of students in Science = 1000

Angle subtended by students in Science =  $100^\circ$

$$\Rightarrow \text{Total no. of students} = \frac{1000}{100} * 360 = 3600$$

No. of students in arts =  $\frac{120}{360} * 3600 = 1200$

$$\text{Required ratio} = \frac{1000}{1200} = 5 : 6$$

(SHORTCUT) :

Ratio will be equal to the angle subtended by them at the centre.

$$\Rightarrow \text{Required ratio} = \frac{100}{120} = 5 : 6$$

**Question 146**

**If 1000 students are admitted in science, what is the total number of students?**

- A 180
- B 1800
- C 3600
- D 360

**Answer: C**

**Explanation:**

No. of students in Science = 1000

Angle subtended by students in Science =  $100^\circ$

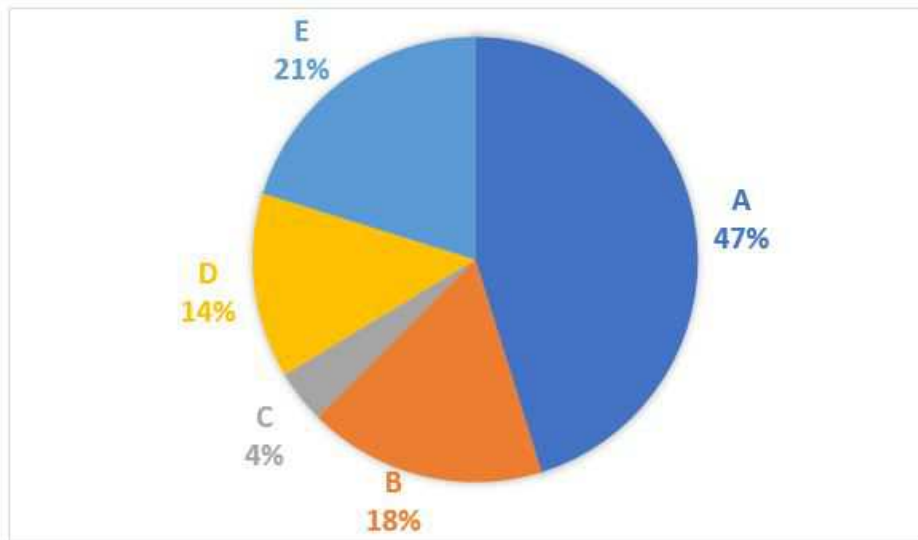
$$\Rightarrow \text{Total no. of students} = \frac{1000}{100} * 360 = 3600$$

## SSC CGL Free Mock Test

**Instructions**

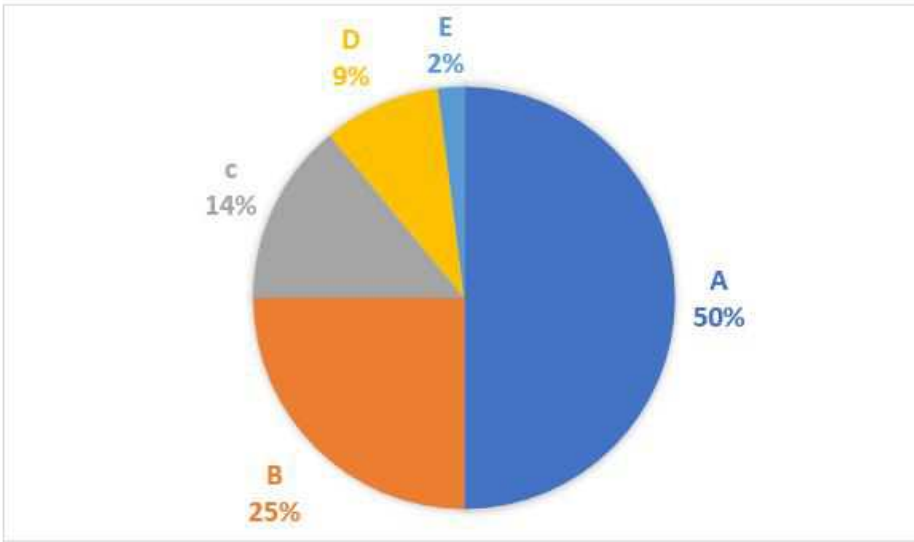
In the following questions, study the two pie-charts and answer the questions.

