

# Parmar SSC Live Mock 19

<p><b>Q. 1</b></p> <p>If COMPROMISE is coded as OCIMORPMES, then how would INCULcate be coded?</p> <p>a) NIUCLLATE <span style="color: red;">X</span></p> <p>b) NIACLUET <span style="color: green;">✓</span></p> <p>c) NIALCCUET <span style="color: red;">X</span></p> <p>d) CNICLUETA <span style="color: red;">X</span></p>	<p>Correct answer is option 2</p> <p><b>Explanation:</b></p>
<p><b>Q. 2</b></p> <p>Which number will replace the question mark (?) in the following number series? 7, 6, 10, 27, 104, ?</p> <p>a) 195 <span style="color: red;">X</span></p> <p>b) 200 <span style="color: red;">X</span></p> <p>c) 515 <span style="color: green;">✓</span></p> <p>d) 330 <span style="color: red;">X</span></p>	<p>Correct answer is option 3.</p> <p><math>7 \times 1 - 1 = 6</math></p> <p><math>6 \times 2 - 2 = 10</math></p> <p><math>10 \times 3 - 3 = 27</math></p> <p><math>27 \times 4 - 4 = 104</math></p> <p><math>104 \times 5 - 5 = 515</math></p>

Q. 3

If the signs – and ÷ are interchanged, then which of the following equations would be correct?

- a)  $8 \times 12 - 6 \div 3 = 12$  X
- b)  $12 \div 4 \times 3 - 6 = 10$  ✓
- c)  $4 - 8 \times 16 \div 4 = 6$  X
- d)  $8 + 12 - 6 \div 3 = 9$  X

**Correct answer is option 2.**

**Explanation:**

$$\begin{aligned}12 - 4 \times 3 \div 6 \\= 12 - 4 \div 2 \\= 12 - 2 = 10\end{aligned}$$

Q. 4

Select the number-pair in which the two numbers are related in the same way as the two numbers of the pair given below.

10 : 24

- a) 140 : 165 X
- b) 48 : 99 X
- c) 50 : 80 ✓
- d) 70 : 120 X

**Correct answer is option 3.**

$$10 : 24 = 3^2 + 1 : 5^2 - 1$$

Here 3 and 5 are consecutive odd numbers.

Similarly,

$$7^2 + 1 : 9^2 - 1 = 50 : 80$$

Here 7 and 9 are consecutive odd numbers.

**Q. 5**

Eight friends A, B, C, D, E, F, G and H are sitting around a square table facing the centre. One pair of the person are sitting on each side of the table and no person is sitting at the corner.

I . B is facing D and is sitting to the right of E.

II . F, who is a neighbour of D, is facing G.

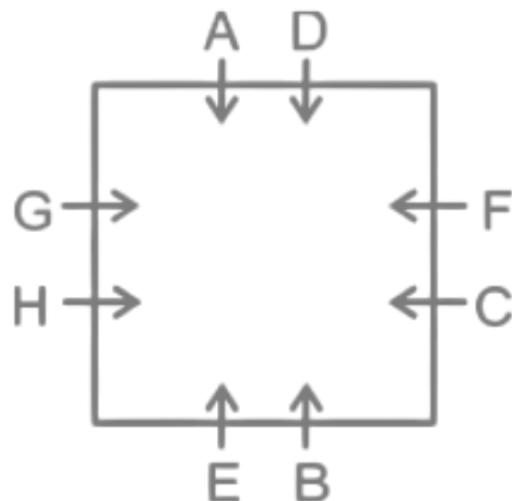
III. There are two persons between C and H, and H is not facing E. Who might be sitting between C and E, if there is only one person between them?

a) D

b) A

c) G

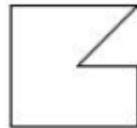
d) B

**Explanation:**

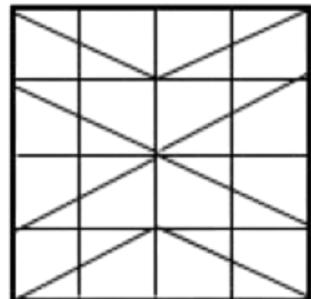
Clearly, B is sitting between E and C.

Q. 6

Select the option figure in which the given figure is embedded (rotation is NOT allowed)

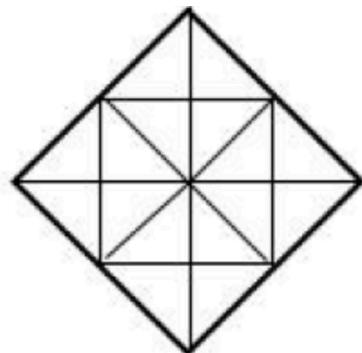


a)



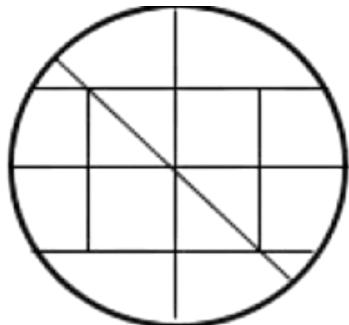
X

b)



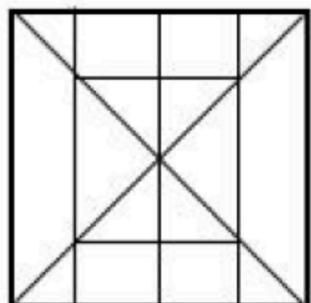
✓

c)



X

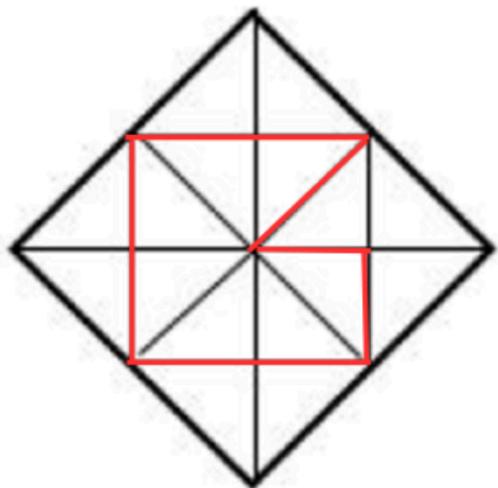
d)



X

Correct answer is option 2.

Explanation:



Q. 7

Two statements are followed by two conclusions numbered I and II. Assuming the statements to be true even if they do not conform to real-world knowledge, decide which of the conclusion(s) logically follows/follow from the statements.

Statements:

I. Some plants are trees.

II. All herbs are plants.

Conclusions:

I. Some plants are herbs.

II. All herbs are trees is a possibility.

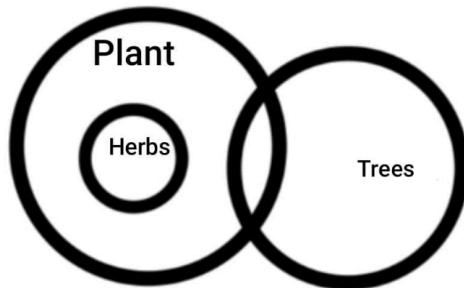
a) Neither conclusion I nor conclusion II follows

b) Only conclusion II follows

c) Both conclusions I and II follow

d) Only conclusion I follows

Correct answer is option 3.



Explanation:

Conclusion I: Some plants are herbs.

→ Since all herbs are plants, at least some plants are herbs. So, this follows.

Conclusion II: All herbs are trees is a possibility.

→ Some plants are trees, and herbs are plants. So it's possible herbs are trees. This also follows.

**Q. 8**

Which letter-cluster will replace the question mark (?) in the following series?

CED, FJH, KQN, ?, AKF

a) SZT



b) QZV



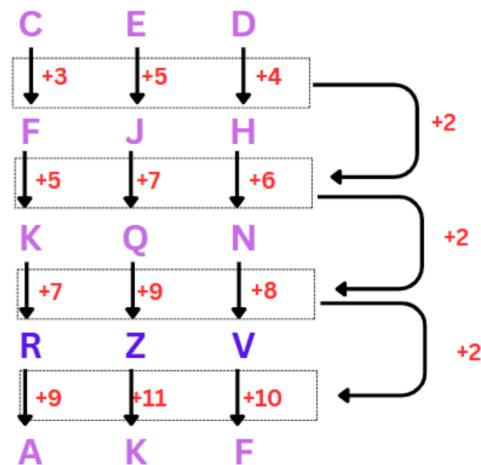
c) RZV



d) RXU

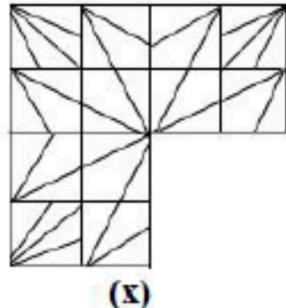


**Explanation:**

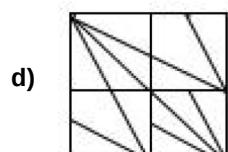
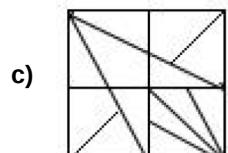
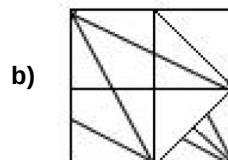
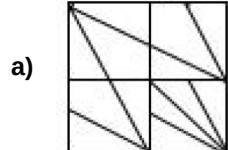


