

# SSC CHSI 19 Jan 2017 Morning Shift

## Reasoning

### Instructions

For the following questions answer them individually

### Question 1

Select the related word/letters/number from the given alternatives.

Prompt : Gradual :: Reverse : ?

- A Decrease
- B Forward
- C Backward
- D Inclination

**Answer:** B

### Explanation:

Prompt and gradual are antonyms, similarly opposite of reverse is *forward*.

=> Ans - (B)

### Question 2

Select the related word/letters/number from the given alternatives.

KOT : PJO :: FIR : ?

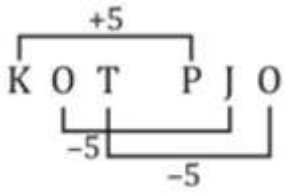
- A TMN
- B NKM
- C KDM
- D MNJ

**Answer:** C

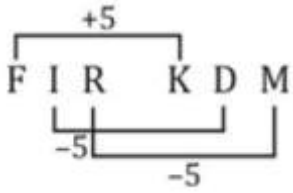
### Explanation:

Expression = KOT : PJO :: FIR : ?

The pattern followed is :



Similarly for FIR :



=> Ans - (C)

### Question 3

Select the related word/letters/number from the given alternatives.

QRU : RQF :: GIC : ?

- A GHJ
- B HGH
- C HHX
- D IGV

**Answer: C**

### Explanation:

Expression = QRU : RQF :: GIC : ?

The following pattern is followed and U and F are corresponding opposite letters.



Similarly, for GIC : HHX

=> Ans - (C)

### Question 4

Select the related word/letters/number from the given alternatives.

1331 : 11 :: 13824 : ?

- A 20

B 23

C 18

D 24

**Answer:** D

**Explanation:**

Expression =  $1331 : 11 :: 13824 : ?$

The pattern followed is =  $x^3 : x$

Eg :-  $11^3 : 11 = 1331 : 11$

Similarly,  $\sqrt[3]{13824} = 24$

=> Ans - (D)

#### Question 5

Select the odd word/letters/number/number pair from the given alternatives.

A Anger

B Enquiry

C Investigation

D Probe

**Answer:** A

**Explanation:**

Except Anger other three are synonyms of each other, hence it is the odd one out.

=> Ans - (A)

#### Question 6

Select the odd word/letters/number/number pair from the given alternatives.

A ZVR

B MIE

C TXP

D RNJ

**Answer:** C

**Explanation:**

(A) : Z (-4 letters) = V (-4 letters) = R

(B) : M (-4 letters) = I (-4 letters) = E

(C) : T (+4 letters) = X (-8 letters) = P

(D) : R (-4 letters) = N (-4 letters) = J

=> Ans - (C)

**Question 7**

Select the odd word/letters/number/number pair from the given alternatives.

A 1/2

B 1/3

C 1/4

D 1/5

**Answer: B**

**Explanation:**

Result of 1/3 will be a non-terminating decimal, hence it is the odd one out.

=> Ans - (B)

**Question 8**

Select the odd word/letters/number/number pair from the given alternatives.

A 897

B 969

C 888

D 432

**Answer: D**

**Explanation:**

Except for 432, the sum of digits of other number is 24, hence 432 is the odd one out.

=> Ans - (D)

### Question 9

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. Qutbuddin Aibak, Iltutmish, ?, Ghiyasuddin Balban

- A Razia Sultana
- B Alauddin Khilji
- C Firoz Shah Tughlaq
- D Bahlol Lodi

**Answer:** A

### Explanation:

Sequence according to timeline of the slave dynasty is given.

= Qutbuddin Aibak, Iltutmish, Razia Sultana , Ghiyasuddin Balban

=> Ans - (A)

### Question 10

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

AB,EFG,KLMN,?

- A TSUVW
- B STVUW
- C STUVW
- D RSTUV

**Answer:** C

### Explanation:

Expression : AB,EFG,KLMN,?

The pattern between the first letter of next term and last letter of previous term is :

A B      E F G      K L M N      S T U V W  
    └───┬───┘      └───┬───┘      └───┬───┘  
      +3            +4            +5

Thus, missing term = **STUVW**

=> Ans - (C)

### Question 11

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

AZ, BY, CX, ?

A KN

B EV

C DW

D ED

**Answer: C**

**Explanation:**

$A + 1 = B$ ;  $B + 1 = C$ ;  $C + 1 = D$

$Z - 1 = Y$ ;  $Y - 1 = X$ ;  $X - 1 = W$

So, DW i.e. option C must be the answer.

### Question 12

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

8,21,60,177,?

A 425

B 528

C 525

D 575

**Answer: B**

**Explanation:**

The pattern followed is :

$$8 \times 3 - 3 = 21$$

$$21 \times 3 - 3 = 60$$

$$60 \times 3 - 3 = 177$$

$$177 \times 3 - 3 = \mathbf{528}$$

=> Ans - (B)

### Question 13

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

**Statements:**

(I) Out of 100 people 87 do regular exercising and 35 restrain from unnecessary diet.

(II) These 100 people belong to metro city region.

**Conclusion:**

(I) 35 % people do exercising and dieting.

(II) In metro city region people are more health conscious.

- A Only conclusion II follows
- B Conclusion I and II both follow
- C Neither I nor II follow
- D Only conclusion I follows

**Answer: C**

### Question 14

Rahul's age is three times the age of Sumit. If Rahul is 15 years old presently, determine the age (in years) of Sumit after 12 years.

- A 16
- B 15
- C 10
- D 17

**Answer: D**

**Explanation:**

Rahul's present age = 15 years

Also, Rahul's age is three times the age of Sumit,  $\Rightarrow$  Sumit's present age =  $\frac{15}{3} = 5$  years

$\therefore$  Age (in years) of Sumit after 12 years =  $12 + 5 = 17$  years

$\Rightarrow$  Ans - (D)

### Question 15

Arrange the given words in the sequence in which they occur in the dictionary.

i. Preview

ii. Preventive

iii. Prefer

iv. Preformation

A iii,ii,i,iv

B iv,iii,i,ii

C iii,iv,ii,i

D iii,i,ii,iv

**Answer: C**

#### **Explanation:**

As per the order of dictionary :

= Prefer -> Preformation -> Preventive -> Preview

≡ iii,iv,ii,i

=> Ans - (C)

### Question 16

In a certain code language, "BRING" is written as "25698" and "JAIL" is written as "4367". How is "BRINJAL" written in that code language?

A 2566437

B 2569437

C 2569347

D 2659437

**Answer: B**

#### **Explanation:**

The codes for each letter is given :

B -> 2

R -> 5

I -> 6

N -> 9

J -> 4

A -> 3

L -> 7



Thus, BRINJAL : 2569437

=> Ans - (B)

### Question 17

In the following question, select the missing number from the give series

5	12	18
6	11	12
61	265	?

A 465

B 470

C 468

D 430

**Answer: C**

#### Explanation:

In each column, the number at the end is obtained by adding the squares of other numbers.

$$\text{Eg :- } 5^2 + 6^2 = 25 + 36 = 61$$

$$12^2 + 11^2 = 144 + 121 = 265$$

$$\text{Similarly, } 18^2 + 12^2 = 324 + 144 = 468$$

=> Ans - (C)

### Question 18

If "A" means "subtraction", "B" means "division", "C" means "addition" and "D" means "multiplication", then  
305 B 5 A 28 C 43 D 12 = ?

A 569

B 549

C 560

D 530

**Answer: B**

#### Explanation:

Expression : 305 B 5 A 28 C 43 D 12 = ?

$$\equiv 305 \div 5 - 28 + 43 \times 12$$

$$= \left(\frac{305}{5}\right) + (-28) + (43 \times 12)$$

$$= 61 - 28 + 516 = 549$$

=> Ans - (B)

### Question 19

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

AB\_AB\_AA\_BB\_

A ABBA

B BBBB

C ABBB

D BBBA

**Answer: A**

### Explanation:

The pattern followed is that the term 'ABA' is repeated with increase in B after each term.

= ABA ABBA ABBBA

=> Ans - (A)

### Question 20

Ram is facing towards the south. He turns to his left and moves 40 km, and then turns to his right and moves 50 km more. Finally, he turns to his left again and moves 60 km. Which direction is he facing now?

A East

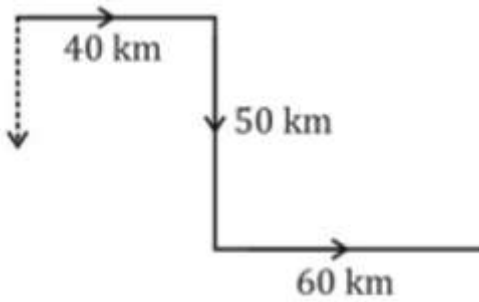
B West

C North

D South

**Answer: A**

### Explanation:



Ram is facing towards the south. He turns to his left and moves towards east for 40 km, and then turns to his right and moves 50 km southwards. Finally, he turns to his left again and moves 60 km.

Thus, he is facing east direction in the end.

=> Ans - (A)

### Question 21

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 shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, V can be represented by 21, 40, etc., and U can be represented by 96, 67, etc. Similarly, you have to identify the set for the word CARRY.

Matrix - I

	0	1	2	3	4
0	R	A	R	Y	A
1	A	C	M	Q	H
2	U	Y	L	C	P
3	A	H	A	P	C
4	Y	A	C	Y	I

Matrix - II

	5	6	7	8	9
5	V	M	R	G	M
6	A	R	U	D	U
7	R	M	A	C	A
8	C	X	C	A	Y
9	M	U	Y	S	A

A 42,65,57,13,86

B 11, 99,12,43,68

C 23,04,66,95,89

D 34,79,00,66,97

Answer: D

Explanation:

(A) : 42,65,57,13,86 = CARQX

(B) : 11, 99,12,43,68 = CAMYD

(C) : 23,04,66,95,89 = CARMY

(D) : 34,79,00,66,97 = **CARRY**

=> Ans - (D)

### Question 22

A man says to a lady, "Your father is the father-in-law of my father's only child." How is the lady related to the man?

A Sisterinlaw

B Granddaughter

C Wife

D Daughter

**Answer: C**

### Explanation:

The man's father's only child = the man himself

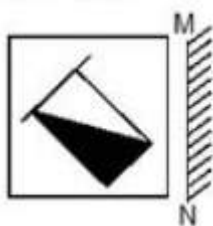
Now, the lady's father is the man's father-in-law, => they are married.