**April month's salary : 24000**



- A :- Education
- B :- Savings
- C :- Grocery
- D :- Electricity and Phone Bills
- E :- Miscellaneous

**May month's salary : 25000**



**Question 147**

What is the percent increase in Education in May month than April month ?

- A 9.56%
- B 12.35%
- C 20%
- D 10.82%

**Answer: D**

**Explanation:**

April's month salary = 24,000

Expense on education in April =  $\frac{47}{100} * 24000 = 11280$

May's month salary = 25,000

Expense on education in May =  $\frac{50}{100} * 25000 = 12500$

$$\begin{aligned} \Rightarrow \% \text{ increase in education in May than in April} &= \frac{12500 - 11280}{11280} * 100 \\ &= \frac{1220}{11280} * 100 = 10.815\% \\ &= \sim 10.82\% \end{aligned}$$

**Question 148**

The ratio of amount spent for savings in April month's salary and miscellaneous in May month's salary is :

- A 216 : 25
- B 217 : 26
- C 205 : 13
- D 235 : 50

**Answer: A**

**Explanation:**

April's month salary = 24,000

Spent on savings in April =  $\frac{18}{100} * 24000 = 4320$

May's month salary = 25,000

Spent on miscellaneous in May =  $\frac{2}{100} * 25000 = 500$

=> Required ratio =  $\frac{4320}{500} = 216 : 25$

**Question 149**

**From the salary of May, the amount spent on Grocery and Electricity are:**

- A 6250, 3360
- B 960, 5040
- C 3500, 2250
- D 2160, 480

**Answer: C**

**Explanation:**

May's salary = 25,000

% spent on grocery = 14%

=> Amount spent on grocery =  $\frac{14}{100} * 25000 = 3500$

% spent on electricity = 9%

=> Amount spent on electricity =  $\frac{9}{100} * 25000 = 2250$

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**Question 150**

**The average amount spent on Education, Grocery and Savings from April month's salary is**

- A 5800
- B 6000
- C 6325
- D 5520

**Answer: D**

**Explanation:**

April's month salary = 24,000

% spent on education = 47%

% spent on savings = 18%

% spent on grocery = 4%

Average % spent on these 3 items =  $\frac{47+18+4}{3} = 23\%$

Now, average amount spent on education, savings and grocery =  $\frac{23}{100} * 24000$   
= 5520

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## Reasoning

### Instructions

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

### Question 151

A\_E : R\_V :: B\_F : F\_J

- A BSCG
- B FUGK
- C CSCG
- D CTDH

**Answer:** D

### Explanation:

The pattern followed is :

A (+2 letters) = C (+2 letters) = E

R (+2 letters) = T (+2 letters) = V

B (+2 letters) = D (+2 letters) = F

F (+2 letters) = H (+2 letters) = J

Thus, missing letters = **CTDH**

=> Ans - (D)

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### Question 152

Horse : Neigh :: Bells : ?

- A Chime
- B Rustle
- C Roar
- D Beat

**Answer:** A

### Explanation:

The sound made by horse is called Neigh. Similarly, the sound made by a bell is called chime.

=> Ans - (A)

### Question 153

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

- A aab
- B abb
- C bbb
- D bba

**Answer:** C

**Explanation:**

Expression : a\_bba\_bba\_bb

In a group of 4 letters the term 'abbb' is repeated.

= abbb abbb abbb

=> Ans - (C)

**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 154**

YYZ,VYZ,SYZ,PYZ, ?

A TYZ

B RYZ

C MYZ

D XYZ

**Answer:** C

**Explanation:**

The first letter of each term is the third letter from the first letter of the next term.

The middle letter of each term is Y.

The last letter of each term is Z.

P is the third letter from M.

The solution is MYZ.

Hence Option C is the correct answer.

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**Question 155**

5,13,29,61,125, ? .

A 253

B 196

C 245

D 145

**Answer:** A

**Explanation:**

Each term of the series is 3 more than twice the previous term.

Hence the missing term must be 3 more than twice of 125.

Missing term is 253.

Hence Option A is the correct answer.

**Question 156**

AZ, CX, EV, GT, ? , KP, ? .

- A IR and NM
- B RI and MN
- C RI and NM
- D IR and MN

**Answer: D**

**Explanation:**

The first letter in each term is the second letter from the first letter of the preceding term.  
 The second letter of each term is the second letter from the second letter of the succeeding term.  
 The first missing term is IR and second missing term is MN.  
 Hence Option D is the correct answer.