Q. 9

Select the option figure, which when placed in the blank space of the figure marked "X", would complete the pattern

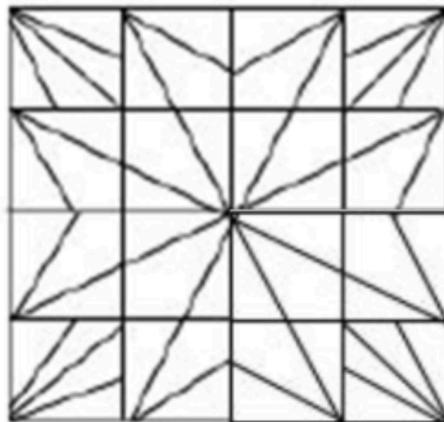


(X)



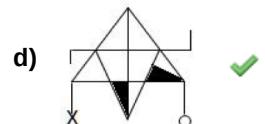
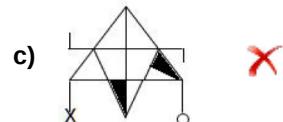
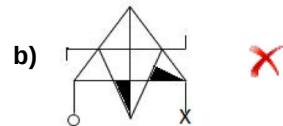
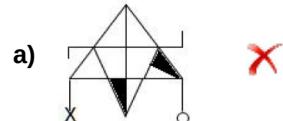
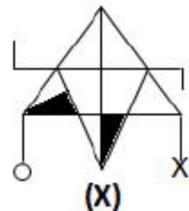
Correct answer is option 1.

Explanation:



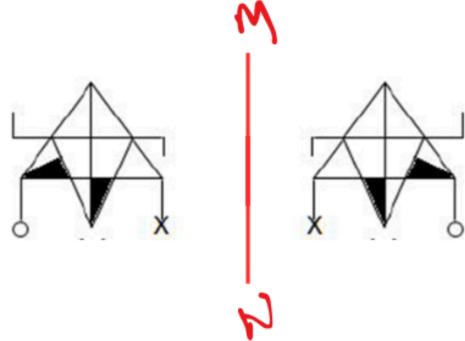
Q. 10

Select the mirror image of the figure marked 'X', when the mirror is placed on the right side of the figure.



Correct answer is option 4.

Explanation:



**Q. 11**

Six girls are sitting in a row facing North.

- i. Navika is to the immediate left of Seema, whose neighbour is Sabnam.
- ii. Hima is sitting at one end of the row, but not Sabnam.
- iii. Rupali is between Vinita and Navika. Who is sitting at the other end of the row?

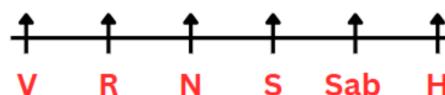
a) Navika

b) Vinita

c) Rupali

d) Seema

Correct answer is option 2.

**Explanation:**

Clearly, Vinita is sitting at the left end.

**Q. 12**

Which two signs should be interchanged to make the given equation correct?

$$12 \div 2 \times 6 + 4 - 2 = 13$$

a)  $\times$  and  $-$

b)  $\times$  and  $+$

c)  $+$  and  $\div$

d)  $+$  and  $-$

Correct answer is option 3.

**Explanation:**

$$12 + 2 \times 6 \div 4 - 2$$

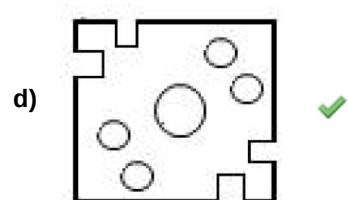
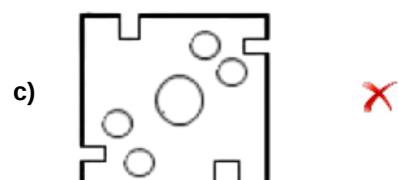
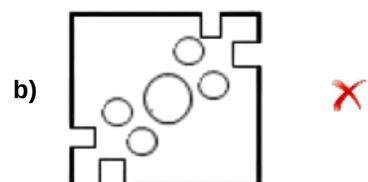
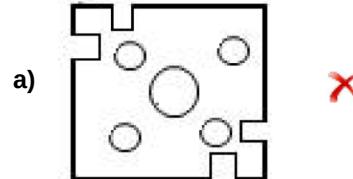
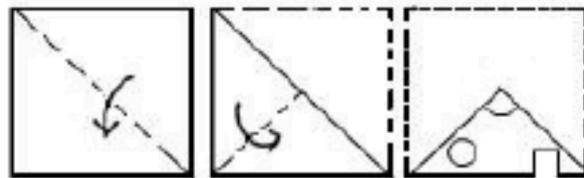
$$= 12 + 2 \times 3 \div 2 - 2$$

$$= 12 + 3 - 2$$

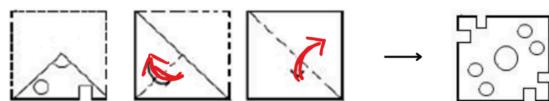
$$= 15 - 2 = 13.$$

**Q. 13**

The sequence of folding a piece of paper and the manner in which the folded paper figures below. How would the paper look when unfolded?

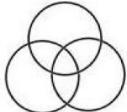
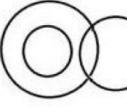
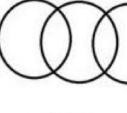
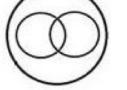


Correct answer is option 4.

**Explanation:**

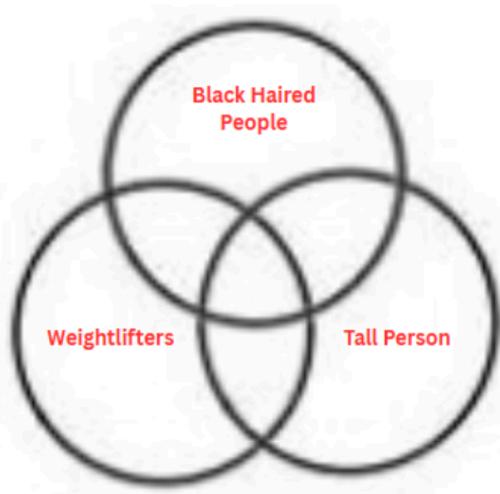
Q. 14

Select the Venn diagram that best illustrates the relationship among the following classes.  
Black-haired people, Tall persons, Weightlifters

- a)  ✓
- b)  ✗
- c)  ✗
- d)  ✗

Correct answer is option 1.

Explanation:



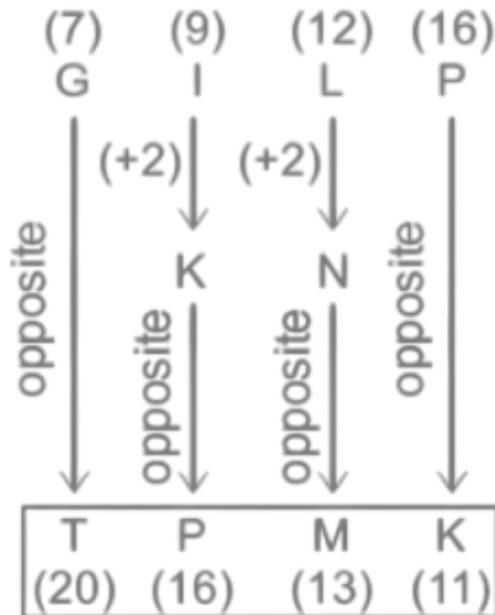
Q. 15

Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.

GILP : TPMK :: DGKP : ?

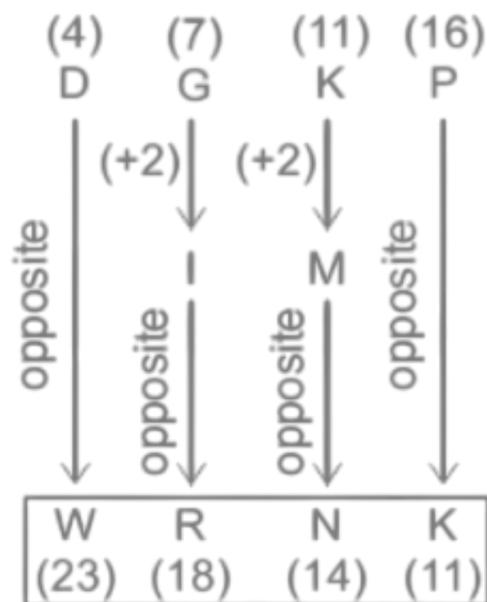
- a) WURN X
- b) WRNK ✓
- c) WTPK X
- d) VQMJ X

Correct answer is option 2.



Explanation:

Similarly,



**Q. 16**

Three statements are followed by three conclusions numbered I, II and III. Assuming the statements to be true even if they do not conform to real-world knowledge, decide which of the conclusion(s) logically follows/follow from the statements.