Thus, the lady is the man's wife.

=> Ans - (C)

### Question 23

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



A



B

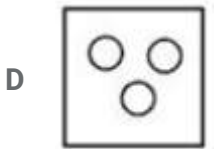
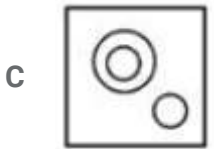
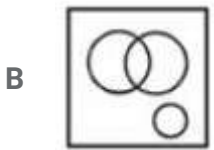
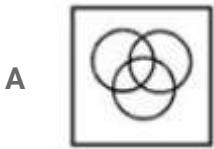




Answer: A

Question 24

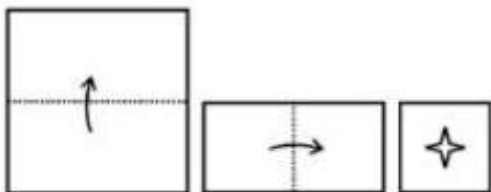
Identify the diagram that best represents the relationship among the given classes.  
Vegetable, Park, Carrot



Answer: C

Question 25

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





Answer: A

## General Awareness

### Instructions

For the following questions answer them individually

### Question 26

The command that merges the contents of one file to another is

- A APPEND
- B RENAME
- C RESTORE
- D ADD

Answer: A

### Question 27

Dishwasher was invented by .....

- A John Barber
- B Sir Henry Cole
- C Josephine Cochrane
- D Bartolomeo Cristofori

**Answer: C**

**Question 28**

**Prothrombin, responsible for clotting of blood is released by.....**

- A Small Intestine
- B Blood Platelets
- C Large Intestine
- D Heart

**Answer: B**

**Question 29**

**Acacia arabica is the scientific name of**

- A Neem
- B Teak
- C Babhul
- D Pomegranate

**Answer: C**

**Question 30**

**Cannis Vulpes is the scientific name of**

- A Dog
- B Wolf

**C** Fox

**D** Hyena

**Answer: C**

**Question 31**

**What is the pH of water?**

**A** 7

**B** 5

**C** 3

**D** 1

**Answer: A**

**Question 32**

**Solid carbon dioxide is known as .....**

**A** Hypo

**B** Borax

**C** Alum

**D** Dry ice

**Answer: D**

**Question 33**

**Oil paint was first used for Buddhist paintings by Indian and Chinese painters in western .....sometime between the fifth and tenth centuries.**

**A** Iraq

**B** Afghanistan

**C** Pakistan

**D** India

**Answer: B**



**Question 34**

**Flamingo festival is celebrated in which state?**

- A Karnataka
- B Kerala
- C Andhra Pradesh
- D Maharashtra

**Answer: C**

**Question 35**

**If for the year a country's GDP was \$990 million, consumer spending was \$630 million, investment by businesses was \$110 million, exports were \$55 million and imports were \$45 million, calculate government spending?**

- A \$260 million
- B \$240 million
- C \$480 million
- D \$460 million

**Answer: B**

**Question 36**

**In economic equilibrium .....**

- A supply is equal to the demand.
- B the surplus is larger than the shortage.
- C elasticity of demand equals elasticity of supply
- D price elasticity of demand is unity

**Answer: A**

**Question 37**

**Beryl is an ore/mineral of**

- A Nickel
- B Beryllium
- C Lead
- D Tin

**Answer: B**

### **Question 38**

**What is the Greenhouse Effect?**

- A The fall in population of plants due to human activity
- B It is the warming of earth's surface due to its atmosphere
- C The polluting effect of burning fossil fuels
- D The heating of the atmosphere due to depletion of the ozone layer

**Answer: B**

### **Question 39**

**The longest railway platform in India**

- A Amritsar
- B Gorakhpur
- C Kathgodam
- D Kanpur

**Answer: B**

### **Question 40**

**In terms of size, Saturn ranks no. in our Solar System.**

- A 1
- B 2

**C** 3

**D** 4

**Answer: B**

**Question 41**

**Which of the following continents has the smallest land area?**

**A** Antarctica

**B** Europe

**C** North America

**D** South America

**Answer: B**

**Question 42**

**Who built Jodhpur Fort?**

**A** Guru Ramdas

**B** Shah Jahan

**C** Rao Jodhaji

**D** Mahatma Gandhi

**Answer: C**

**Question 43**

**Battle of Panipat was fought in the year .....**

**A** 1764

**B** 1757

**C** 1526

**D** 1857

**Answer: C**

**Question 44**

**Name the first Indian to get Nobel prize in literature.**

- A Rabindranath Tagore
- B CV Raman
- C Lal Bahadur Shastri
- D Amartya Sen

**Answer: A**

**Question 45**

**Atmospheric pressure is measured by .....**

- A Barometer
- B Hexameter
- C Nanometer
- D Glaxometer

**Answer: A**

**Question 46**

**Instrument for measuring rainfall is called**

- A Lucimeter
- B Galactometer
- C Hyetometer
- D Hygrometer

**Answer: C**

**Question 47**

**What is the total number of members in Rajya Sabha from States and Union Territories?**

- A 218

**B** 228

**C** 238

**D** 248

**Answer: C**

**Question 48**

**The Look East Policy in India was started by which of the following Prime Ministers?**

**A** Rajiv Gandhi

**B** Atal Bihari Vajpayee

**C** P.V. Narasimha Rao

**D** Manmohan Singh

**Answer: C**

**Question 49**

**Who won the Gold Medal in 400m sprint in 2016 Summer Olympics?**

**A** Usain Bolt

**B** Justin Gatlin

**C** Andre De Grasse

**D** Wayde van Niekerk

**Answer: D**

**Question 50**

**Who wrote the book "The God of Small Things"?**

**A** Arundhati Roy

**B** Anita Desai

**C** Amartya Sen

**D** Arun Shourie

**Answer: A**

## English

### Instructions

For the following questions answer them individually

### Question 51

**In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.**

**Ignorance is bliss**

- A Lack of knowledge is a curse
- B Sometimes it is better for you if you do not know all the facts
- C Fools believe they know more than the wise
- D To be truly happy one should ignore everything else

**Answer: B**

### Question 52

**Select the word with the correct spelling.**

- A fidellity
- B befallen
- C probable
- D salwager

**Answer: C**

### Question 53

**Improve the bracketed part of the sentence.**

**Varun goes (for cinema) every Friday.**

- A to cinema

- B to the cinema
- C in cinema
- D no improvement

**Answer: B**

#### **Question 54**

**In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.**

**Have a blast**

- A A party with very loud music
- B To have peace amidst noise
- C To have a lot of fun
- D An explosion of happiness

**Answer: C**

#### **Question 55**

**In the following question, a sentence has been given in Active/Passive voice. Out of four alternatives suggested, select the one, which best expresses the same sentence in Passive/Active voice.**

**It is impossible to do this job.**

- A This job is impossible to be done.
- B This job cannot be done with.
- C No one can do this job.
- D This job cannot be done by anyone.

**Answer: A**

#### **Question 56**

**Select the word with the correct spelling.**

- A essoteric
- B manerly

C sawsages

D dissolve

**Answer: D**

**Question 57**

In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

This is the time that you need to .....all your strength.

A muster

B build

C capture

D show

**Answer: A**

**Question 58**

In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

There is renewed sense(A)/of urgency in(B)/completing the project.(C)/No error(D)

A There is renewed sense

B of urgency in

C completing the project.

D No error

**Answer: A**

**Question 59**

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.

to allay the sorrow or grief

A to lament

B to console



C distress

D solace

Answer: B

**Question 60**

In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.  
Your motivational speech(A)/has had the tremendous(B)/effect on my students.(C)/No error(D)

A Your motivational speech

B has had the tremendous

C effect on my students.

D No error

Answer: B

**Question 61**

Rearrange the parts of the sentence in correct order.

A significant number

Pin the rural nonfarm sector

Qto be created

Rof these jobs will have

A QRP

B RQP

C PRQ

D PQR

Answer: B

**Question 62**

In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

The child looked up at her teacher, obviously afraid that she would further .....her.

A revere

- B extol
- C laud
- D chastise

**Answer: D**

### Question 63

In the following question, a sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one, which best express the same sentence in Indirect/Direct speech.

Jyoti said to her sister, "The RBI is India's central bank".

- A Jyoti told her sister the RBI was India's central bank.
- B Jyoti told her sister that the RBI was India's central bank.
- C Jyoti told her sister that the RBI is India's central bank.
- D Jyoti told her sister the RBI is India's central bank.

**Answer: C**

### Question 64

Select the antonym of escort

- A entourage
- B cavalier
- C foe
- D convoy

**Answer: C**

### Question 65

Select the synonym of to permeate

- A to desiccate
- B to imbue
- C torrid

D stale

**Answer: B**

### Question 66

Select the antonym of demon

A spectre

B angel

C shadow

D zombie

**Answer: B**

### Question 67

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.  
to teach a person to accept a set of beliefs uncritically

A to drill

B to instill

C to indoctrinate

D to convince

**Answer: C**

### Question 68

Improve the bracketed part of the sentence  
Mr. Shah (is having) two houses.

A has

B got

C has been having

D no improvement

**Answer: A**

**Question 69**

**Select the synonym of swine**

- A hog
- B simple
- C immaculate
- D shine

**Answer: A**

**Question 70**

**Rearrange the parts of the sentence in correct order**

**By doing so, it**

**Pbrought it closer**

**Qto cultural and social life**

**Rhas redefined politics and**

- A RPQ
- B RQP
- C PQR
- D QPR

**Answer: A**

**Instructions**

In the following passage, some of the words have been left out. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

Antiapartheid activist Desmond Tutu is even more hardheaded when he says, "In almost .....(1) language, the most difficult words are 'I am sorry'." Mr. Tutu adds that .....(2) reconciliations can only lead to spurious healing. ....(3) him forgiveness is a wager, an ethical wager on the future of .....(4) relationship. This is why the few events of apology which stand up to .....(5) scrutiny deserve to be treasured.