**Question 157**

**TQNKHEBYVSP???**

- A NKG
- B NM
- C MJG
- D MJH

**Answer: C**

**Explanation:**

Each letter in the series is third letter from the next letter  
 T is the third letter from Q.  
 Q is the third letter from N and so on.  
 P is the third letter from M.  
 M is the third letter from J .  
 J is the third letter from G.  
 The missing letters are MJG.  
 Hence Option C is the correct answer.

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**Question 158**

**61, 52, 63, 94, 46 ?**

- A 19
- B 18
- C 17
- D None

**Answer: B**

**Explanation:**

The numbers in the series are square of consecutive numbers with their digits reversed.  
 $4^2 = 16 \implies 61$   
 $5^2 = 25 \implies 52$  and so on.  
 The last term is  $46 \implies 64 \implies 8^2$   
 Hence the next term must be the reverse of  $9^2$  which is 18.

Option B is the correct answer.

**Question 159**

EFA, GHC, IJE, ? .

- A JKG
- B KLG
- C HIF
- D KDA

**Answer: B**

**Explanation:**

Each letter of a term is the second letter from the corresponding term in its preceding term.  
The missing term is KLG.  
Hence Option B is the correct answer.

**Question 160**

P 3 C, R 5 F, T8I, V12 L. ?

- A X17M
- B X17O
- C Y17O
- D X16O

**Answer: B**

**Explanation:**

The number in each term is (n) more than the previous term where n is the position of the term  
1st term n=1  
2nd term n=2 and so on.  
The fifth term would be 5 more than 12.  
The first letter of each term is the second letter from the first letter of the preceding term.  
The first letter of fifth term is X.  
The last letter of each term is the third letter from the last letter of the preceding term.  
The last letter of fifth term is O.  
The fifth term is X17O.  
Hence Option B is the correct answer.

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**Question 161**

NP MK RT IG ? .

- A UW
- B FD
- C EC
- D VX



**Answer: D**

**Explanation:**

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

Hence Option B and Option C can be neglected.

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

The second term of third term is T.

The first term of the fifth term would be V.

The second term from V is X.

The missing term is VX.

Hence Option D is the correct answer.

**Question 162**

1 3, 10, ? 100, 1003, 1000, 10003.

A 1030

B 1130

C 103

D 130

**Answer: C**

**Explanation:**

Each term in the even places is 3 less than the term preceeding it.

The missing term is 103.

Hence Option C is the correct answer.

**Instructions**

For the following questions answer them individually

**Question 163**

Certain numbers have symbols as given below.

1 2 3 4 5 6 7 8 9 0  
□ ◻ ( [ ] ◻ ◻ ) ^ ~

What is the number indicated by these symbols ?

[ ] ^ ~ ◻

A 56907

B 45096

C 45906

D 47095

**Answer: C**

**Explanation:**

From the given symbols and their corresponding numbers, it can be clearly seen that

[ ] ^ ~ ◻

represents :4 5 9 0 6. option C.

## General Science Notes for SSC CGL

### Instructions

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

### Question 164

- A Yellow Orange
- B Red Yellow
- C Red Orange
- D Yellow Green

**Answer:** B

### Explanation:

All the pairs of colors given are consecutive pairs in the rainbow except the second option, which have orange color between them.

=> Ans - (B)

### Question 165

27, 125, 216, 343

- A 125
- B 216
- C 343
- D 27

**Answer:** B

### Explanation:

$$27 = 3^3$$

$$125 = 5^3$$

$$216 = 6^3$$

$$343 = 7^3$$

Only 216 is a cube of even number, hence it is the odd one.

=> Ans - (B)

### Question 166

- A Pound (Sterling)
- B Deutsche Mark
- C Yen
- D Franc

**Answer:** C

### Explanation:

Yen is the currency of Japan, an Asian country. Pound (Sterling), Deutsche Mark and Franc are currencies of European countries

=> Ans - (C)

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Question 167

- A firm
- B grave
- C agreeable
- D fastidious

Answer: C

**Explanation:**

Agreeable is different from the other three words. Agreeable (Adjective) means 'pleasant', 'giving pleasure', 'ready to agree'.

Firm (Adjective) means 'not yielding when pressed', 'fairly hard', 'definite', 'not likely to change' etc.

Grave (Adjective) means 'serious and important', 'giving cause for worry'.

Fastidious (Adjective) means 'selecting carefully', 'hard to please', 'easily disgusted'.