**Statements:**

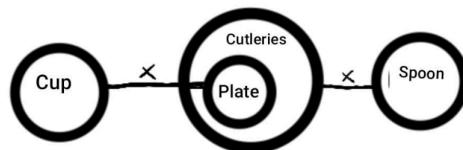
1. No cup is a plate.
2. All plates are cutlery.
3. No cutlery is a spoon.

**Conclusions:**

- I. Some cutlery are plates.
- II. No cutlery is a cup.
- III. Some spoons being cups is a possibility.

- a) Only conclusions II and III follow X
- b) Only conclusion III follows X
- c) Only conclusions I and III follow ✓
- d) All conclusions I, II and III follow X

Correct answer is option 3.

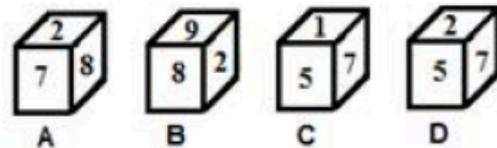


**Explanation:**

- Conclusion I: Some cutlery are plates  
 → All plates are cutlery, so definitely some cutlery are plates. (Follows)
- Conclusion II: No cutlery is a cup  
 → No cup is a plate, but not all cutlery are plates. So cup could be a cutlery. (Does not follow)
- Conclusion III: Some spoons being cups is a possibility  
 → No link is given between spoons and cups, so it's possible. (Follows)

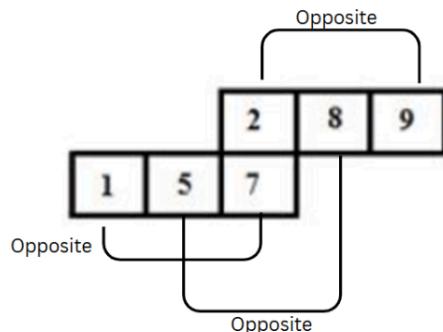
**Q. 17**

Select the cubes that can be formed by folding the given sheet along the lines.



- a) Only B, C and D X
- b) Only A and D ✓
- c) Only A, C and D X
- d) Only B and C X

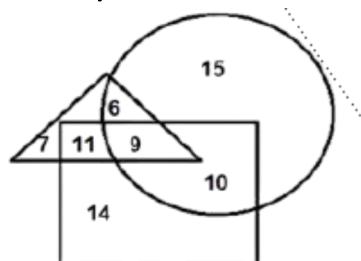
Correct answer is option 2.

**Explanation:**

Q. 18

In the given diagram, the circle represents 'teachers', the triangle represents 'dancers' and the rectangle represents 'writers'. Study the given diagram carefully and answer the question that follows.

How many teachers are Non-Dancers and writers ?



- a) 10 ✓
- b) 9 ✗
- c) 11 ✗
- d) 15 ✗

**Explanation:**

**Correct answer is option 1.**

There are 10 teachers who are also writers but not dancers.

Q. 19

Select the correct option that indicates the arrangement of the given words in the order in which they appear in reverse order of the English dictionary.

1. Sensational
  2. Sensitize
  3. Sentiment
  4. September
  5. Sentence
- a) 1, 2, 5, 3, 4 ✗
  - b) 2, 1, 5, 3, 4 ✗
  - c) 4, 3, 5, 2, 1 ✓
  - d) 5, 3, 2, 1, 4 ✗

**Correct answer is option 3.**

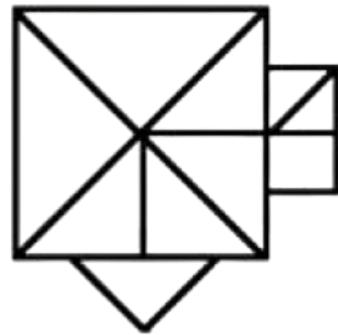
**Explanation:**

Correct sequence in **Reverse order** of English dictionary is as follows :

4. September > 3. Sentiment > 5. Sentence > 2. Sensitize > 1. Sensational.

Q. 20

Find the number of triangles in the given figure-



a) 15 ✓

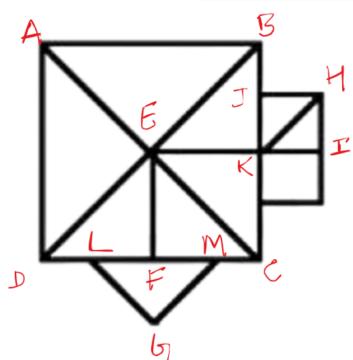
b) 19 ✗

c) 17 ✗

d) 13 ✗

Correct answer is option 1.

Explanation:



ABE  
BEC  
CED  
DEA  
ABC  
BCD  
ACD  
DAB  
DEF  
FEC  
LGM  
KJH  
KHI  
KEB  
CEK

Q. 21

If 19 July 2000 was a Wednesday, then what would be the day of the week on 15 June 2012?

- a) Saturday X
- b) Wednesday X
- c) Thursday X
- d) Friday ✓

Correct answer is option 4.

Day Code							
Sun	Mon	Tue	Wed	Thru	Fri	Sat	
0	1	2	3	4	5	6	
Month Code							
Month	Jan	Feb	Mar	Apr	May	Jun	July
Normal Year	0	3	3	6	1	4	6
Leap Year	6	2	3	6	1	4	6
Month Code							
Century Code	1600	1700	1800	1900	2000	2100	2200
	6	4	2	0	6	4	2
							0

$$\text{Date} + \text{Month Code} + \text{Century Code} + \text{Last 2 digits of year} + (\text{last two digits of year} \div 4)$$

Remainder =

7

Century code for 2012 is "6"

$$\text{Last two digit of year} \div 4 = 12 \div 4 = 3$$

$$\text{Remainder} = (15 + 4 + 6 + 12 + 3) \div 7$$

$$= 5 \text{ (Remainder)}$$

Therefore, Friday (on 15 June 2012)

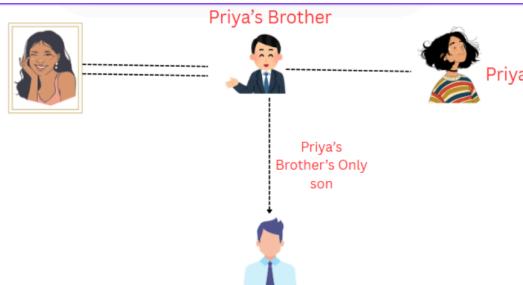
Explanation:

Q. 22

Pointing towards a photo of a lady Priya said she is my brother's Only son's mother. How is that lady related to Priya ?

- a) Sister
- b) Daughter-in-law
- c) Brother's Wife
- d) Mother

Correct answer is option 3.



Explanation:

Clearly, The lady in the photograph is the wife of Priya's Brother.

Q. 23

In a row of people, Raghav is standing at the 14<sup>th</sup> position from the extreme left end and Naresh is at the 16<sup>th</sup> position from the extreme right end. If they interchange their respective positions, Raghav now becomes 23<sup>rd</sup> from the extreme left end. What is the position of Naresh from the extreme right end after the interchange ?

- a) 24<sup>th</sup>
- b) 28<sup>th</sup>
- c) 25<sup>th</sup>
- d) 22<sup>nd</sup>

Correct answer is option 3.

As they are interchanging their positions.

14<sup>th</sup> ( Raghav's old position from left )

14 + 9 positions are increasing ↗ 23<sup>rd</sup>

16<sup>th</sup> ( Naresh's old position from right )

16 + 9 Positions also increasing ↗ 25<sup>th</sup>

So, 25<sup>th</sup> will be answer.

**Q. 24**

**Decide which of the conclusions logically follow (s) from the information given in the statement.**

**Statement :**

**Politicians marry only beautiful girls. X is a beautiful girl.**

**Conclusion :**

1. X will marry a politician
2. X won't marry a politician.

a) Only conclusion 1 follow

b) Only conclusion 2 follow

c) Either 1 or 2 follow

d) Both 1 and 2 follow

**Explanation:**

**Correct answer is option 3.**

X is beautiful and she can marry a politician or not. It's her choice. Hence, either 1 or 2 follows.

**Q. 25**

**Refer to the following letter, number, symbol series and answer the question.**

**(left) N & 2 G 9 S P T B 4 @ H # 1 8 S B A 3 P (Right)**

**If all numbers are dropped from the series, which of the following will be the 7<sup>th</sup> from right ?**

a) #

b) H

c) @

d) B

**Explanation:**

**Correct answer is option 3.**

After dropping all numbers from the series, we get:

N & G S P T B @ H # S B A P

'@' is 7<sup>th</sup> from right.