**Question 71**

**(1)**

- A each

**B** all

**C** any

**D** every

**Answer: D**

**Question 72**

(2)

**A** artificial

**B** phony

**C** spurious

**D** bogus

**Answer: C**

**Question 73**

(3)

**A** For

**B** To

**C** By

**D** About

**Answer: A**

**Question 74**

(4)

**A** the

**B** a

**C** them

**D** him

Answer: B

Question 75

(5)

- A critical
- B sarcastic
- C cynical
- D satirical

Answer: A

## Mathematics

**Instructions**

For the following questions answer them individually

Question 76

If  $(\operatorname{cosec}A - 1)/(\operatorname{cosec}A + 1) = x$ , then the value of  $x$  is

- A  $(\sin A/(1 + \cos A))^2$
- B  $\cos A/(1 + \sin A)$
- C  $(\cos A/(1 + \sin A))^2$
- D  $\sin A/(1 + \cos A)$

Answer: C

**Explanation:**

$$\text{Expression : } \frac{\operatorname{cosec}A - 1}{\operatorname{cosec}A + 1}$$

$$= \left( \frac{1}{\sin A} - 1 \right) \div \left( \frac{1}{\sin A} + 1 \right)$$

$$= \left( \frac{1 - \sin A}{\sin A} \right) \div \left( \frac{1 + \sin A}{\sin A} \right)$$

$$= \left( \frac{1 - \sin A}{\sin A} \right) \times \left( \frac{\sin A}{1 + \sin A} \right)$$

$$= \frac{1 - \sin A}{1 + \sin A}$$

Multiplying both numerator and denominator by  $(1 + \sin A)$

$$= \frac{1 - \sin A}{1 + \sin A} \times \frac{(1 + \sin A)}{(1 + \sin A)}$$

$$\begin{aligned} &= \frac{1 - \sin^2 A}{(1 + \sin A)^2} = \frac{\cos^2 A}{(1 + \sin A)^2} \\ &= \left( \frac{\cos A}{1 + \sin A} \right)^2 \\ &\Rightarrow \text{Ans - (C)} \end{aligned}$$

### Question 77

Product of 6ab, 3b and 4a is

- A  $72a^2b^2$
- B  $144ab$
- C  $72ab$
- D  $144a^2b^2$

**Answer:** A

#### Explanation:

Product of : 6ab, 3b and 4a

$$\begin{aligned} &= (6 \times 3 \times 4) \times (ab \times b \times a) \\ &= 72a^2b^2 \end{aligned}$$

$\Rightarrow$  Ans - (A)

### Question 78

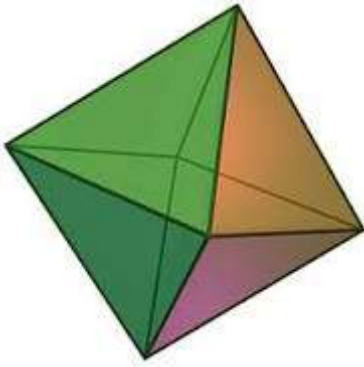
An octahedron has 6 vertices. How many edges does it have?

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

**Answer:** B

#### Explanation:

Octahedron :



Euler's formula :  $V + F - E = 2$  where V is number of vertices , F is number of faces and E is number of edges.

Octahedron has 6 vertices and 8 faces.

$$\Rightarrow E = V + F - 2 = 6 + 8 - 2$$

$$\Rightarrow E = 14 - 2 = 12$$

$\Rightarrow$  Ans - (B)

### Question 79

**By increasing the price of entry ticket to a fair in the ratio 5:7, the number of visitors to the fair has decreased in the ratio 11:9. In what ratio has the total collection increased or decreased?**

- A increased in the ratio 55:63
- B decreased in the ratio 63:55
- C increased in the ratio 45:77
- D decreased in the ratio 77:45

**Answer: A**

### Explanation:

Let cost of original ticket = Rs 5 and and number of visitors = 110

$$\Rightarrow \text{Original revenue} = 5 \times 110 = \text{Rs } 550$$

After increase in cost of ticket

New cost of ticket = Rs 7 and number of visitors = 90

$$\Rightarrow \text{New Revenue} = 7 \times 90 = \text{Rs } 630$$

Since, new revenue is greater than original revenue, thus total collection has increased.

$$\therefore \text{Increase of total collection ratio} = \frac{550}{630} = 55 : 63$$

$\Rightarrow$  Ans - (A)



**Question 80**

The largest 5 digit number exactly divisible by 84 is:

A 99960

B 99955

C 99952

D 99956

**Answer: A**

**Explanation:**

Largest 5 digit number = 99999

If 99999 is divided by 84,  $\Rightarrow 99999 = 84 \times 1190 + 39$

Quotient is 1190 and remainder is 39

Thus, largest 5 digit number which is divisible by 84 =  $99999 - 39$

= 99960

$\Rightarrow$  Ans - (A)

**Question 81**

If  $3x + 2 \geq x - 1$  and  $2x - 4 \leq 2 - x/3$ ; then  $x$  can take which of the following values?

A -2

B 3

C 5

D 1

**Answer: D**

**Explanation:**

Expression 1 :  $3x + 2 \geq x - 1$

$\Rightarrow 3x - x \geq -1 - 2$

$\Rightarrow 2x \geq -3$

$\Rightarrow x \geq \frac{-3}{2}$  -----(i)

Expression 2 :  $2x - 4 \leq 2 - x/3$

$\Rightarrow 2x + \frac{x}{3} \leq 2 + 4$

$\Rightarrow \frac{7x}{3} \leq 6$

$\Rightarrow x \leq \frac{18}{7}$  -----(ii)

Combining inequalities (i) and (ii), we get :  $\frac{-3}{2} \leq x \leq \frac{18}{7}$

The only value that  $x$  can take among the options = 1

=> Ans - (D)

### Question 82

What is the length of the side of a regular hexagon, if its area is  $54\sqrt{3}$  sq cm?

A 12 cm

B 9 cm

C 6 cm

D 15 cm

Answer: C

#### Explanation:

Let side of regular hexagon =  $a$  cm

Area of regular hexagon =  $\frac{3\sqrt{3}}{2}a^2$

$$\Rightarrow \frac{3\sqrt{3}}{2}a^2 = 54\sqrt{3}$$

$$\Rightarrow a^2 = 54 \times \frac{2}{3} = 36$$

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

=> Ans - (C)

### Question 83

If  $\cot \pi/3 - \tan \pi/4 = x$ , then the value of  $x$  is

A  $\sqrt{3}+2$

B  $(1-\sqrt{3})/\sqrt{3}$

C  $(1-\sqrt{2})/\sqrt{2}$

D  $(\sqrt{3}+2)/2\sqrt{3}$

Answer: B

#### Explanation:

Expression :  $\cot \pi/3 - \tan \pi/4 = x$

$$= \cot(60) - \tan(45)$$

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

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

=> Ans - (B)

#### Question 84

The effective annual rate of interest corresponding to a nominal rate of 19% per annum payable halfyearly is:

- A 38 percent
- B 19.9 percent
- C 39.81 percent
- D 19 percent

Answer: B

#### Explanation:

Let sum be = Rs.  $100x$

Rate of interest = 19% under compound interest half yearly

$$\text{Amount after 1 year} = P \left(1 + \frac{R}{2 \times 100}\right)^{2 \times T}$$

$$= 100x \left(1 + \frac{19}{200}\right)^{2 \times 1}$$

$$= 100x \left(\frac{219}{200}\right)^2 = \frac{219 \times 219 \times x}{400}$$

$$= \text{Rs. } 119.9x$$

$$\Rightarrow \text{Compound Interest} = \text{Rs. } (119.9x - 100x) = \text{Rs. } 19.9x$$

$$\therefore \text{Effective rate of interest} = \frac{19.9x}{100x} \times 100$$

$$= 19.9\%$$

=> Ans - (B)

#### Question 85

In the first 38 overs of a cricket match, the run rate was 4.5 runs/over. Calculate the required run rate in the remaining 12 overs to reach the target of 288 runs?

- A 10.35
- B 10.95
- C 9.75
- D 9.15

Answer: C

**Explanation:**

Run rate in 38 overs = 4.5 runs/over

$$\Rightarrow \text{Runs scored in 38 overs} = 38 \times 4.5 = 171$$

Runs needed to score in 12 overs =  $288 - 171 = 117$

$$\Rightarrow \text{Run rate required} = \frac{117}{12} = 9.75$$

$\Rightarrow$  Ans - (C)

**Question 86**

The sum of the ages of husband and wife at present is 56. Ten years ago the product of their ages was 320. What is the age of the husband and the wife?

A 28, 28

B 32, 24

C 30, 26

D 29, 27

Answer: C

**Explanation:**

Let husband's age =  $x$  years

$$\Rightarrow \text{Wife's age} = (56 - x) \text{ years}$$

$$\text{According to ques, } (x - 10)(56 - x - 10) = 320$$

$$\Rightarrow (x - 10)(46 - x) = 320$$

$$\Rightarrow 46x - x^2 - 460 + 10x = 320$$

$$\Rightarrow x^2 - 56x + 780 = 0$$

$$\Rightarrow x^2 - 30x - 26x + 780 = 0$$

$$\Rightarrow x(x - 30) - 26(x - 30) = 0$$

$$\Rightarrow (x - 30)(x - 26) = 0$$

$$\Rightarrow x = 30, 26$$

$\therefore$  Ages of the husband and the wife = 30 and 26 years

**Question 87**

If 27% of an electricity bill is deducted, Rs 1825 is still to be paid. How much was the bill?