=> Ans - (C)

**Instructions**

For the following questions answer them individually

Question 168

What is the least number to be subtracted from 2486 to make it a perfect square

- A 85
- B 90
- C 95
- D 80

Answer: A

**Explanation:**

Closest perfect square to 2486 is  $49^2 = 2401$ .

Hence,  $2486 - 2401 = 85$

Question 169

Shiela and Belah start from their office and walk in opposite direction each travelling 10 kms. Shiela then turns left and walks 10 kms. Belah turns right and walks 10 km. How far are they now from each other?

- A 10 km
- B 5 km
- C 81un
- D 20 km

Answer: D

**Explanation:**

Because initially Sheila and Bela walk in different directions, therefore after turning left and right they will end up facing the same direction, therefore the only distance between them will be horizontal, which will be equal to  $10 + (-10) = 20$ km. therefore the correct answer is option D.

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### Question 170

Roshan is taller than Hardik who is shorter than Susheel. Niza is taller than Harry but shorter than Hardik. Susheel is shorter than Roshan. Who is the tallest ?

- A Susheel
- B Hardik
- C Harry
- D Roshan

**Answer:** D

#### Explanation:

Given, Roshan(R) is taller than Hardik(H) who is shorter than Sushil(S).  $R > H$  But  $H < S$ .

Niza(N) is taller than Harry(Hy) but shorter than Hardik.

$N > Hy$  But  $N < H$

Sushil is shorter than Roshan.

$S < R$

Descending order of the heights is as

Roshan > Sushil > Hardik > Niza > Harry.

Therefore, the tallest person is Roshan

#### Instructions

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

### Question 171

#### DISAPPOINTMENT

- A OINTMENT
- B TENEMENT
- C POSITION
- D POINTER

**Answer:** D

#### Explanation:

From the given alternatives, all the words except POINTER can be formed completely using the letters of the word DISAPPOINTMENT completely because of the missing 'R' in DISAPPOINTMENT. hence the correct answer is option D.

### Question 172

#### DECOMPOSITION

- A ECONOMIST
- B POSITION
- C DOCTOR
- D COMPOSE

**Answer:** C

**Explanation:**

From the given alternatives, all the words except DOCTOR can be completely be formed by using the letters of he word DECOMPOSITION as there is no 'R' in DECOMPOSITION. therefore the correct answer is option C.

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**Question 173**

**INTELLIGENCE**

- A GENTLE
- B INCITE
- C CANCEL
- D NEGLECT

**Answer: C**

**Explanation:**

From the given alternatives , all the words can be completely formed by using the letters of the word INTELLIGENCE except CANCEL as it will require an extra 'C'. Therefore the correct answer is option C.

**Instructions**

For the following questions answer them individually

**Question 174**

**In the following question, the number of letters skipped in between adjacent letters in the series is successive even numbers. Which of the following series observes this rule ?**

- A ADGJM
- B BEJQZ
- C BDGKQ
- D FINUZ

**Answer: B**

**Explanation:**

The number of letters between the first and second letter of the term is 2 less than the number of letters between the second and third letter of the term.

Similarly the number of letters between the third and second letter of the term is 2 less than the number of letters between the fourth and third letter of the term.

The difference is always

Of the given options BEJQZ matches the given consitions.

B CD E FGHI J KLMNOP Q RSTUVWXY Z.

Hence Option B is the correct answer.

**Question 175**

**If  $\times$  stands for addition,  $<$  for subtraction,  $+$  stands for division,  $>$  stands for multiplication,  $-$  stands for equation,  $\div$  stands for greater than, and  $=$  stands for less than, state which of the following is true?**

- A  $5 > 8 + 4 = 10 < 4 \times 8$
- B  $3 \times 4 > 2 - 9 + 3 < 3$
- C  $5 \times 3 < 3 \div 8 + 4 \times 1$

D  $3 \times 2 < 4 \div 16 > 2 + 4$

Answer: A

**Explanation:**

If  $\times$  stands for addition,  $<$  for subtraction,  $+$  stands for division,  $>$  stands for multiplication,  $-$  stands for equation,  $\div$  stands for greater than, and  $=$  stands for less than, then option A:  $5 > 8 + 4 = 10 < 4 \times 8$  will be decoded as  $5 * 8 / 4 < 10 - 4 + 8$  implies that  $10 < 14$ . which is true. therefore the correct answer is option A.