Q. 26	<p>Select the most appropriate ANTONYM of the underlined word in the following sentence.</p> <p>The government is proposing to <u>incinerate</u> cattle carcasses at many sites, some of which are in populated areas.</p> <p>a) Combust </p> <p>b) Blaze </p> <p>c) Extinguish </p> <p>d) Oxidise </p>
<b>Explanation:</b>	<p>The correct answer is: (3) <b>Extinguish</b></p> <ul style="list-style-type: none"> <li>• <b>Incinerate</b> means <b>to burn something completely</b>, especially to destroy it.</li> <li>• <b>Extinguish</b> – <b>To put out a fire</b> (Correct antonym)</li> </ul> <p>Other options:</p> <ul style="list-style-type: none"> <li>• <b>Combust</b> – To catch fire and burn</li> <li>• <b>Blaze</b> – A strong fire</li> <li>• <b>Oxidise</b> – A chemical reaction with oxygen.</li> </ul>

Q. 27	<p>Select the option that can be used as a one-word substitute for the given group of words.</p> <p>Hospital for people with mental illnesses</p> <p>a) Hangar </p> <p>b) Druggist </p> <p>c) Asylum </p> <p>d) Shelter </p>
<b>Explanation:</b>	<p>The correct answer is:(3) <b>Asylum</b></p> <ul style="list-style-type: none"> <li>• <b>Asylum</b> – A hospital or institution for people with <b>mental illnesses</b> (Correct answer)</li> <li>• <b>Hangar</b> – A large building where aircraft are kept</li> <li>• <b>Druggist</b> – A person who prepares and sells medicines (pharmacist)</li> <li>• <b>Shelter</b> – A place that provides protection or temporary housing.</li> </ul>

Q. 28	<p>Select the sentence that does NOT have a spelling error.</p> <p>a) The paintings are structured chronologically, starting from cubism to surrealism. <span style="color: red;">X</span></p> <p>b) The artist received recognition for her impressive etchings, buclic landscapes, and recreation of natural scenes around her. <span style="color: red;">X</span></p> <p>c) The insouciance of the rock star considering the importance of the occasion, came as a shock to the audience who expected stressful moments. <span style="color: green;">✓</span></p> <p>d) The focus of the exhibition is to reinforce versatility and creative thinking. <span style="color: red;">X</span></p>
Explanation:	<p>Correct Answer: 3. The insouciance of the rock star considering the importance of the occasion, came as a shock to the audience who expected stressful moments.</p> <p><b>Spelling errors in other options:</b></p> <ol style="list-style-type: none"> <li>1. "surrealism" → should be "surrealism"</li> <li>2. "buclic" → should be "bucolic"</li> <li>3. "exibition" → should be "exhibition"</li> </ol>

Q. 29	<p>Select the most appropriate synonym of the given word.</p> <p><b>Fragile</b></p> <p>a) Strong <span style="color: red;">X</span></p> <p>b) Delicate <span style="color: green;">✓</span></p> <p>c) Heavy <span style="color: red;">X</span></p> <p>d) Shiny <span style="color: red;">X</span></p>
Explanation:	<p>Correct Answer: (2). Delicate</p> <ul style="list-style-type: none"> <li>● <b>Fragile</b> means easily broken or damaged.</li> <li>● <b>Delicate</b> also means easily damaged or sensitive — (correct synonym)</li> </ul> <p>Other options:</p> <ul style="list-style-type: none"> <li>● <b>Strong</b> means having the power to move heavy objects or to perform physically demanding tasks; not easily broken or damaged.</li> <li>● <b>Heavy</b> means of great weight; difficult to lift or move.</li> <li>● <b>Shiny</b> means reflecting light; bright.</li> </ul>

Q. 30	<p>Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.</p> <p>A. The museum exhibit showcased an impressive collection of ancient artifacts.      B. Visitors from around the world came to marvel at the intricate carvings and delicate pottery, each piece telling a story of the people who had created it.      C. The museum's director was proud of the exhibit and the efforts his team had made to curate it.      D. However, one day, a visitor claimed to recognise a piece that had been stolen from his family's home many years ago.      E. The director was shocked and vowed to investigate the matter thoroughly.</p> <p>a) CABDE      ✗      b) BCEDA      ✗      c) CDEAB      ✗      d) ABCDE      ✓</p>
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Explanation:	<p><b>Correct answer Option 4 — ABCDE</b></p> <ul style="list-style-type: none"> <li>● A: Starts with the exhibit showcasing ancient artifacts.</li> <li>● B: Talks about visitors admiring those artifacts.</li> <li>● C: Introduces the museum director's pride in the exhibit.</li> <li>● D: Presents the conflict where a visitor claims a stolen piece.</li> <li>● E: Shows the director's reaction to investigate.</li> </ul> <p>A → B → C → D → E</p>
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Q. 31	<p>Select the option that expresses the following sentence in passive voice.</p> <p>The reviewer gave a dazzling review of the restaurant, which then went viral.</p> <p>a) A dazzling review of the restaurant is given by the reviewer, which then went viral. ✗      b) It went viral when the reviewer gave a dazzling review of the restaurant. ✗      c) The reviewer was given a dazzling review to the restaurant, which then had gone viral. ✗      d) A dazzling review of the restaurant was given by the reviewer, which then went viral. ✓</p>
Explanation:	<p><b>Correct Answer: (4). A dazzling review of the restaurant was given by the reviewer, which then went viral.</b></p> <p><b>Passive Voice :</b></p> <ul style="list-style-type: none"> <li>● In passive voice, the <b>object</b> of the active sentence becomes the <b>subject</b>.</li> <li>● The verb "gave" (past tense) becomes "<b>was given</b>" (passive form).</li> <li>● Add "<b>by the reviewer</b>" to show who performed the action.</li> </ul>

Q. 32	<p>Select the most appropriate option that can substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.</p> <p>If I <u>was</u> you, I would not have appeared for the entrance exam.</p> <p>a) would </p> <p>b) would have been </p> <p>c) No substitution required </p> <p>d) were </p>
Explanation:	<p>The correct answer is: (4). <b>were</b></p> <ul style="list-style-type: none"> <li>• The correct form for the conditional (hypothetical situation) is "If I <b>were</b> you," not "If I <b>was</b> you."</li> <li>• This is called the <b>subjunctive mood</b>, used to talk about unreal or hypothetical situations.</li> </ul>

Q. 33	<p>Select the correctly spelt word.</p> <p>a) Illuseon </p> <p>b) Illusion </p> <p>c) Illuzion </p> <p>d) Ilusion </p>
Explanation:	<p>Correct Answer: (2). Illusion</p> <ul style="list-style-type: none"> <li>• <b>Illusion</b> means a false idea or appearance.</li> </ul>

Q. 34	<p>Select the option that can be used as a one-word substitute for the given group of words.</p> <p>A room for cleaning and storing dishes and cooking utensils and for doing messy kitchen work.</p> <p>a) Dormitory </p> <p>b) Scullery </p> <p>c) Sanatorium </p> <p>d) Overlay </p>
Explanation:	<p>The correct answer is: (2) <b>Scullery</b></p> <p><b>Scullery</b> – A <b>small room</b> next to a kitchen, used for <b>cleaning and storing dishes, utensils</b>, and doing <b>messy kitchen work</b>.</p> <p>Other options:</p> <ul style="list-style-type: none"> <li>• <b>Dormitory</b> – A large bedroom for multiple people, often in hostels or boarding schools</li> <li>• <b>Sanatorium</b> – A medical facility for long-term illness, especially for tuberculosis</li> <li>• <b>Overlay</b> – To cover something with a layer; not related to rooms or kitchens</li> </ul>

Q. 35	<p>Select the most appropriate synonym of the word 'inconsistencies' to fill in the blank.</p> <p>As the engineers reviewed the data from the Mars rover, they were particularly interested in any _____ that might indicate a malfunction on the vehicle.</p> <p>a) anomalies ✓</p> <p>b) confirmations ✗</p> <p>c) transmissions ✗</p> <p>d) specifications ✗</p>
	<p><b>Correct Answer: (1) Anomalies</b></p> <p><b>Inconsistencies</b> refers to things that are not in agreement or are contradictory.</p> <p><b>Anomalies</b> are deviations from what is normal, expected, or usual. These often indicate a problem or irregularity.</p> <p><b>Explanation:</b> Other options:</p> <ul style="list-style-type: none"><li>● <b>Confirmations</b> are the act of establishing or verifying something as true or certain.</li><li>● <b>Transmissions</b> refer to the act or process of sending something from one place to another, especially signals or data.</li><li>● <b>Specifications</b> are detailed descriptions of the design and features of a product or system.</li></ul>