A Rs 1437

**B** Rs 2536

**C** Rs 2500

**D** Rs 1473

**Answer: C**

**Explanation:**

Let the original bill amount =  $Rs.100x$

If 27% of an electricity bill is deducted, bill left =  $\frac{100-27}{100} \times 100x = 73x$

According to ques,  $\Rightarrow 73x = 1825$

$$\Rightarrow x = \frac{1825}{73} = 25$$

$\therefore$  Original bill amount =  $100 \times 25 = Rs.2500$

$\Rightarrow$  Ans - (C)

**Question 88**

**If  $\sec A = x$ , then the value of  $x$  is**

**A**  $\sqrt{1-\cot^2 A}$

**B**  $\sqrt{1-\tan^2 A}$

**C**  $\sqrt{1 + \cot^2 A}$

**D**  $\sqrt{1 + \tan^2 A}$

**Answer: D**

**Explanation:**

Expression :  $\sec A = x$

$$\therefore \sec^2 A - \tan^2 A = 1$$

$$\Rightarrow \sec^2 A = 1 + \tan^2 A$$

$$\Rightarrow \sec A = \sqrt{1 + \tan^2 A}$$

$\Rightarrow$  Ans - (D)

**Question 89**

**The costs of daily ticket of local train is Rs 130 and Monthly Pass costs Rs 3091.40. If I buy the Monthly Pass and travel for 29 days in a month than I save (in percentage)?**

**A** 16 percent

- B 18 percent
- C 15 percent
- D 14 percent

**Answer: B**

**Explanation:**

Train ticket cost for 1 day = Rs. 130

=> Cost for 29 days =  $29 \times 130 = \text{Rs. } 3770$

Cost of monthly pass = Rs. 3091.40

=> Money saved =  $3770 - 3091.40 = \text{Rs } 678.6$

$\therefore$  Required % =  $\frac{678.6}{3770} \times 100 = 18\%$

=> Ans - (B)

**Question 90**

**A vendor buys some lemons at the rate of 11 for Rs 10 and sells at the rate of 4 for Rs 5. What will be the result?**

- A 37.5 percent loss
- B 27.27 percent gain
- C 37.5 percent gain
- D 27.2 percent loss

**Answer: C**

**Explanation:**

The vendor buys 11 lemons for Rs. 10

=> Cost price of 1 lemon =  $\frac{10}{11} = \text{Rs } 0.90$

He sells 4 lemons for Rs. 5

=> Selling price of 1 lemon =  $\frac{5}{4} = \text{Rs } 1.25$

$\therefore$  Selling price is more than Cost price, the vendor earns a profit

=> Profit % =  $\frac{(1.25-0.90)}{0.90} \times 100$

= 37.5%

=> Ans - (C)

**Question 91**

**If  $7x - 5y = 13$  and  $2x - y = 5$ , then  $(x - y)$  is**

A 3

B 4

C 5

D 1

**Answer:** D

**Explanation:**

Equation 1 :  $7x - 5y = 13$

Equation 2 :  $2x - y = 5$

Multiplying equation (ii) by 5 and subtracting equation (i) from it, we get :

$$\Rightarrow (10x - 7x) = (25 - 13)$$

$$\Rightarrow 3x = 12$$

$$\Rightarrow x = \frac{12}{3} = 4$$

Substituting it in equation (ii),  $\Rightarrow y = 2(4) - 5$

$$\Rightarrow y = 8 - 5 = 3$$

$$\therefore (x - y) = 4 - 3 = 1$$

$\Rightarrow$  Ans - (D)

**Question 92**

The perimeters of a square and an equilateral triangle are equal. If the diagonal of the square is 9 cm, what is the area of the equilateral triangle?

A  $18\sqrt{3}$  sq cm

B  $9\sqrt{3}$  sq cm

C  $18\sqrt{2}$  sq cm

D  $9\sqrt{2}$  sq cm

**Answer:** A

**Explanation:**

Let the side of square =  $s$  cm and diagonal,  $d = 9$  cm

$$\Rightarrow (s)^2 + (s)^2 = (d)^2$$

$$\Rightarrow 2s^2 = 9^2 = 81$$

$$\Rightarrow s^2 = \frac{81}{2}$$

$$\Rightarrow s = \sqrt{\frac{81}{2}} = \frac{9}{\sqrt{2}}$$

Thus, perimeter of square =  $4s$

$$= 4 \times \frac{9}{\sqrt{2}} = 18\sqrt{2} \text{ cm}$$

Also, perimeter of square = Perimeter of equilateral triangle =  $18\sqrt{2} \text{ cm}$

Let side of equilateral triangle =  $a \text{ cm}$

$$\Rightarrow 3a = 18\sqrt{2}$$

$$\Rightarrow a = \frac{18\sqrt{2}}{3} = 6\sqrt{2} \text{ cm}$$

$\therefore$  Area of equilateral triangle =  $\frac{\sqrt{3}}{4}a^2$

$$= \frac{\sqrt{3}}{4} \times (6\sqrt{2})^2$$

$$= 18\sqrt{3} \text{ cm}^2$$

$\Rightarrow$  Ans - (A)

### Question 93

A thief is stopped by a policeman from a distance of 350 metres. When the policeman starts the chase, the thief also starts running. Assuming the speed of the thief as 7 km/h and that of police man as 12 km/h, how far the thief would have run, before he is overtaken?

A 490 metres

B 392 metres

C 588 metres

D 294 metres

**Answer:** A

### Explanation:

Since the thief is escaping from the police man, thus they both are running in same direction.

Speed of thief = 7 km/hr and speed of policeman = 12 km/hr

$\Rightarrow$  Relative speed =  $12 - 7 = 5 \text{ km/hr}$

Distance between them = 350 metres = 0.35 km

$\Rightarrow$  Time taken =  $\frac{\text{distance}}{\text{speed}}$

$$= \frac{0.35}{5} = \frac{7}{100} \text{ hr}$$

$\therefore$  Distance covered by thief before he was caught =  $7 \times \frac{7}{100}$

= 0.49 km = 490 metres

$\Rightarrow$  Ans - (A)



### Question 94

Painter 'A' can paint a house in 10 days and 'B' can do it in 20 days. With help of 'C', they did the job in 5 days only. Then, 'C' alone can do the job in:

- A 20 days
- B 10 days
- C 40 days
- D 50 days

**Answer:** A

#### **Explanation:**

Let total work to be done = 100 units

Painter 'A' can paint a house in 10 days and 'B' can do it in 20 days

$$\Rightarrow \text{A's efficiency} = \frac{100}{10} = 10 \text{ units/day}$$

$$\text{B's efficiency} = \frac{100}{20} = 5 \text{ units/day}$$

Let C's efficiency =  $x$  units/day

According to ques, all of them complete the job in 5 days

$$\Rightarrow (10 + 5 + x) \times 5 = 100$$

$$\Rightarrow x + 15 = \frac{100}{5} = 20$$

$$\Rightarrow x = 20 - 15 = 5$$

$$\therefore \text{Time taken by C alone to do the job} = \frac{100}{5} = 20 \text{ days}$$

$\Rightarrow$  Ans - (A)

### Question 95

What is the slope of the line parallel to the line passing through the points (4,6) and (2,3) ?

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

**Answer:** D

#### **Explanation:**

Slope of line passing through points (2,3) and (4,6)

$$= \frac{6-3}{4-2} = \frac{3}{2}$$

Slope of two parallel lines is always equal.

$$\Rightarrow \text{Slope of the line parallel to the line having slope } 3/2 = \frac{3}{2}$$

$\Rightarrow$  Ans - (D)

### Question 96

The total surface area of a cuboid is 376 sq cm. Find its volume if its length and breadth are 10 cm and 8 cm respectively?

A 960 cubic cms

B 240 cubic cms

C 480 cubic cms

D 720 cubic cms

**Answer: C**

### Explanation:

Let height of the cuboid =  $h$  cm

Length,  $l = 10$  cm and breadth,  $b = 8$  cm

$$\text{Total surface area of cuboid} = 2(lb + bh + hl) = 376$$

$$\Rightarrow 2[(10 \times 8) + (8 \times h) + (h \times 10)] = 376$$

$$\Rightarrow 80 + 18h = \frac{376}{2} = 188$$

$$\Rightarrow 18h = 188 - 80 = 108$$

$$\Rightarrow h = \frac{108}{18} = 6$$

$\therefore$  Volume of cuboid =  $lbh$

$$= 10 \times 8 \times 6 = 480 \text{ cm}^3$$

$\Rightarrow$  Ans - (C)

### Question 97

Refer the below data table and answer the following question.

	Quantity of stock	Average Cost
Mobile phones	47	11000
Cameras	60	9000
TVs	21	43000
Refrigerators	31	60000
Acs	82	22000

What is the value of total stock in lakh rupees

A 562.4

B 145

C 56.24

D 241

**Answer: C**

**Explanation:**

Total cost of mobiles =  $47 \times 11000 = \text{Rs. } 5,17,000$

Total cost of Cameras =  $60 \times 9000 = \text{Rs. } 5,40,000$

Total cost of TVs =  $21 \times 43000 = \text{Rs. } 9,03,000$

Total cost of Refrigerator =  $31 \times 60000 = \text{Rs. } 18,60,000$

Total cost of AC =  $82 \times 22000 = \text{Rs. } 18,04,000$

$\therefore$  Total cost =  $5,17,000 + 5,40,000 + 9,03,000 + 18,60,000 + 18,04,000 = \text{Rs. } 56,24,000$

Total cost in lakhs = Rs 56.24 lakhs

=> Ans - (C)

**Question 98**

Refer the below data table and answer the following question.

Year	Ratio Import/Export
2011	0.7
2012	1.1
2013	0.9
2014	1.2
2015	1

If the imports In 2012 was Rs. 1500 crores and the total exports In the years 2012 and 2013 together was Rs. 2000 crores, then the Imports In 2013 was?

A 573

B 636

C 1364

D 707

**Answer: A**

**Explanation:**

Imports in 2012 = Rs. 1500 crores

Let Exports in 2012 = Rs.  $y$  crores

Ratio of imports and exports in 2012 = 1.1

$$\Rightarrow \frac{1500}{y} = 1.1$$

$$\Rightarrow y = \frac{1500}{1.1} = 1363.63$$

Total exports In the years 2012 and 2013 together = Rs. 2000 crores

$\Rightarrow$  Exports in 2013 = Rs.  $(2000 - 1363.63)$  crores = Rs 636.37 crores

Let imports in 2013 = Rs.  $x$  crores

Ratio of imports and exports in 2013 =  $\frac{x}{636.37} = 0.9$

$$\Rightarrow x = 636.37 \times 0.9 = 572.733 \approx 573$$

$\therefore$  Imports in 2013 was Rs. 573 crores

$\Rightarrow$  Ans - (A)

### Question 99

Refer the below data table and answer the following question.

Measured on Birthday	Height of the child
4	100
5	105
6	115
7	125
8	130
9	135
10	140
11	150
12	160
13	170
14	180
15	185
16	195

What was the increase in the height of the child from the 7th birthday to the 13 birthday ?

A 55 cms

B 50 cms

C 45 cms

D 40 cms

**Answer:** C

**Explanation:**

Height on 7th birthday = 125 cm

Height on 13th birthday = 170 cm

Increase in height =  $170 - 125 = 45$  cm

=> Ans - (C)

### Question 100

Refer the below data table and answer the following question.

Deep Sleep	10
Dreaming	25
Light Sleep	10
Extremely Light Sleep	10
Awake	45

Between 10pm to 6am, a fitness band records the following data. How long was the user in Deep Sleep or was in Extremely light sleep ?