## Daily Free SSC Practice Set

**Question 176**

In a question paper, there are 12 questions in all out of which only six are to be answered. Six questions have an alternative each. Each question has four parts. How many questions including parts are there in the question paper ?

- A 48
- B 72
- C 96
- D 24

Answer: B

**Explanation:**

Out of the 12 questions , 6 have alternatives and 6 don't.

Hence, no. of questions =  $(6 * 2) + 6 = 18$  .

Also each question ahs 4 parts.

Hence,  $18 * 4 = 72$

**Question 177**

If **MOBILE** is written as **ZAMSUM**, how **TUMOR** can be written in that code ?

- A HGYAD
- B GGXYA
- C IHZBE
- D BRAIN

Answer: B

**Explanation:**

Given : **MOBILE** is written as **ZAMSUM**

The pattern followed is :

M	O	B	I	L	E
(+13)	(+12)	(+11)	(+10)	(+9)	(+8)
Z	A	M	S	U	M

Similarly, for **TUMOR** :

T	U	M	O	R
(+13)	(+12)	(+11)	(+10)	(+9)
G	G	X	Y	A

=> Ans - (B)

**Question 178**

If  $55 + 66 = 33$  and  $22 + 99 = 33$ , what is  $44 + 88$  ?

- A 36
- B 38
- C 40
- D 33

**Answer: A**

**Explanation:**

Divide each term by 11.

$$\frac{55}{11} + \frac{66}{11} = 5 + 6 = 11. \text{ Multiply this with 3, we get 33.}$$

$$\text{So, } \frac{44}{11} + \frac{88}{11} = 4 + 8 = 12.$$

$$12 * 3 = 36.$$

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**Instructions**

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

**Question 179**

3917, 3526, ?, 2857

- A 3174
- B 3389
- C 2682
- D 3082

**Answer: A**

**Explanation:**

The difference between the numbers formed by the digits in thousand, hundred and tenth place is equal to the number formed by the digits in thousand and hundredth place.

$$391 - 352 = 39$$

Hence the first three digits of the third term must be 35 less than 352, which is 317.

The difference between the numbers formed last digit by the digits in thousand, hundred and tenth place is equal to the number formed by the digits in hundredth tens and units place of the preceding term will be the hundred, tens and units place of a term.

$$917 - 391 = 526$$

$$\text{Hence the units tens and hundreds place of third term} = 526 - 352 = 174$$

Hence the missing number is 3174.

Option A is the correct answer.

**Question 180**

16 49 64  
25 36 81  
9 13 ?

- A 22
- B 17
- C 14
- D 21

**Answer: B**

**Explanation:**

In the first column,  $\sqrt{16} + \sqrt{25} = 4 + 5 = 9$

and in the second column,  $\sqrt{49} + \sqrt{36} = 7 + 6 = 13$

Similarly,  $\sqrt{64} + \sqrt{81} = 8 + 9 = 17$

=> Ans - (B)

**Question 181**

3 4 6  
5 7 3  
1 2 7  
35 69 ?

A 94

B 84

C 42

D 82

**Answer: A**

**Explanation:**

The last number in each column is obtained by adding the squares of first three numbers in the column.

Eg :  $3^2 + 5^2 + 1^2 = 9 + 25 + 1 = 35$

and  $4^2 + 7^2 + 2^2 = 16 + 49 + 4 = 69$

Similarly,  $6^2 + 3^2 + 7^2 = 36 + 9 + 49 = 94$

=> Ans - (A)

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**Question 182**

5, 11, 24, 51, 106, ?

A 122

B 217

C 221

D 115

**Answer: B**

**Explanation:**

Each term is (n-1) more than the twice of previous term where n is the position of the term.

1st term n=1

2nd term n=2 and so on.

Sixth term must be 5 more than twice of 106.

The fifth term is 217.

Option B is the correct answer.



**Question 183**

19 18 34 32 44 41  
2 4 ?

- A 6
- B 9
- C 4
- D 3

**Answer:** A

**Explanation:**

The difference between two consecutive numbers is multiplied by 2.

$$19 - 18 = 1; 1 \times 2 = 2$$

$$34 - 32 = 2; 2 \times 2 = 4$$

Similarly,  $44 - 41 = 3; 3 \times 2 = 6$

=> Ans - (A)

**Question 184**

4 3 2  
36 2 100 7 ? 5

- A 49
- B 64
- C 81
- D 71

**Answer:** A

**Explanation:**

The number at the bottom left is obtained by squaring the sum of other two.

$$(4 + 2)^2 = (6)^2 = 36$$

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

Similarly,  $(5 + 2)^2 = (7)^2 = 49$

=> Ans - (A)

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**Instructions**

For the following questions answer them individually

**Question 185**

Pipe A can fill a tank completely in 5 hours. However, on account of a leak at the tank, it takes 3 more hours to fill the tank. How long will the leak take to empty the full tank when pipe A is closed/shut ?