Q. 36	<p>Select the option that expresses the given sentence in direct speech.</p> <p>The teacher orders Mohan not to tear off pages from his note-book.</p> <p>a) The teacher says to Mohan, "Let the pages not be torn off from your notebook." <span style="color: red;">X</span></p> <p>b) The teacher says to Mohan, "Don't tear off pages from your notebook." <span style="color: green;">✓</span></p> <p>c) The teacher says to Mohan, "Mustn't tear off pages from your notebook." <span style="color: red;">X</span></p> <p>d) The teacher says to Mohan, "You shouldn't tear off pages from your notebook." <span style="color: red;">X</span></p>
Explanation:	<p>The correct answer is: (2). The teacher says to Mohan, "Don't tear off pages from your notebook."</p> <ul style="list-style-type: none"> <li>Reporting Verb: The indirect speech uses "<b>orders</b>," which often corresponds to a direct command. In direct speech, we use a reporting verb like "<b>says to</b>" followed by the actual words spoken.</li> <li>The indirect speech "<b>not to tear off</b>" indicates a negative command. In direct speech, negative commands usually start with "<b>Don't</b>."</li> <li>"<b>his note-book</b>" in indirect speech refers to Mohan's notebook and remains "<b>your notebook</b>" when the teacher is directly addressing Mohan.</li> <li>Since the reporting verb in the indirect speech <b>doesn't</b> indicate a past tense action ("<b>orders</b>," not "<b>ordered</b>"), we can assume the direct speech was also in the present tense ("says").</li> </ul>
Q. 37	<p>Select the option that can replace the underlined phrase and make the sentence grammatically correct.</p> <p>The programme on TV <u>was now showing the blurring faces of the inmates of the rehabilitation centre</u>.</p> <p>a) were now showing the blurred faces of the inmates of the rehabilitation centre. <span style="color: red;">X</span></p> <p>b) was now showing the blurred faces of the inmates of the rehabilitation centre <span style="color: green;">✓</span></p> <p>c) were now showing the blurring faces of the inmates from the rehabilitation centre <span style="color: red;">X</span></p> <p>d) was now showing the blurred faces of the inmates upon the rehabilitation centre <span style="color: red;">X</span></p>
Explanation:	<p>Correct answer Option 2: <b>was now showing the blurred faces of the inmates of the rehabilitation centre</b></p> <ul style="list-style-type: none"> <li>"Programme" is singular, so the verb should be "<b>was</b>".</li> <li>"<b>was now showing</b>" is the active voice, past continuous tense, correctly agreeing with the singular subject.</li> <li>"<b>the blurred faces</b>" is the object of the verb "showing."</li> <li>"<b>Of</b>" correctly indicates that the inmates belong to or are associated with the rehabilitation centre.</li> </ul>

Q. 38	<p>Select the most appropriate option to substitute the underlined segment in the given sentence.</p> <p>Charles Darwin is renowned for his book on evolution, 'On the Origin of Species', which <u>laid down a treasure of substantiation</u> that evolution occurs, and projected a mechanism, that is, natural selection, for how it does so.</p> <p>a) laid into a treasure of substantiation <span style="color: red;">X</span></p> <p>b) laid about a treasure of substantiation <span style="color: red;">X</span></p> <p>c) laid away a treasure of substantiation <span style="color: red;">X</span></p> <p>d) laid out a treasure of substantiation <span style="color: green;">✓</span></p>
Explanation:	<p>The correct option is: <b>Option 4: laid out a treasure of substantiation</b></p> <ul style="list-style-type: none"> <li>● The phrasal verb "lay out" means to arrange something in an organized way or to present something clearly and in detail. In this context, Darwin's book presented a wealth of evidence (<b>a "treasure of substantiation"</b>) in a clear and detailed manner to support his theory of evolution.</li> </ul>

Q. 39	<p>The following sentence has been divided into four segments. Identify the segment that contains an error.</p> <p>Mr. Surya / have no interior / motive in offering / you support.</p> <p>a) Mr. Surya <span style="color: red;">X</span></p> <p>b) motive in offering <span style="color: red;">X</span></p> <p>c) have no interior <span style="color: green;">✓</span></p> <p>d) you support. <span style="color: red;">X</span></p>
Explanation:	<p>Correct Answer : C) have no interior</p> <ul style="list-style-type: none"> <li>● "Have" should be "has" because the subject "Mr. Surya" is singular.</li> <li>● The word "interior" (meaning inside or internal) is incorrect.</li> <li>● The correct word is "ulterior", which means a hidden or secret motive.</li> </ul>

Q. 40	<p>Parts of the following sentence have been given as options. Select the option that contains an error.</p> <p>Every students in the hostel decided to travel to Delhi to witness the Republic Day parade.</p> <p>a) Republic Day Parade. </p> <p>b) to witness the </p> <p>c) decided to travel to Delhi </p> <p>d) Every students in the hostel </p>
Explanation:	<p>Correct answer option: D) Every students in the hostel.</p> <ul style="list-style-type: none"> <li>● "Every" is a singular determiner. When used before a <b>noun</b>, the noun should also be in its singular form. Therefore, "students" should be "student."</li> </ul>

Q. 41	<p>Based on the situation in the sentence, select the most appropriate idiom.</p> <p>After many years of rivalry, the two schools decided to _____ and participate in a National Event together.</p> <p>a) bell the cat </p> <p>b) bury the hatchet </p> <p>c) go cold turkey </p> <p>d) be in the doldrums </p>
Explanation:	<p>The correct answer is: (2) <b>bury the hatchet</b></p> <ul style="list-style-type: none"> <li>● "Bury the hatchet" means to end a conflict or quarrel and make peace.</li> <li>● In the sentence, the two schools had a rivalry (conflict) and now they are <b>deciding to work together</b>, so they are <b>making peace</b>.</li> </ul> <p>Other options:</p> <ul style="list-style-type: none"> <li>● <b>Bell the cat</b> – To do something dangerous or difficult.</li> <li>● <b>Go cold turkey</b> – To suddenly stop doing something addictive (like smoking).</li> <li>● <b>Be in the doldrums</b> – To feel sad, inactive, or without energy.</li> </ul>

Q. 42	<p>Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.</p> <p>A. In Bihar and Central India, in particular, every district had smelters that used local deposits of ore to produce iron which was widely used for the manufacture of implements and tools of daily use.</p> <p>B. The smelting was done by men while women worked on the bellows, pumping air that kept the charcoal burning.</p> <p>C. But iron smelting in India was extremely common till the end of the nineteenth century.</p> <p>D. Production of Wootz steel required a highly specialised technique of refining iron.</p> <p>a) ACDB </p> <p>b) DCAB </p> <p>c) BCDA </p> <p>d) CBDA </p>
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Explanation:	<p><b>Correct answer option (2): DCAB</b></p> <ul style="list-style-type: none"> <li>• D introduces the subject with a <b>specific case</b> (Wootz steel) and sets the tone of the passage by implying the complexity of iron refining.</li> <li>• C follows it logically with a <b>contrast</b>: despite complexity, smelting was <b>common</b> in India.</li> <li>• A gives <b>regional and practical evidence</b> of this common smelting.</li> <li>• B completes it with <b>details of the process and labor division</b>.</li> </ul>
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Q. 43	<p>Select the most appropriate ANTONYM of the word in brackets to fill in the blank.</p> <p>She has _____ (witty) remarks about everything.</p> <p>a) sorry </p> <p>b) whimsical </p> <p>c) unamusing </p> <p>d) woeful </p>
Explanation:	<p>The correct answer is: (3) <b>unamusing</b></p> <ul style="list-style-type: none"> <li>• <b>witty</b> means <b>clever and funny</b>.</li> <li>• <b>Unamusing</b> – Not funny (Correct antonym)</li> </ul> <p>Other options:</p> <ul style="list-style-type: none"> <li>• <b>Sorry</b> – Feeling regret</li> <li>• <b>Whimsical</b> – Playfully unusual or imaginative.</li> <li>• <b>Woeful</b> – Full of sorrow or misery</li> </ul>

Q. 44	<p>Select the most appropriate meaning of the underlined idiom.  <b>Vishnu and Vignesh are always like two peas in a pod.</b></p> <p>a) Very similar to each other ✓</p> <p>b) Smart and intelligent ✗</p> <p>c) Happy and compassionate ✗</p> <p>d) Good in every way ✗</p>
Explanation:	<p>The correct answer is: (1) <b>Very similar to each other</b>      "Like two peas in a pod" is an idiom used to describe <b>two people who are very similar in appearance, behavior, or interests</b>—just like two peas that look the same and sit together in a pod.</p>
Q. 45	<p>Select the most appropriate option to fill in the blank.      Which _____ do you usually take to reach your office?</p> <p>a) rude ✗</p> <p>b) route ✓</p> <p>c) root ✗</p> <p>d) rout ✗</p>
Explanation:	<p>The correct answer is: <b>B) route</b>      We are talking about the <b>way or path</b> someone takes to go somewhere.</p> <ul style="list-style-type: none"> <li>● A) rude – means impolite (बदतमीज)</li> <li>● B) route – <b>correct</b>, means path or way (मार्ग).</li> <li>● C) root – means part of a plant (जड़).</li> <li>● D) rout – means a big defeat or disorderly retreat (हार या भगदड़).</li> </ul>

**Q. 46**

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

People often say that the stars govern their fate but they forget the fact that success or failure is the result of ones own (1)\_\_\_\_\_. If we sow chaff, we can't reap grain; and the result or consequence of an action depends on what one does and to the extent he (2)\_\_\_\_\_ it. If we work hard, we succeed only to the extent that we work. People who think that the law of karma is (3)\_\_\_\_\_ may feel that if one is destined to get something he will always get it whether he strives for it or not. But experience tells us that reward and punishments are the direct result of our action. Honesty and hard work never go unrewarded and (4)\_\_\_\_\_ and evil deeds never go (5)\_\_\_\_\_. In fact even the law of karma, in its proper sense, means that the fruit we get is decided by whatever actions we did in the past.