A 3.1 hours

B 1.1 hours

C 1.6 hours

D 2.1 hours

**Answer: C**

#### Explanation:

Total time between 10 pm to 6 am = 8 hours

% time spent in Deep Sleep or in Extremely light sleep =  $10 + 10 = 20$  %

=> Time spent in Deep Sleep or in Extremely light sleep =  $\frac{20}{100} \times 8$

=  $\frac{8}{5} = 1.6$  hours

=> Ans - (C)

# SSC CHSI 19 Jan 2017 Evening Shift

## Reasoning

### Instructions

For the following questions answer them individually

### Question 1

Select the related word/letters/number from the given alternatives. Clever : Smart :: Apprehensive : ?

- A Calm
- B Certain
- C Worried
- D Confident

**Answer:** C

### Explanation:

Clever and smart are synonyms meaning intelligent, similarly synonym of apprehensive is *worried*.

=> Ans - (C)

### Question 2

Select the related word/letters/number from the given alternatives. EF : UV :: IJ : ?

- A RQ
- B QR
- C PQ
- D NO

**Answer:** B

### Explanation:

Expression = EF : UV :: IJ : ?

Alphabets at the corresponding position from the reverse end are written. Also, the codes are written in inverse order.

Eg :- E -> V and F -> U

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

Similarly, IJ : QR

=> Ans - (B)

### Question 3

Select the related word/letters/number from the given alternatives.

QC : T :: SF : ?

A C

B Y

C Z

D X

**Answer: B**

### Explanation:

Expression = QC : T :: SF : ?

The pattern followed is that the numerical values of the alphabets are added.

Eg :- Q = 17 , C = 3 , =>  $17 + 3 = 20 \equiv T$

Similarly, S = 19 , F = 6 , =>  $19 + 6 = 25 \equiv Y$

=> Ans - (B)

### Question 4

Select the related word/letters/number from the given alternatives.

731 : 11 :: 991 : ?

A 19

B 13

C 17

D 23

**Answer: A**

### Explanation:

Expression = 731 : 11 :: 991 : ?

The second number is equal to the sum of digits of first number.

Eg :-  $7 + 3 + 1 = 11$

Similarly,  $9 + 9 + 1 = 19$

=> Ans - (A)

**Question 5**

Select the odd word/letters/number/number pair from the given alternatives.

- A Veena
- B Guitar
- C Violin
- D Flute

**Answer: D**

**Explanation:**

Unlike other three the flute is musical instrument in the woodwind group, hence it is the odd one out.

=> Ans - (D)

**Question 6**

Select the odd word/letters/number/number pair from the given alternatives.

- A KP
- B DW
- C GT
- D CW

**Answer: D**

**Explanation:**

Except CW other three are pair of corresponding opposite word, hence it is the odd one out.

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

=> Ans - (D)

**Question 7**

Select the odd word/letters/number/number pair from the given alternatives.

- A 306
- B 270



C 132

D 240

**Answer: B**

**Explanation:**

The pattern followed is :

$$306 = 17^2 + 17$$

$$132 = 11^2 + 11$$

$$240 = 15^2 + 15$$

=> Ans - (B)

**Question 8**

Select the odd word/letters/number/number pair from the given alternatives.

A 8324

B 9344

C 7213

D 8729

**Answer: B**

**Explanation:**

The 2 middle digits is equal to the product of first and last digits, but  $9 \times 4 \neq 34$ , hence 9344 is the odd one out.

=> Ans - (B)

**Question 9**

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

?, Planning, Strategy, Marketing, Finance

A Realization

B Success

C Failure

D Idea

**Answer: D**

**Explanation:**

Steps of business project startup process are given.

= Idea -> Planning -> Strategy -> Marketing -> Finance

=> Ans - (D)

**Question 10**

**A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.**

**5, 30, 155, 780, ?**

**A** 4000

**B** 3905

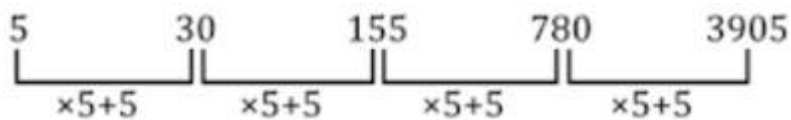
**C** 3900

**D** 3805

**Answer: B**

**Explanation:**

The pattern followed is that each number is multiplied by 5 and then 5 is added.



Thus, missing term = **3905**

=> Ans - (B)

**Question 11**

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

**Statements:**

**(I) Some bags are hot.**

**(II) All hot things are cakes.**

**Conclusion:**

**(I) All cakes are bags.**

**(II) All bags are cakes.**

**A** Conclusion I follows

**B** Conclusion II follows

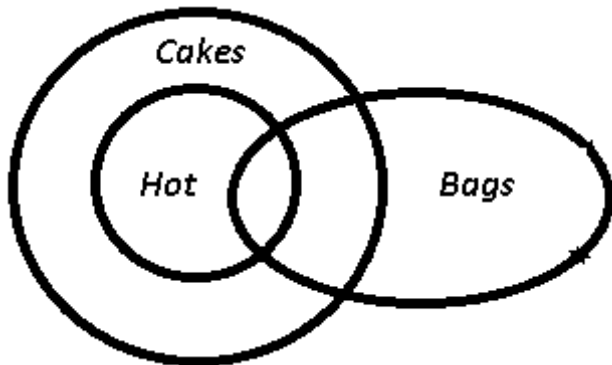
C Neither I nor II follows

D Both I and II follows

Answer: C

**Explanation:**

The venn diagram for above statements is :



Conclusion:

- (I) All cakes are bags = false
- (II) All bags are cakes = false

Thus, neither I nor II follows

=> Ans - (C)

### Question 12

**A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. PRQ, TVU, YAZ, ?**

A BDC

B EGF

C DFE

D EFG

Answer: B

**Explanation:**

Expression : PRQ, TVU, YAZ, ?

The pattern followed in each letter of the terms is :

1st letter : P (+4 letters) = T (+5 letters) = Y (+6 letters) = E

2nd letter : R (+4 letters) = V (+5 letters) = A (+6 letters) = G

3rd letter : Q (+4 letters) = U (+5 letters) = Z (+6 letters) = F

Thus, missing term = **EGF**

=> Ans - (B)

### Question 13

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. ML, HG, CB, ?

A XW

B YX

C WX

D ZY

**Answer:** A

#### **Explanation:**

Expression : ML, HG, CB, ?

The pattern followed in each letter of the terms is :

1st letter : M (-5 letters) = H (-5 letters) = C (-5 letters) = X

2nd letter : L (-5 letters) = G (-5 letters) = B (-5 letters) = W

Thus, missing term = **XW**

=> Ans - (A)

### Question 14

Ravi had five subjects in his final examination. The maximum marks in each subject are 100. If his percentage in four subjects is 80, and he scores 65 marks in the fifth subject, determine his overall percentage for the five subjects.

A 78

B 79

C 77

D 76

**Answer:** C

#### **Explanation:**

Maximum marks in each subject = 100

Percentage marks in 4 subjects = 80%

=> Total marks scored in 4 subjects =  $80 \times 4 = 320$

Marks in 5th subject = 65

$$\Rightarrow \text{Overall percentage for the five subjects} = \frac{(320+65)}{500} \times 100$$

$$= \frac{385}{5} = 77\%$$

$\Rightarrow$  Ans - (C)

### Question 15

Arrange the given words in the sequence in which they occur in the dictionary.

- i. Worrisome
- ii. Wonderful
- iii. Worthless
- iv. Wrong

A iv, ii, i, iii

B ii, i, iii, iv

C ii, iii, i, iv

D i, iv, iii, ii

**Answer: B**

### Explanation:

As per the order of dictionary :

= Wonderful  $\rightarrow$  Worrisome  $\rightarrow$  Worthless  $\rightarrow$  Wrong

$\equiv$  ii, i, iii, iv

$\Rightarrow$  Ans - (B)

### Question 16

In a certain code language, "HAMMER" is written as "MAHERM". How is "MATTER" written in that code language?

A TREMAT

B TAMERT

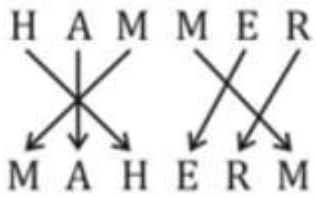
C TAEMRT

D TARMET

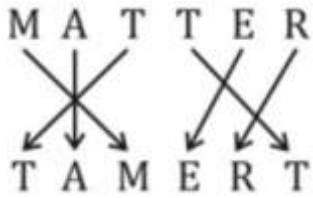
**Answer: B**

### Explanation:

"HAMMER" is written as "MAHERM"



Similarly, for MATTER :



=> Ans - (B)

### Question 17

Find the missing number in the given table ?

81	3	90
60	4	76
49	6	?

A 78

B 80

C 85

D 75

Answer: C

### Question 18

If "\*" denotes "added to", "&" denotes "divided by", "@" denotes "multiplied by" and "%" denotes "subtracted from", then  $399 \& 19 @ 21 \% 41 * 100 = ?$

A 458

B 500

C 575

D 600

Answer: B

**Explanation:**

Expression :  $399 \& 19 @ 21 \% 41 * 100 = ?$

$$\equiv 399 \div 19 \times 21 - 41 + 100$$

$$= (21 \times 21) - 41 + 100$$

$$= 441 - 41 + 100 = 500$$

=> Ans - (B)

**Question 19**

In the following question, which one set of letters when sequentially placed at the gaps in the given letter series shall complete it? P\_P\_RPQ\_S\_Q\_ST

A QRQPR

B QQRPR

C PQPRR

D PRQRQ

**Answer:** B

**Explanation:**

The pattern followed is that the alphabets starting from 'P' are written in increasing order after each term

= PQ PQR PQRS PQRST

=> Ans - (B)

**Question 20**

Vineet travels 16 km towards west, turns right and travels another 12 km, and then takes two successive left turns covering 8 km and 12 km in each turn respectively. Finally, he takes a right turn and travels 10km further. How far is he now from his original position ?