- A 7.5 hours
- B 14 hours 40 minutes

C 12 hours 20 minutes

D 13 hours 20 minutes

**Answer: D**

**Explanation:**

Pipe A takes 5 hours to fill the tank. Therefore, it fills one-fifth the tank in an hour or 20% of the tank in an hour. When there is a leak it takes 8 hours more for the tank to fill i.e. one-eighth or 12.5% of tank is filled in 1 hour. On account of the leak,  $20\% - 12.5\% = 7.5\%$  water gets wasted every hour.

$$x = \frac{1}{5} - \frac{1}{8}$$

$$x = \frac{40}{3} \text{ hours.}$$

Hence, it takes 13 hours 20 minutes to empty the tank.

**Question 186**

A and B both are walking away from point 'X'. A walked 3 m and B walked 4 m from it, then A walked 4 m north of X and B walked 5 m south of A. What is the distance between them now ?

A 9.5 m

B 9 m

C 16 m

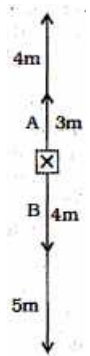
D 11.40 m

**Answer: C**

**Explanation:**

Let A and B both started from point X, then A travelled 3 m north and B travelled 4 m south. Again A walked 4 m north and B 5 m towards south.

Thus, total distance between them =  $4 + 3 + 4 + 5 = 16$  m



=> Ans - (C)

**Instructions**

In each of the following questions, one/two statements are given followed by two/three conclusions I, II and III. 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 187**

**Statement :**

(I) All cities are towns.

(II) Some cities are villages.

**Conclusions :**

(I) All villages are towns.

(II) No village is a town.

(III) Some villages are towns.

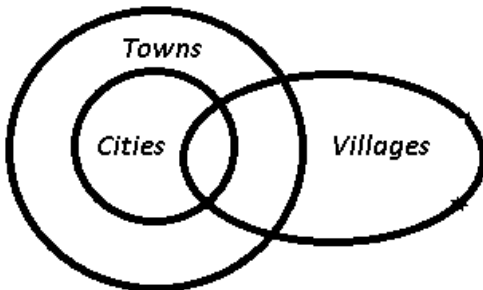
A Only conclusion (III) follows

- B Only conclusion a: follows
- C Only conclusion (II) follows
- D None of these

**Answer: A**

**Explanation:**

The venn diagram for above statements is :



Conclusions :

- (I) All villages are towns = false
- (II) No village is a town = false
- (III) Some villages are towns = true

Thus, only conclusion (III) follows.

=> Ans - (A)

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**Question 188**

**Statement : Sun is the source of light.**

**Conclusions :**

- (I) Moon is not the source of light.
- (II) Light has only one source.

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

**Answer: D**

**Explanation:**

The statement indicates that Sun is the source of light, it does not imply that light has only one source. Also, there is no information about the moon, thus neither conclusion (I) nor (II) follows.

=> Ans - (D)

**Instructions**

In each of the following questions, which answer figure will complete the question figure?

**Question 189**

**Question Figure**

- A 1
- B 2

C 3

D 4

Answer: D

Question 190

Question Figure

A 1

B 2

C 3

D 4

Answer: B

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Question 191

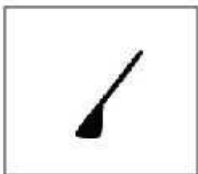
Question Figure :



A



B



C



D



Answer: A

Explanation:

Clearly, from the question, we need a single up-side down triangle.  
hence, Option A.

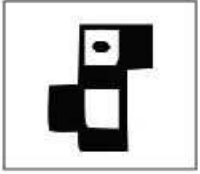
**Instructions**

For the following questions answer them individually

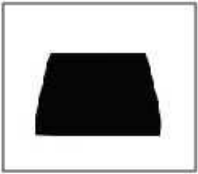
**Question 192**

Which one of the following box can be created by folding the given key design?