Select the most appropriate option to fill in blank number 1.

- a) power
- b) incidents
- c) case
- d) actions

**Explanation:**

**Correct answer: (D) actions**

The sentence says that success or failure happens because of what a person does. So we need a word that means "what someone does."

- **actions** – means the things a person does.

Q. 47

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

People often say that the stars govern their fate but they forget the fact that success or failure is the result of ones own (1)\_\_\_\_\_. If we sow chaff, we can't reap grain; and the result or consequence of an action depends on what one does and to the extent he (2)\_\_\_\_\_ it. If we work hard, we succeed only to the extent that we work. People who think that the law of karma is (3)\_\_\_\_\_ may feel that if one is destined to get something he will always get it whether he strives for it or not. But experience tells us that reward and punishments are the direct result of our action. Honesty and hard work never go unrewarded and (4)\_\_\_\_\_ and evil deeds never go (5)\_\_\_\_\_. In fact even the law of karma, in its proper sense, means that the fruit we get is decided by whatever actions we did in the past.

Select the most appropriate option to fill in blank number 2.

a) does ✓

b) have ✗

c) create ✗

d) put ✗

Correct answer: (A) does

Explanation:

The sentence requires a verb that parallels "does." The pronoun "it" refers back to "an action." Therefore, "**does it**" maintains the grammatical structure and meaning, indicating the degree to which someone performs an action.

Q. 48

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

People often say that the stars govern their fate but they forget the fact that success or failure is the result of ones own (1)\_\_\_\_\_. If we sow chaff, we can't reap grain; and the result or consequence of an action depends on what one does and to the extent he (2)\_\_\_\_\_ it. If we work hard, we succeed only to the extent that we work. People who think that the law of karma is (3)\_\_\_\_\_ may feel that if one is destined to get something he will always get it whether he strives for it or not. But experience tells us that reward and punishments are the direct result of our action. Honesty and hard work never go unrewarded and (4)\_\_\_\_\_ and evil deeds never go (5)\_\_\_\_\_. In fact even the law of karma, in its proper sense, means that the fruit we get is decided by whatever actions we did in the past.

Select the most appropriate option to fill in blank number 3.

- a) supreme ✓
- b) greatest ✗
- c) more ✗
- d) most ✗

Correct answer: (A) supreme

Explanation:

- We need a word that shows **how powerful or important** people think the law of karma is.
- **supreme** – means highest or most powerful.

Q. 49

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

People often say that the stars govern their fate but they forget the fact that success or failure is the result of ones own (1)\_\_\_\_\_. If we sow chaff, we can't reap grain; and the result or consequence of an action depends on what one does and to the extent he (2)\_\_\_\_\_ it. If we work hard, we succeed only to the extent that we work. People who think that the law of karma is (3)\_\_\_\_\_ may feel that if one is destined to get something he will always get it whether he strives for it or not. But experience tells us that reward and punishments are the direct result of our action. Honesty and hard work never go unrewarded and (4)\_\_\_\_\_ and evil deeds never go (5)\_\_\_\_\_. In fact even the law of karma, in its proper sense, means that the fruit we get is decided by whatever actions we did in the past.

Select the most appropriate option to fill in blank number 4.

- a) horribly
- b) badly
- c) dishonesty
- d) fairness

Correct answer: (C) dishonesty

Explanation:

- Here, the sentence is comparing "honesty and hard work" with something **bad**. So, we need a word that is the opposite of honesty.
- **dishonesty** – It is a noun and is the opposite of honesty.

Q. 50

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

People often say that the stars govern their fate but they forget the fact that success or failure is the result of ones own (1)\_\_\_\_\_. If we sow chaff, we can't reap grain; and the result or consequence of an action depends on what one does and to the extent he (2)\_\_\_\_\_ it. If we work hard, we succeed only to the extent that we work. People who think that the law of karma is (3)\_\_\_\_\_ may feel that if one is destined to get something he will always get it whether he strives for it or not. But experience tells us that reward and punishments are the direct result of our action. Honesty and hard work never go unrewarded and (4)\_\_\_\_\_ and evil deeds never go (5)\_\_\_\_\_. In fact even the law of karma, in its proper sense, means that the fruit we get is decided by whatever actions we did in the past.

Select the most appropriate option to fill in blank number 5.

a) unpunished ✓

b) vile ✗

c) punished ✗

d) waste ✗

Correct answer: (A) unpunished

This sentence shows a contrast:

Honesty → gets reward

Dishonesty → should get punishment

- So we need a word that means "do not escape punishment."
- **unpunished** – means "not punished".

Explanation:

Q. 51	<p>Which one of the following is not correct about the Indian Independence Act, 1947?</p> <p>a) The Bill for the Indian Independence Act was introduced in Parliament on July 4 and received the Royal Assent on July 18, 1947. <span style="color: red;">X</span></p> <p>b) The Act of 1947 laid down the basic framework of the Indian Constitution. <span style="color: green;">✓</span></p> <p>c) The Act provided for the establishment of two independent Dominions to be known as India and Pakistan. <span style="color: red;">X</span></p> <p>d) The Act empowered the Constituent Assembly of each Dominion to have unlimited power to frame and adopt any constitution. <span style="color: red;">X</span></p>
<b>Explanation:</b>	<p>Correct answer = Option 2 (Act of 1947 laid down the basic framework of the Indian Constitution)</p> <p><b>Indian Independence Act (1947):</b></p> <ul style="list-style-type: none"> <li>• The <b>Mountbatten Plan</b> (also known as the June 3rd Plan) laid the groundwork for the Act.</li> <li>• Introduced by British Prime Minister <b>Clement Attlee</b> in the House of Commons on <b>4 July 1947</b>.</li> <li>• Received Royal Assent (final approval) on <b>18 July 1947</b>.</li> <li>• The Act came into effect on <b>15 August 1947</b>.</li> <li>• The Indian Independence Act, 1947 was primarily a political and legal document meant to end British rule and divide British India.</li> <li>• The Act created two separate and sovereign states: <ul style="list-style-type: none"> <li>◦ <b>India</b></li> <li>◦ <b>Pakistan (including what is now Bangladesh, then East Pakistan)</b></li> </ul> </li> <li>• Each dominion's Constituent Assembly would function as a sovereign body.</li> <li>• <b>Territorial Division =</b> <ul style="list-style-type: none"> <li>◦ It outlined the initial territories of the two Dominions and made provisions for the division of the provinces of Bengal and Punjab.</li> <li>◦ The boundary between the two new countries was to be determined by a boundary commission led by Sir Cyril Radcliffe.</li> </ul> </li> </ul>

Q. 52	<p><b>Which are the two major branches of the southwest monsoon in India?</b></p> <p>a) The Himalayan Mountain branch and the Gulf of Mannar branch <span style="color: red;">X</span></p> <p>b) The Arabian Sea branch and the Tibetan plateau branch <span style="color: red;">X</span></p> <p>c) The Tibetan plateau branch and the Bay of Bengal branch <span style="color: red;">X</span></p> <p>d) The Arabian Sea branch and the Bay of Bengal branch <span style="color: green;">✓</span></p>
<b>Explanation:</b>	<p>Correct answer = Option 4 (The Arabian Sea branch and the Bay of Bengal branch)</p> <p><b><u>Southwest Monsoon:</u></b></p> <ul style="list-style-type: none"> <li>• The Southwest Monsoon is the primary rainy season in the Indian subcontinent.</li> <li>• Onset Early June (first hits Kerala coast)</li> <li>• Begins in September, completes by October</li> <li>• The winds blow from the southwest direction (i.e., from the Indian Ocean and Arabian Sea toward the Indian subcontinent).</li> <li>• Caused by a shift in global wind patterns due to differential heating of land and ocean.</li> </ul> <p><b><u>Arabian Sea Branch :</u></b></p> <ul style="list-style-type: none"> <li>• This branch hits the Western Ghats of Kerala first (around June 1).</li> <li>• It then moves northwards along the western coast of India — covering Karnataka, Goa, Maharashtra, and Gujarat.</li> <li>• Heavy rainfall on the windward side of the Western Ghats and the western coastal plains.</li> <li>• Orographic rainfall caused by the mountains along the coast.</li> <li>• Rain shadow effect on the leeward side, leading to drier conditions in areas like the Deccan Plateau and parts of Tamil Nadu.</li> </ul> <p><b><u>Bay of Bengal Branch:</u></b></p> <ul style="list-style-type: none"> <li>• It runs along the coasts of Myanmar and Southeast Bangladesh.</li> <li>• This branch moves towards the northeast of India — especially West Bengal and the northeastern states.</li> <li>• It travels westward along the Gangetic plains, bringing rain to Bihar, Uttar Pradesh, and Delhi.</li> <li>• The Bay of Bengal branch contributes approximately 35% to the total monsoon rainfall in India, making it significant, though generally weaker than the Arabian Sea branch (which contributes about 65%).</li> </ul> <p><b><u>Tibetan Plateau =</u></b></p> <ul style="list-style-type: none"> <li>• The Tibetan Plateau plays a critical role in the formation and strength of the Indian monsoon.</li> <li>• It is the world's highest and largest plateau, often called the "<b>Roof of the World</b>".</li> <li>• Located north of the Himalayas, spanning China, India, Nepal, and Bhutan.</li> <li>• <b>Average elevation</b> = over 4,500 meters (14,800 feet).</li> </ul>