A 46 km

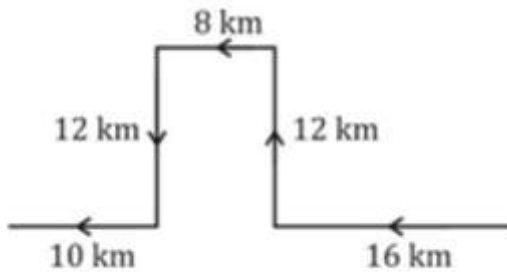
B 34 km

C 40 km

D 38 km

**Answer:** B

**Explanation:**



Vineet travels 16 km towards west, turns right and travels another 12 km towards north. After that he takes left turn to travel west for 8 km, he again takes left turn and travel 12 km and finally, he takes a right turn and travels 10km further towards west.

Thus, distance between his original and final position =  $16 + 8 + 10 = 34$  km

=> Ans - (B)

**Question 21**

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 shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, T can be represented by 20, 65, etc., and R can be represented by 43, 57, etc. Similarly, you have to identify the set for the word MIND.

**Matrix 1**

	0	1	2	3	4
0	T	R	V	M	N
1	V	U	N	H	M
2	T	N	S	G	L
3	M	V	P	L	M
4	V	T	L	R	N

**Matrix 2**

	5	6	7	8	9
5	E	D	R	I	H
6	T	R	I	O	D
7	O	S	Y	D	R
8	S	I	O	M	D
9	G	A	I	R	O

- A 03, 58, 33, 56
- B 14, 75, 12, 89
- C 30, 86, 21, 78
- D 34, 97, 44, 98

**Answer: C**



**Explanation:**

(A) : 03, 58, 33, 56 = MILD

(B) : 14, 75, 12, 89 = MOND

(C) : 30, 86, 21, 78 = **MIND**

(D) : 34, 97, 44, 98 = MINR

=> Ans - (C)

**Question 22**

Pointing to a photograph of a lady, Vishal says, "She is the sister-in-law of my grandfather's daughter". How is the lady in the photograph related to Vishal?

A Mother

B Aunt

C Sister

D Cannot be determined

**Answer: D**

**Explanation:**

Vishal's grandfather's daughter = Vishal's aunt or mother

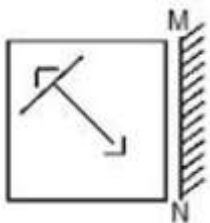
Now, that lady is the sister-in-law of Vishal's aunt or mother, => that lady is Vishal's mother or aunt.

Thus, relation between that lady and Vishal cannot be determined.

=> Ans - (D)

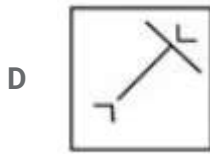
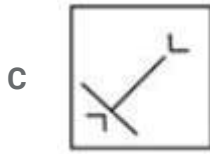
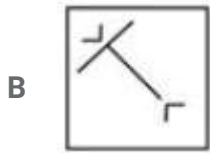
**Question 23**

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



A

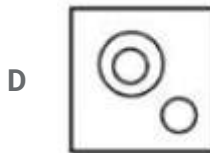
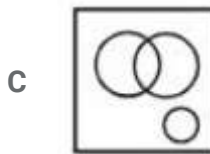
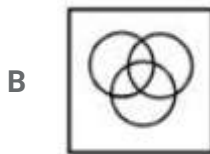
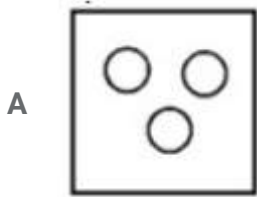




Answer: A

Question 24

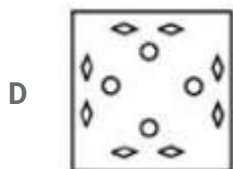
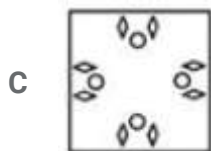
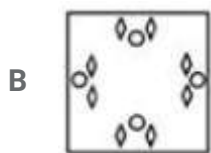
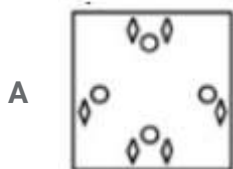
Identify the diagram that best represents the relationship among the given classes. Girl, Singer, Politician



Answer: B

Question 25

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



Answer: D

## General Awareness

**Instructions**

For the following questions answer them individually

**Question 26**

Garden inside the Taj Mahal is known as .....

A Mughal Garden

B Taj Bageecha

C Taj Mahal Garden

**D** Mahal Bageecha

**Answer: A**

**Question 27**

**How many Filmfare awards has Shahrukh Khan won?**

**A** 5

**B** 10

**C** 15

**D** 20

**Answer: C**

**Question 28**

**Which drug is used to cure Glaucoma?**

**A** Fexofenadine

**B** Ketoconazole

**C** Latanoprost

**D** Ibuprofen

**Answer: C**

**Question 29**

**.....are a group of chemicals that influence cell division and shoot formation.**

**A** Cytokinins

**B** Gibberellins

**C** Domins

**D** Auxins

**Answer: A**

**Question 30**

**Lungs are the primary organs of .....**

- A Digestion
- B Constipation
- C Perspiration
- D Respiration

**Answer: D**

**Question 31**

**Who discovered Oxygen?**

- A Carl Scheele
- B Hooke
- C Heisenberg
- D Williams

**Answer: A**

**Question 32**

**Electrons in the highest energy level of an atom are called .....**

- A valence protons
- B orbital protons
- C valence electrons
- D orbital electrons

**Answer: C**

**Question 33**

**How many KB is equal to 1 GB?**

- A 1024
- B 256 x 1024
- C 1024 x 1024
- D 1024 x 1024 x 128

**Answer: C**

#### **Question 34**

**The Queen who had the nick name "Bloody Mary"**

- A Elizabeth
- B Victoria
- C Mary I
- D Ruth

**Answer: C**

#### **Question 35**

**Find arc elasticity of demand, if quantity demanded falls from 4600 to 4200 when price of the item is increased from Rs 960 to Rs 1000?**

- A 2.23
- B 2.09
- C 2.23
- D 2.09

**Answer: A**

#### **Question 36**

**Match the characteristics with their market structure:**

- (a) Difficult entry (often due to economies of scale)
- (b) Can sell as much as it can at market price

- A (a) Monopolistic Competition, (b) Pure Monopoly

- B** (a) Pure Monopoly, (b) Oligopoly
- C** (a) Oligopoly, (b) Pure Competition
- D** (a) Pure Competition, (b) Oligopoly

**Answer: C**

**Question 37**

**Which of the following states has the maximum area of Mangrove forest?**

- A** Rajasthan
- B** Uttar Pradesh
- C** Sikkim
- D** West Bengal

**Answer: D**

**Question 38**

**Manas Tiger Reserve is in which state?**

- A** Telangana
- B** Madhya Pradesh
- C** Assam
- D** Kerala

**Answer: C**

**Question 39**

**First man to go into space was**

- A** Roald Amundsen
- B** Reynalt Mayor
- C** Robert Peary
- D** Major Yuri Gagarin

**Answer: D**

**Question 40**

**India has how many states?**

**A** 26

**B** 27

**C** 29

**D** 28

**Answer: C**

**Question 41**

**Which country is the largest producer of Wheat?**

**A** Brazil

**B** United States

**C** France

**D** China

**Answer: D**

**Question 42**

**Noor Jahan was wife of which Mughal Emperor?**

**A** Akbar

**B** Aurangzeb

**C** Jahangir

**D** Shah Jahan

**Answer: C**

**Question 43**

**Battle of Tarain was fought in the year .....**



A 1526

B 1757

C 1191

D 1857

**Answer: C**

**Question 44**

**Who invented the Lightning Rod in 1749?**

A Benjamin Franklin

B Nikola Tesla

C Eli Whitney

D George Washington

**Answer: A**

**Question 45**

**An object is in static equilibrium when it is .....**

A at rest

B moving in a circular path

C moving with uniform velocity

D accelerating at high speed

**Answer: A**

**Question 46**

**.....through a plane surface is the product of the magnetic flux density normal to the surface and the area of the surface.**

A Magnetic susceptibility

B Magnetic resonance

- C Magnetic flux
- D Magnetic pulse

**Answer: C**

**Question 47**

**First country to make constitution is .....**

- A India
- B England
- C USA
- D Sri Lanka

**Answer: C**

**Question 48**

**The number of parliamentary seats (Lok Sabha) of Chandigarh is**

- A 1
- B 6
- C 11
- D 15

**Answer: A**

**Question 49**

**Which country won the ICC Under19 Cricket World Cup in 2016?**

- A Australia
- B West Indies
- C Srilanka
- D South Africa

**Answer: B**

**Question 50**

**"Malgudi Days" was written by .....**

- A** Vijay Krishna Acharya
- B** Rajat Arora
- C** Mrinal Jha
- D** RK Narayan

**Answer: D**

## English

**Instructions**

For the following questions answer them individually

**Question 51**

**Select the word with the correct spelling.**

- A** mamoths
- B** nicotien
- C** rickshaw
- D** platypous

**Answer: C**

**Question 52**

**In the following question, a sentence has been given in Active/Passive voice. Out of four alternatives suggested, select the one, which best expresses the same sentence in Passive/Active voice.**

**One must keep one's promises.**

- A** One's promises must be kept by one.
- B** One's promises had to be kept.
- C** Promises must be kept.

**D** Promises have to be kept by one.

**Answer: C**

**Question 53**

**Rearrange the parts of the sentence in correct order**

**Taken together, this**

**Pgives a total global**

**Qstockpile of almost 1,900 tons of**

**Rnuclear weaponsusable material**

**A** QRP

**B** PQR

**C** RPQ

**D** QPR

**Answer: B**

**Question 54**

**In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.**

**Crocodile tears**

**A** To feel sad for another person's misfortunes

**B** To laugh so much that your eyes start to water

**C** A person whose sadness is never noticed

**D** Expressions of sorrow that are insincere

**Answer: D**

**Question 55**

**In the following question, a sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one, which best express the same sentence in Indirect/Direct speech.**

**The professor told the class, "Ice floats on water".**

**A** The professor told the class that, that ice floats on water.

**B** The professor told the class ice floats on water.

**C** The professor told the class that ice floats on water.

**D** The professor told the class how ice floats on water.

**Answer: C**

#### **Question 56**

**In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.**

**to portray in words; describe**

**A** to evince

**B** to divulge

**C** to depict

**D** to manifest

**Answer: C**

#### **Question 57**

**Improve the bracketed part of the sentence.**

**In 2001, hundreds of people were killed (from) the earthquake in Gujarat.**

**A** in

**B** because of

**C** since

**D** no improvement

**Answer: A**

#### **Question 58**

**Select the word with the correct spelling.**

**A** defered

**B** decifer

**C** fammished

**D** glaucoma

**Answer: D**

**Question 59**

**In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.**

**The residence of that rich man was plain to the point of being ....., with no luxuries.**

- A** ascetic
- B** austere
- C** stringent
- D** solemn

**Answer: B**

**Question 60**

**Select the antonym of motley**

- A** kaleidoscopic
- B** assorted
- C** homogenous
- D** disparate

**Answer: C**

**Question 61**

**Select the antonym of violation**

- A** abuse
- B** obedience
- C** felony
- D** crime

**Answer: B**

### Question 62

In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

Seldom we have been(A)/treated in such(B)/a rude manner.(C)/No error(D)

A A

B B

C C

D D

Answer: A

### Question 63

Improve the bracketed part of the sentence

Vikram (insist that) he was innocent.