Question Figure :



A



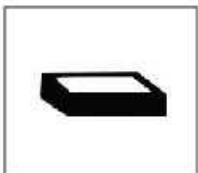
B



C



D



Answer: D

**Explanation:**

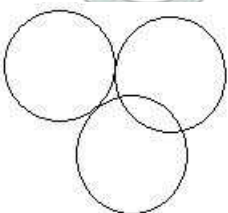
From the given questions, it can be found that the white side and Dot side are on the opposite faces. So they must not be visible at a time.

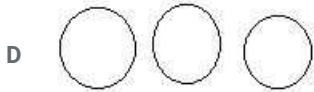
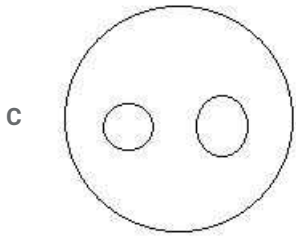
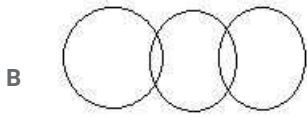
Hence, Option D.

**Question 193**

Which figure represent the relationship among Sun, Moon, Molecule ?

A





Answer: C

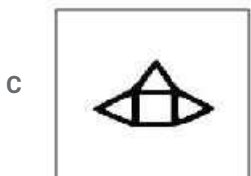
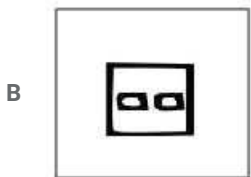
**Explanation:**

Sun and moon are different. But everything is made up of molecules.  
Hence, Option C

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**Question 194**

Choose from the following diagrams a), b), c) and d) the one that illustrates the relationship among three given classes :  
North America, United States of America, New York



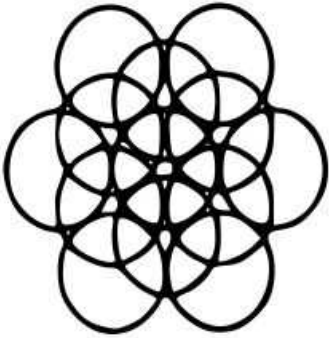
Answer: A

**Explanation:**

North America contains United States of America which contains New York.  
Hence, Option A

**Question 195**

How many circles are there in the following figure ?



- A 12
- B 13
- C 14
- D 11

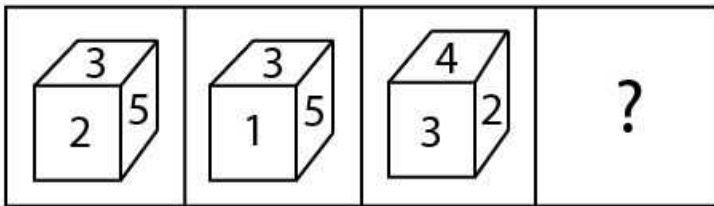
**Answer: B**

**Explanation:**

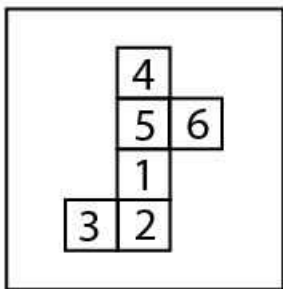
1 inner most circle .  
6 circles in the next layer .  
6 circles in outer layer.  
Hence , 13.

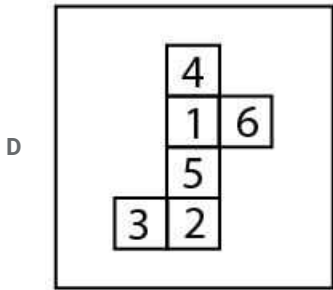
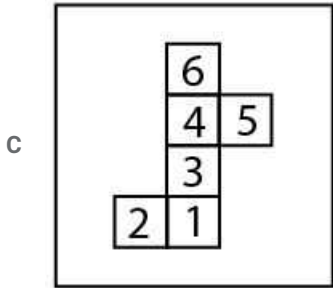
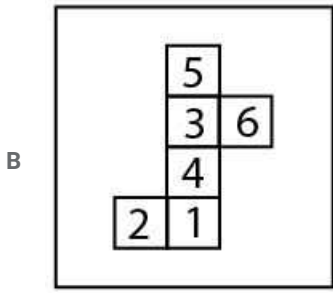
**Question 196**

Three views of the same cube are given. All the faces of the cube are numbered from 1 to 6. Select one figure which will result when the cube is unfolded.



A





Answer: D

**Explanation:**

Clearly , 2,3,5 are adjacent to each other , 1,5,3 are adjacent to each other .  
Hence, Option D .