Q. 53	<p>Who among the following leaders founded the women's wing of Congress in 1940 ?</p> <p>a) Aruna Asaf Ali </p> <p>b) Sucheta Kripalani </p> <p>c) Lakshmi Sahgal </p> <p>d) Sarojini Naidu </p>
<b>Explanation:</b>	<p>Correct answer = Option 2 (Sucheta Kripalani)</p> <ul style="list-style-type: none"><li>• <b>Aruna Asaf Ali =</b><ul style="list-style-type: none"><li>○ Known as the "<b>Grand Old Lady</b>" of the Independence Movement.</li><li>○ Hoisting the Indian flag at Gowalia Tank Maidan ,Bombay during the launch of the <b>Quit India Movement in 1942</b>.</li></ul></li><li>• <b>Sucheta Kripalani =</b><ul style="list-style-type: none"><li>○ Founded the <b>Women's Wing of Congress</b> in 1940.</li><li>○ She worked closely with Mahatma Gandhi during the Quit India Movement (1942) and later in riot-relief efforts during Partition.</li><li>○ India's first woman Chief Minister (Uttar Pradesh, 1963–1967).</li></ul></li><li>• <b>Lakshmi Sahgal (often written Lakshmi Sangal) =</b><ul style="list-style-type: none"><li>○ A revolutionary leader who joined Subhas Chandra Bose's Indian National Army (INA).</li><li>○ Commanded the Rani of Jhansi Regiment, the first all-women fighting unit in modern military history.</li><li>○ A symbol of women's empowerment in armed resistance against British rule.</li></ul></li><li>• <b>Sarojini Naidu =</b><ul style="list-style-type: none"><li>○ Known as the "<b>Nightingale of India</b>" due to her poetry by <b>Mahatma Gandhi</b>.</li><li>○ The first Indian woman <b>president of the Indian National Congress (1925)</b>.</li><li>○ Also played a role in the Salt Satyagraha and led civil disobedience campaigns.</li></ul></li></ul>

Q. 54	<p>Reptilia include animals which are cold-blooded, have scales and breathe through lungs. These include:</p> <p>a) Fishes and Snakes <input checked="" type="checkbox"/></p> <p>b) Frogs and Snakes <input checked="" type="checkbox"/></p> <p>c) Crow and Fishes <input checked="" type="checkbox"/></p> <p>d) Snakes and Turtles <input checked="" type="checkbox"/></p>
Explanation:	<p>Correct answer = Option 4 (Snakes and Turtles)</p> <p><b>Reptilia (Reptiles):</b></p> <ul style="list-style-type: none"><li>• <b>Cold-blooded (Ectothermic)</b> = Reptiles rely on external sources of heat to regulate their body temperature.</li><li>• <b>Scales or Scutes</b> = Their skin is covered in scales or bony plates called scutes, made of keratin (the same protein in our nails).</li><li>• <b>Breathe through Lungs</b> = All reptiles breathe through lungs, even those that live in aquatic environments like turtles and crocodiles.</li><li>• <b>Vertebrates</b> = They possess a backbone.</li><li>• Have a heart (<b>Three-Chambered Heart</b>) with two atria and one partially divided ventricle. Crocodiles are an exception with a four-chambered heart, similar to birds and mammals.</li><li>• Reptiles were the first vertebrates to fully adapt to life on land.</li><li>• <b>Reproduce via Eggs or Live Birth</b> = Most reptiles lay shelled eggs, though some, like certain snakes, give birth to live young.</li></ul>

Q. 55	<p>Shruti Sadolikar is an Indian classical singer of the Khayal genre of which Gharana?</p> <p>a) Rampur-Sahaswan Gharana <span style="color: red;">X</span></p> <p>b) Jaipur-Atrauli Gharana <span style="color: green;">✓</span></p> <p>c) Mewati Gharana <span style="color: red;">X</span></p> <p>d) Patiala Gharana <span style="color: red;">X</span></p>
Explanation:	<p>Correct answer = Option 2</p> <p><b>Shruti Sadolikar =</b></p> <ul style="list-style-type: none"> <li>• She is a renowned Indian classical vocalist specializing in the <b>Khayal genre</b>.</li> <li>• Belongs to the <b>Jaipur-Atrauli Gharana</b>, known for its complex and intricate raga structures.</li> </ul> <p><b>Gharanas:</b></p> <ul style="list-style-type: none"> <li>• <b>Jaipur-Atrauli Gharana =</b> <ul style="list-style-type: none"> <li>o <b>Founder</b> = Ustad Alladiya Khan</li> <li>o Complex ragas, rare compositions, intricate taan patterns.</li> <li>o <b>Exponents</b> = Kesarbai Kerkar ,Mallikarjun Mansur, Ashwini Bhide-Deshpande, Shruti Sadolikar, Manik Bhide</li> </ul> </li> <li>• <b>Rampur-Sahaswan Gharana =</b> <ul style="list-style-type: none"> <li>o <b>Founder</b> = Ustad Inayat Hussain Khan</li> <li>o Clear enunciation of words, medium to slow tempo khayals, and bol-baant.</li> <li>o <b>Exponents</b> = Ustad Mushtaq Hussain Khan, Ghulam Mustafa Khan, Naina Devi, Ustad Rashid Khan, Nazakat &amp; Salamat Ali Khan</li> </ul> </li> <li>• <b>Mewati Gharana =</b> <ul style="list-style-type: none"> <li>o <b>Founder</b> = Ustad Ghagge Nazir Khan</li> <li>o Emphasis on bhakti rasa, emotional expression, and blend of classical with devotional music.</li> <li>o <b>Exponents</b> = Pandit Jasraj, Anup Jalota, Rattan Mohan Sharma, Sanjeev Abhyankar</li> </ul> </li> <li>• <b>Patiala Gharana =</b> <ul style="list-style-type: none"> <li>o <b>Founder</b> = Ustad Fateh Ali Khan and Ustad Ali Baksh</li> <li>o Fast, intricate taans, sargams, and embellishments.</li> </ul> </li> <li>• <b>Exponents</b> = Ustad Bade Ghulam Ali Khan, Ustad Amanat Ali Khan &amp; Ustad Fateh Ali Khan, Pandit Ajoy Chakrabarty, Raza Ali Khan, Shafqat Amanat Ali</li> </ul>

<p><b>Q. 56</b></p> <p>With reference to Indian history, consider the following statements:</p> <ol style="list-style-type: none"> <li>1. The first Mongol invasion of India happened during the reign of Jalal-ud-din Khalji.</li> <li>2. During the reign of Ala-ud-din Khalji, one Mongol assault marched up to Delhi and besieged the city.</li> <li>3. Muhammad-bin-Tughlaq temporarily lost portions of north west of his kingdom to Mongols.</li> </ol> <p>Which of the statements given above is/are correct?</p> <p>a) 1 and 2 <input checked="" type="checkbox"/> ✗</p> <p>b) 2 only <input checked="" type="checkbox"/> ✗</p> <p>c) 1 and 3 <input checked="" type="checkbox"/> ✗</p> <p>d) 3 only <input checked="" type="checkbox"/> ✗</p>	<p>Correct answer = Option 2 (2 only)</p> <p><b>Statement I is incorrect</b> = The first Mongol invasion of India took place in the reign of <b>Sultan Shams-ud-din Iltutmish</b>.</p> <p><b>Statement II is correct</b> =</p> <ul style="list-style-type: none"> <li>• During the reign of <b>Ala-ud-din Khalji</b>, one Mongol assault marched up to Delhi and besieged the city.</li> <li>• In 1303, a massive Mongol force led by <b>Taraghai</b> reached Delhi and besieged the city.</li> <li>• Ala-ud-din took refuge in Siri Fort, and although Delhi wasn't captured, it was a serious threat.</li> <li>• <b>Barani</b>, a contemporary historian at that time attributed this "<b>marvel</b>" to the prayers of the Sufi mystic <b>Shaikh Nizamuddin Auliya</b>.</li> </ul> <p><b>Statement III is incorrect</b> =</p> <ul style="list-style-type: none"> <li>• In 1327 the Chagatai Mongols under Tarmashirin, who had sent envoys to Delhi to negotiate peace the previous year sacked the frontier towns of Lamghan and Multan and besieged Delhi.</li> <li>• Muhammad bin Tughluq asked the Ilkhan Abu Sa'id to form an alliance against Tarmashirin.</li> <li>• The Tughlaq ruler paid a large ransom to spare his Sultanate from further ravages.</li> <li>• In fact, earlier rulers like Ghiyasuddin Balban and Ala-ud-din Khalji dealt with the Mongol menace more directly.</li> </ul>
<p><b>Explanation:</b></p>	