A insisted on that

B insisted that

C insisted on

D no improvement

Answer: B

### Question 64

In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

Then, he left for Silicon Valley to .....his dream of launching a startup.

A persevere

B eschew

C pursue

D cherish

Answer: C

**Question 65**

**Select the synonym of  
bother**

- A obscene
- B beset
- C obfuscate
- D oblivious

**Answer: B**

**Question 66**

**Select the synonym of  
elate**

- A abase
- B faze
- C exhilarate
- D enervate

**Answer: C**

**Question 67**

**In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.**

**I will try to be on time(A)/but don't worry when(B)/I am late.(C)/No error(D)**

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

**Answer: B**



### Question 68

Rearrange the parts of the sentence in correct order

The loss of these Pyoung, and often Qmake us ponder Rbright, people must

- A PRQ
- B PQR
- C QPR
- D RPQ

**Answer: A**

### Question 69

In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.

**Chink in one's armour**

- A A spotless shield tells that the person has not yet fought any war
- B A small crack if not repaired will break the shield
- C An area of vulnerability
- D One's primary defence system against loss or injury

**Answer: C**

### Question 70

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.

**to impose something unwelcome on**

- A to subject
- B to extort
- C to levy
- D to inflict

**Answer: D**

**Instructions**

In the following passage, some of the words have been left out. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

It is obviously wrong as the cost of school uniform, books and stationery, and transport, .....all are under the monopoly of the school, are not included. ....private schools want additional money for special occasions like festivals, picnics, .....and projects. And they often recommend tuition for the children. None of this .....in this cost calculation. However, the family .....this burden and these items add significantly to the revenue of private schools.

**Question 71**

(1)

- A that
- B those
- C which
- D when

**Answer: C**

**Question 72**

(2)

- A Occasionally
- B Randomly
- C Rarely
- D Mostly

**Answer: A**

**Question 73**

(3)

- A travels
- B tours
- C expeditions
- D excursions

**Answer: D**

**Question 74**

(4)

- A counts
- B is counted
- C have been counted
- D had been counted

**Answer: B**

**Question 75**

(5)

- A bore
- B bears
- C had borne
- D is bearing

**Answer: B**

## Mathematics

**Instructions**

For the following questions answer them individually

**Question 76**

**Reflection of the point (4,6) in the origin is**

- A (4,6)
- B (-4,6)
- C (-4,-6)
- D (4,-6)

**Answer: C**

**Explanation:**

Reflection of point (a,b) in origin = (-a,-b)

=> Reflection of (4,6) = (-4,-6)

=> Ans - (C)

**Question 77**

The reciprocal of the sum of the reciprocals of 2/9 and 7/10 is

A 14/83

B 83/14

C 90/83

D 83/90

**Answer: A**

**Explanation:**

Sum of the reciprocals of 2/9 and 7/10

$$= \frac{9}{2} + \frac{10}{7}$$

$$= \frac{9(7)+10(2)}{14} = \frac{63+20}{14}$$

$$= \frac{83}{14}$$

$$\Rightarrow \text{Reciprocal of } 83/14 = \frac{14}{83}$$

=> Ans - (A)

**Question 78**

What is the equation of the line whose yintercept is 4 and making an angle of 45° with the positive axis?

A  $x + y = 4$

B  $x - y = 4$

C  $x + y = -4$

D  $x - y = -4$

**Answer: D**

**Explanation:**

Slope of line making an angle  $\theta$  with positive x-axis =  $\tan(\theta)$

=> Slope of given line,  $m = \tan(45) = 1$  and y-intercept,  $c = 4$

Equation of line =  $y = mx + c$

$$\Rightarrow y = 1(x) + 4$$

$$\Rightarrow x - y = -4$$

=> Ans - (D)

### Question 79

What is the value of  $(\sin A - 2\sin^3 A)/(2\cos^3 A - \cos A)$ ?

A  $\cot A$

B  $\operatorname{cosec} A$

C  $\sec A$

D  $\tan A$

Answer: D

### Explanation:

Expression :  $(\sin A - 2\sin^3 A)/(2\cos^3 A - \cos A)$

$$= \frac{\sin A}{\cos A} \times \frac{1-2\sin^2 A}{2\cos^2 A-1}$$

$$\because (\sin^2 A + \cos^2 A = 1)$$

$$= \tan A \times \frac{(\sin^2 A + \cos^2 A) - 2\sin^2 A}{2\cos^2 A - (\sin^2 A + \cos^2 A)}$$

$$= \tan A \times \frac{\cos^2 A - \sin^2 A}{\cos^2 A - \sin^2 A}$$

$$= \tan A \times 1 = \tan A$$

=> Ans - (D)

### Question 80

If  $5x-5(3x-1) < 4x-1 < 2+2x$ , then x can take which of the following values?

A 2

B 1

C -1

D -2

Answer: B

**Explanation:**

Expression 1 :  $5x - 5(3x - 1) < 4x - 1$

$$\Rightarrow 5x - 15x + 5 < 4x - 1$$

$$\Rightarrow 10x + 4x > 5 + 1$$

$$\Rightarrow 14x > 6$$

$$\Rightarrow x > \frac{3}{7} \text{ -----(i)}$$

Expression 2 :  $4x - 1 < 2 + 2x$

$$\Rightarrow 4x - 2x < 2 + 1$$

$$\Rightarrow 2x < 3$$

$$\Rightarrow x < \frac{3}{2} \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get :  $\frac{3}{7} < x < \frac{3}{2}$

The only value that  $x$  can take among the options = 1

$\Rightarrow$  Ans - (B)

**Question 81**

**Simplify  $(533bxaz)/(41ab)$**

A  $17xzb$

B  $19xz$

C  $13xz$

D  $31ab$

**Answer: C**

**Explanation:**

Simplify :  $(533bxaz)/(41ab)$

$$= \frac{533}{41} \times \frac{(ab)xz}{ab}$$

$$= 13xz$$

$\Rightarrow$  Ans - (C)

**Question 82**

**If  $x - y = 7$  and  $xy = 32$ , then value of  $(x^2 + y^2)$  is**

A 49

B 64

C 113

D 15

Answer: C

**Explanation:**

Given :  $(x - y) = 7$  and  $xy = 32$

Using  $(x - y)^2 = x^2 + y^2 - 2xy$

$\Rightarrow (7)^2 = (x^2 + y^2) - (2 \times 32)$

$\Rightarrow (x^2 + y^2) = 49 + 64 = 113$

$\Rightarrow$  Ans - (C)

**Question 83**

A wholesaler sells a watch to a retailer at a profit of 33% and the retailer sells it to a customer at a loss of 20%. If the customer pays Rs 2,181.2, what had it cost the wholesaler?

A Rs 2050

B Rs 2320

C Rs 2712

D Rs 1780

Answer: A

**Explanation:**

For the wholesaler,

Let the cost price = Rs.  $100x$

With profit of 33%, Selling price =  $\frac{133}{100} \times 100x = Rs.133x$

For the retailer,

Cost price = Rs.  $133x$

With a loss of 20%, Selling price =  $\frac{80}{100} \times 133x = Rs.106.4x$

For the customer,

Cost price =  $106.4x = 2181.2$

$\Rightarrow x = \frac{2181.2}{106.4} = 20.5$

$\therefore$  Cost price for retailer =  $100 \times 20.5 = Rs.2050$

$\Rightarrow$  Ans - (A)

**Question 84**

Product of digits of a 2digit number is 12. If we add 36 to the number, the new number obtained is a number formed by interchange of the digits. What is the number.

- A 62
- B 34
- C 26
- D 43

**Answer: C**

**Explanation:**

Let the unit's digit of the number be  $y$  and ten's digit be  $x$

$$\Rightarrow \text{Number} = 10x + y$$

$$\text{Product of digits} = x \times y = 12 \text{ -----(i)}$$

$$\text{According to question, } \Rightarrow 10x + y + 36 = 10y + x$$

$$\Rightarrow 9y - 9x = 36$$

$$\Rightarrow y - x = \frac{36}{9} = 4 \text{ -----(ii)}$$

Solving equation (i) and (ii), we get :  $x = 2$  and  $y = 6$

$\therefore$  Number = 26

$\Rightarrow$  Ans - (C)

**Question 85**

If  $\operatorname{cosec} \pi/4 - \sin \pi/3 = x$ , then the value of  $x$  is

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

**Answer: B**

**Explanation:**

Expression :  $\operatorname{cosec} \pi/4 - \sin \pi/3 = x$

$$= \operatorname{cosec}(45) - \sin(60)$$

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



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

=> Ans - (B)

### Question 86

A man travels 404 kilometres in partly by rail and steamer. He spends 10 hours more time on steamer. If the speed of the steamer is 30 km/hr and the velocity of rail is 50 km/hr, how much distance does he cover by steamer?