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**Question 197**

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 matrix given below. The columns and rows of Matrix are numbered from 0 to 6. A letter from the matrix can be represented first by its row and next by its column, e.g., 'A' can be represented by 42, 62, etc. and 'P' can be represented by 15, 43, etc. Similarly, you have to identify the set for the word 'CALM'.

0	1	2	3	4	5	6
1	H	R	E	I	P	S
2	S	G	N	D	Z	I
3	B	U	F	T	K	L
4	V	A	P	C	Y	A
5	M	W	C	O	X	N
6	B	A	E	J	L	O

A 1

B 2

C 3



D 4

Answer: D

**Explanation:**

C can be 53 or 44

A can be 42 or 62 or 46

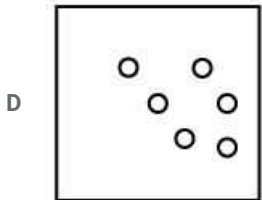
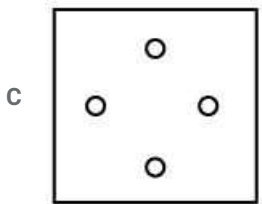
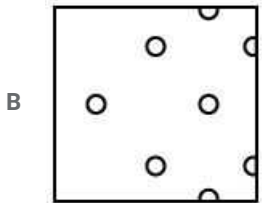
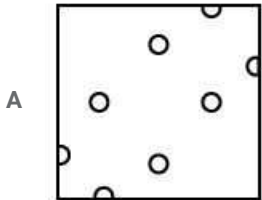
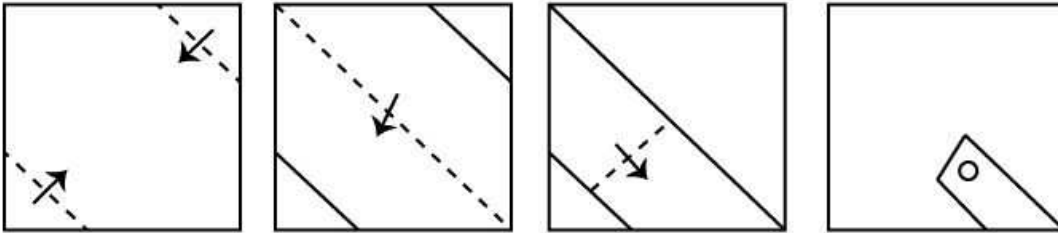
L can be 65

M can be 51

Hence, can be verified from options

**Question 198**

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



Answer: C

**Explanation:**

From 3rd step, it is clear that 2 holes are made on same side of the diagonal.

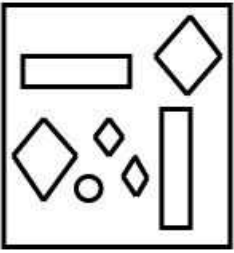
From 2nd step, it is clear that another 2 holes are made on the other side of diagonal.

Since, the hole is not close to any corner, step 1 is not useful.

Hence, Option C.

Question 199

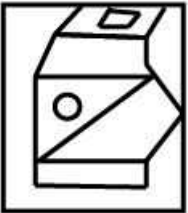
Which answer figure includes all the components given in the question figure ?



A



B



C



D



Answer: D

**Explanation:**

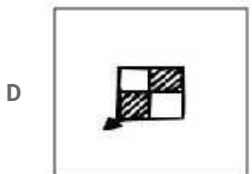
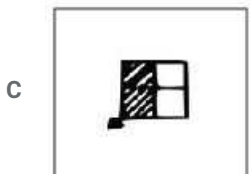
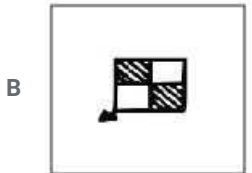
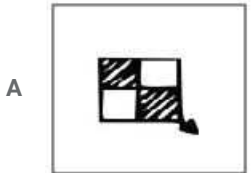
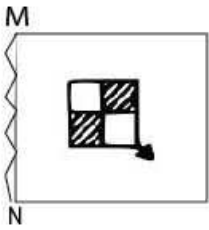
Question contains only 2 rectangles, 2 larger rhombuses, 2 smaller rhombuses and a circle.  
Only Option D contains these.

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Question 200

If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure :

Figure :



Answer: B

Explanation:

To get mirror image, flip the image along MN axis.

We get Option B.

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