A 407 km

B 509 km

C 610 km

D 339 km

**Answer:** D

### Explanation:

Let distance covered by steamer =  $d$  km

=> Distance covered by rail =  $(404 - d)$  km

Let time taken on rail =  $t$  hours and time taken on steamer =  $(t + 10)$  hours

Speed of rail = 50 km/hr and speed of steamer = 30 km/hr

Using, speed = distance/time

For steamer,  $\frac{d}{t+10} = 30$

=>  $d = 30t + 300$  -----(i)

For rail,  $\frac{404-d}{t} = 50$

Substituting value of  $d$  from equation (i), we get :

=>  $404 - (30t + 300) = 50t$

=>  $404 - 300 = 50t + 30t = 80t$

=>  $t = \frac{104}{80} = 1.3$  hours

Substituting value of  $t$  in equation (i), =>  $d = (30 \times 1.3) + 300$

=  $39 + 300 = 339$  km

### Question 87

If  $\sqrt{\sec^2 A - 1} / \sec A = x$ , then the value of  $x$  is

A cosecA

B  $\cos A$

C  $\sin A$

D  $\tan A$

**Answer: C**

**Explanation:**

Expression :  $\frac{\sqrt{\sec^2 A - 1}}{\sec A}$

$$\because (\sec^2 A - \tan^2 A = 1)$$

$$= \frac{\sqrt{\tan^2 A}}{\sec A} = \frac{\tan A}{\sec A}$$

$$= \left(\frac{\sin A}{\cos A}\right) \div \left(\frac{1}{\cos A}\right)$$

$$= \left(\frac{\sin A}{\cos A}\right) \times (\cos A) = \sin A$$

=> Ans - (C)

**Question 88**

**A solid right circular cone of radius 4 cm and height 7 cm is put inside a cylindrical vessel of radius 5 cm and height 8 cm. How much water in cubic cm will be required to fill the cylindrical vessel completely?**

A 1022.48 cubic cms

B 1533.72 cubic cms

C 511.24 cubic cms

D 255.62 cubic cms

**Answer: C**

**Explanation:**

Radius of cylinder, R = 5 cm and height, H = 8 cm

Radius of cone, r = 4 cm and height, h = 7 cm

Water required to fill the cylinder completely = Volume of cylinder - Volume of cone

$$= (\pi R^2 H) - \left(\frac{1}{3}\pi r^2 h\right)$$

$$= (\pi)(R^2 H - \frac{1}{3}r^2 h)$$

$$= \left(\frac{22}{7}\right)[(5^2 \times 8) - \left(\frac{1}{3} \times 4^2 \times 7\right)]$$

$$= \left(\frac{22}{7}\right)(200 - \frac{112}{3})$$

$$= \frac{22}{7} \times \frac{488}{3}$$

$$\approx 511.24 \text{ cm}^3$$

=> Ans - (C)

### Question 89

If the amount received at the end of 2nd and 3rd year at Compound Interest on a certain Principal is Rs 24200, and Rs 26620 respectively, what is the rate of interest?

- A 10 percent
- B 5 percent
- C 20 percent
- D 16 percent

**Answer:** A

#### **Explanation:**

Compound interest at the end of 2nd year = Rs. 24,200

Compound interest at the end of 3rd year = Rs. 26,620

=> Difference = 26620 - 24200 = Rs. 2420

This is the interest obtained on the amount of 2nd year.

∴ Rate of interest,  $r = \frac{2420}{24200} \times 100 = 10\%$

=> Ans - (A)

### Question 90

Two numbers are 50% and 80% lesser than a third number. By how much percent is the second number to be enhanced to make it equal to the first number?

- A 150 percent
- B 60 percent
- C 30 percent
- D 37.5 percent

**Answer:** A

#### **Explanation:**

Let third number =  $100x$

First number is 50% less than  $100x$  and second number is 80% less than  $100x$

=> First number =  $50x$  and Second number =  $20x$

To make second number equal to first number, it should be enhanced by =  $50x - 20x = 30x$

$$\Rightarrow \text{Required \%} = \frac{30x}{20x} \times 100 = \frac{300}{2} = 150\%$$

$\Rightarrow$  Ans - (A)

### Question 91

Manoj can do a piece of work in 42 hours. If he is joined by Jayashree who is 100% more efficient, in what time they will finish the work together?

- A 7 hours
- B 3.5 hours
- C 14 hours
- D 2.5 hours

**Answer:** C

### Explanation:

Let total work to be done = 42 units

$$\text{Manoj's efficiency} = \frac{42}{42} = 1 \text{ unit/hr}$$

$$\text{Jayashree is 100\% more efficient, } \Rightarrow \text{Jayashree's efficiency} = 1 + \frac{100}{100} \times 1 = 2 \text{ units/hr}$$

$$(\text{Manoj} + \text{Jayashree})\text{'s 1 day's work together} = 1 + 2 = 3 \text{ units/hr}$$

$$\therefore \text{Time taken by Manoj and Jayashree together to finish the work} = \frac{42}{3} = 14 \text{ hours}$$

$\Rightarrow$  Ans - (C)

### Question 92

The measures of the three angles of a triangle are in the ratio 1:2:3. What is the measure of the biggest angle?

- A  $30^\circ$
- B  $60^\circ$
- C  $90^\circ$
- D  $120^\circ$

**Answer:** C

### Explanation:

Let the three angles of the triangle be  $x, 2x, 3x$

Sum of internal angles of a triangle =  $180^\circ$

$$\Rightarrow x + 2x + 3x = 180^\circ$$

$$\Rightarrow 6x = 180^\circ$$

$$\Rightarrow x = \frac{180}{6} = 30^\circ$$

$$\therefore \text{Biggest angle} = 3x = 3 \times 30 = 90^\circ$$

$\Rightarrow$  Ans - (C)

### Question 93

The average revenues of 13 consecutive years of a company is Rs 70 lakhs. If the average of first 7 years is Rs 65 lakhs and that of last 7 years is Rs 77 lakhs, find the revenue for the 7th year.

A Rs 86 lakhs

B Rs 84 lakhs

C Rs 82 lakhs

D Rs 80 lakhs

**Answer:** B

### Explanation:

Total revenues of 13 years of the company =  $70 \times 13 =$  Rs. 910 lakhs

Total revenue of first 7 years =  $65 \times 7 =$  Rs. 455 lakhs

Total revenue of last 7 years =  $77 \times 7 =$  Rs. 539 lakhs

$\therefore$  Revenue of 7th year =  $(455 + 539) - 910 = 994 - 910$

= Rs. 84 lakhs

$\Rightarrow$  Ans - (B)

### Question 94

Profit of Rs 144000 has to be divided among three partners Akram, Bipin and Chintan in the ratio 3:2:7. How much Rs. Chintan get?

A 84000

B 24000

C 36000

D 42000

**Answer:** A

### Explanation:

Total profit to be distributed = Rs. 1,44,000

Ratio of profit divided among Akram, Bipin and Chintan = 3 : 2 : 7

Thus, amount that Chintan will get =  $\frac{7}{(3+2+7)} \times 144,000$

=  $\frac{7}{12} \times 144,000$

=  $7 \times 12000 = \text{Rs } 84,000$

=> Ans - (A)

### Question 95

Area of .....equals half the product of its diagonal.

- A Parallelogram
- B Rectangle
- C Kite
- D Cyclic quadrilateral

**Answer: C**

#### Explanation:

Area of rhombus and kite is equal to half the product of its diagonal.

=> Ans - (C)

### Question 96

The costs of daily ticket of local train is Rs. 50 and Monthly Pass costs is Rs. 1125. If I buy the Monthly Pass and travel for 30 days in a month then I save?

- A 10 percent
- B 25 percent
- C 14 percent
- D 15 percent

**Answer: B**

#### Explanation:

Train ticket cost for 1 day = Rs. 50

=> Cost for 30 days =  $30 \times 50 = \text{Rs. } 1500$

Cost of monthly pass = Rs. 1125

=> Money saved =  $1500 - 1125 = \text{Rs. } 375$

$$\therefore \text{Required \%} = \frac{375}{1500} \times 100 = 25\%$$

=> Ans - (B)

### Question 97

Read the data and answer the questions

	Weight	Hieght(M)
Apeksha	59	1.8
Apsara	51	1.72
Aradhana	62	1.57
Archana	74	1.68

Who has the least weight to height ratio?

- A Apeksha
- B Apsara
- C Aradhana
- D Archana

**Answer: B**

#### Explanation:

Ratio of weight to height

$$\text{Apeksha : } \frac{59}{1.8} = 32.7$$

$$\text{Apsara : } \frac{51}{1.72} = 29.6 \quad \text{[LEAST]}$$

$$\text{Aradhana : } \frac{62}{1.57} = 39.5$$

$$\text{Archana : } \frac{74}{1.68} = 44.1$$

=> Ans - (B)

### Question 98

Read the data and answer the given data ?

Years	Company's Profit in %
2011	15
2012	5
2013	10
2014	25
2015	15

What was the revenue of the company if its expenditure was Rs 525 crore in the year when its % profit was the least?

- A 577.5
- B 603.75
- C 525
- D 551.25

**Answer: D**

#### Explanation:

Profit % was least in 2012 = 5%

Let revenue = Rs.  $x$  crore and expenditure = Rs. 525 crore

$$\Rightarrow \text{Profit \%} = \frac{x-525}{525} \times 100 = 5$$

$$\Rightarrow \frac{x-525}{525} = \frac{5}{100} = \frac{1}{20}$$

$$\Rightarrow x - 525 = \frac{525}{20} = 26.25$$

$$\Rightarrow x = 525 + 26.25 = 551.25 \text{ crore}$$

$\Rightarrow$  Ans - (D)

### Question 99

Read the data and answer the given questions

No of Children	No of Houses
0	7
1	17
2	13
3	3

What is the average children per house?

- A 1.65
- B 1.3



C 1.9

D 1.15

**Answer: B**

**Explanation:**

Total number of houses =  $7 + 17 + 13 + 3 = 40$

Total children =  $(0 \times 7) + (1 \times 17) + (2 \times 13) + (3 \times 3)$

=  $17 + 26 + 9 = 52$

$\therefore$  Average number of children per house =  $\frac{52}{40} = 1.3$

=> Ans - (B)

**Question 100**

**Read the data and answer the given questions**

Partners	Present % Share
Anand	20
Basu	5
Chinmay	25
Dhiraj	20
Ejaz	30

**If the company has issued 6 lakh shares between its five partners and If Chinmay offers to sell 15000 of his shares to Dhiraj, then Dhiraj will have how many shares?**

A 120000 shares

B 135000 shares

C 150000 shares

D 105000 shares

**Answer: B**

**Explanation:**

Total shares = 6,00,000

Original shares with Dhiraj =  $\frac{20}{100} \times 600000 = 1,20,000$

If Chinmay offers to sell 15,000 of his shares to Dhiraj,

=> Shares with Dhiraj =  $1,20,000 + 15,000 = 1,35,000$

=> Ans - (B)