Q. 57	<p>Article 324 of the Constitution of India provides for the establishment of which one of the following institutions in India?</p> <p>a) The National Human Rights Commission </p> <p>b) The Central Vigilance Commission </p> <p>c) The Central Information Commission </p> <p>d) The Election Commission of India </p>
<p><b>Explanation:</b></p> <p>Correct answer = Option 4 (The Election Commission of India)</p> <ul style="list-style-type: none"><li>• <b>The National Human Rights Commission (NHRC) =</b><ul style="list-style-type: none"><li>○ Established under <b>Protection of Human Rights Act (1993)</b>.</li><li>○ <b>Statutory body.</b></li><li>○ Protects and promotes human rights</li><li>○ Enquires into human rights violations by public servants</li></ul></li><li>• <b>The Central Vigilance Commission (CVC) =</b><ul style="list-style-type: none"><li>○ <b>Established Under</b><ul style="list-style-type: none"><li>▪ Initially created by an <b>executive resolution in 1964</b></li><li>▪ Given statutory status by the <b>CVC Act, 2003</b>.</li></ul></li><li>○ <b>Statutory body.</b></li></ul></li><li>• <b>The Central Information Commission (CIC) =</b><ul style="list-style-type: none"><li>○ Established under <b>Right to Information (RTI) Act, 2005</b>.</li><li>○ <b>Statutory body</b></li><li>○ Enforces the Right to Information</li><li>○ Addresses grievances related to denial of information</li></ul></li><li>• <b>The Election Commission of India =</b><ul style="list-style-type: none"><li>○ <b>Article 324</b> of the Constitution of India.</li><li>○ Constitutional body.</li><li>○ <b>Conducts elections to</b><ul style="list-style-type: none"><li>▪ Parliament</li><li>▪ State Legislatures</li><li>▪ President and Vice-President</li></ul></li><li>○ Ensures free and fair elections.</li><li>○ <b>Article 324 =</b><ul style="list-style-type: none"><li>▪ Provides for the establishment and powers of the Election Commission of India.</li><li>▪ It vests the superintendence, direction, and control of elections in the Election Commission.</li></ul></li></ul></li></ul>	

Q. 58	<p>The Gulf of Khambhat, the Gulf of Kutch, and Sundarbans region provide ideal conditions for utilizing _____ energy in India.</p> <p>a) Tidal ✓</p> <p>b) Wind ✗</p> <p>c) Thermal ✗</p> <p>d) Solar ✗</p>
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Correct answer = Option 1 (Tidal)

**Tidal Energy =**

- Tidal Energy is a type of power generated by the natural rise and fall of tides caused by the gravitational interaction of the Earth, Sun, and Moon.
- It requires coastal regions with high tidal range (the difference between high tide and low tide) or strong tidal currents.
- Tidal Energy can change because of how the land is shaped, which can make tides higher.
- It is a renewable and predictable energy source.
- India has a lot of potential for tidal energy because it has many coastlines like in places like the Gulf of Cambay, Gulf of Kachchh, and the Ganges Delta in the Sundarbans.
- Tides are the rising and falling of water in places like bays and harbors. This movement is caused by the flow of water going in (flood) and out (ebb).
- **Gulf of Khambhat (Cambay) = Gujarat**
  - **Tidal range = Up to 10 meters** (one of the highest in India).
  - Narrow funnel-like shape of the gulf intensifies the tidal flow.
  - Considered suitable for tidal barrage projects.
- **Gulf of Kutch = Gujarat**
  - High tidal range (6–8 meters).
  - Strong tidal currents due to its geographical narrowing.
  - Identified as a potential site for tidal current energy projects.
- **Sundarbans = West Bengal**
  - Located in the delta region of the Ganga-Brahmaputra.
  - Regular tidal activity due to proximity to the Bay of Bengal.
  - Large network of estuaries and creeks makes it favorable for tidal power generation.

**Explanation:**

Q. 59	<p>Which of the following statements regarding atoms is correct?</p> <p>a) Atoms are not electrically neutral. </p> <p>b) An atom does not contain any positive charge. </p> <p>c) Atoms as a whole are electrically neutral. </p> <p>d) Atoms are partially electrically neutral. </p>
Explanation:	<p>Correct answer = Options 3 (Atoms as a whole are electrically neutral)</p> <ul style="list-style-type: none"><li>• <b>Electrical Neutrality =</b><ul style="list-style-type: none"><li>o In a neutral atom, the number of protons (positive charges) is equal to the number of electrons (negative charges).</li><li>o These equal and opposite charges cancel each other out, resulting in an overall net charge of zero for the atom.</li></ul></li><li>• <b>Protons =</b><ul style="list-style-type: none"><li>o Positively charged particles located in the nucleus (the atom's central core).</li><li>o Discovered by Eugen Goldstein</li></ul></li><li>• <b>Neutrons =</b><ul style="list-style-type: none"><li>o Neutrally charged particles (no charge) also located in the nucleus.</li><li>o Discovered by James Chadwick</li></ul></li><li>• <b>Electrons =</b><ul style="list-style-type: none"><li>o Negatively charged particles that orbit the nucleus in specific energy levels or shells.</li><li>o The electron was the first subatomic particle to be discovered. J.J. Thomson</li></ul></li><li>• <b>Neutral atom =</b> protons = electrons</li><li>• <b>Positive ion (cation) =</b> protons &gt; electrons</li><li>• <b>Negative ion (anion) =</b> electrons &gt; protons</li><li>• <b>If an atom gains electrons =</b> becomes negatively charged (anion)</li><li>• <b>If it loses electrons =</b> becomes positively charged (cation)</li></ul>

Q. 60	<p>When did depressed classes get the reserved seats in provincial and central legislative councils, but they were to be voted in by the General electorate?</p> <p>a) September 1930 <input checked="" type="checkbox"/> X</p> <p>b) November 1932 <input checked="" type="checkbox"/> X</p> <p>c) November 1930 <input checked="" type="checkbox"/> X</p> <p>d) September 1932 <input checked="" type="checkbox"/> ✓</p>
<b>Explanation:</b>	<p>Correct answer = Option 4 (September 1932)</p> <p><b>Poona Pact =</b></p> <ul style="list-style-type: none"><li>• Signed on September 24, 1932, in Yerwada Central Jail, Pune between Mahatma Gandhi and Dr. B.R. Ambedkar.</li><li>• Joint electorates with reserved seats for the Depressed Classes in provincial and central legislative councils.</li><li>• For reserved seats, Depressed Class voters would elect a panel of four candidates for the general election (initially for ten years).</li><li>• Guarantee against discrimination in local bodies and public service appointments.</li><li>• Rejected separate electorates, increased reserved seats within a joint electorate, and laid the foundation for affirmative action.</li><li>• It increased the number of reserved seats for the depressed classes in provincial legislatures from 71 to 148, ensuring representation while maintaining joint electorates.</li><li>• The British introduced '<b>The Communal Award</b>' in 1932, which was seen as one of the divide-and-rule tools in India.</li><li>• The Poona Pact allocated twice as many reserved seats (147) to the lower classes in the assembly as the Communal Award had allowed.</li><li>• The pact included provisions for increased educational grants and fair representation in public services for the depressed classes.</li></ul>

Q. 61	<p>What is the term used to describe the process by which water from oceans, lakes and rivers is converted into vapour and rises into the atmosphere?</p> <p>a) Evaporation ✓</p> <p>b) Condensation ✗</p> <p>c) Precipitation ✗</p> <p>d) Transpiration ✗</p>
Explanation:	<p>Correct answer = Option 1 (Evaporation)</p> <ul style="list-style-type: none"><li>● <b>Evaporation</b> =<ul style="list-style-type: none"><li>○ Evaporation is the process by which liquid water from oceans, lakes, rivers, or other surfaces changes into water vapour (gas) due to the heat from the Sun.</li><li>○ This water vapour rises into the atmosphere and plays a key role in the water cycle.</li></ul></li><li>● <b>Water Cycle</b> = Cycle that involves the continuous circulation of water in the Earth-atmosphere system.<ul style="list-style-type: none"><li>○ <b>Stages</b> =<ul style="list-style-type: none"><li>▪ <b>Evaporation</b> = Water turns into vapour and rises.</li><li>▪ <b>Condensation</b> = Vapour cools and forms clouds.</li><li>▪ <b>Precipitation</b> = Water falls back to Earth (rain, snow, etc.).</li><li>▪ <b>Collection</b> = Water gathers in oceans, lakes, rivers.</li><li>▪ <b>Runoff</b> = Quantity of water discharged in surface streams.</li></ul></li><li>● <b>Transpiration</b> = Water vapour released from plants (mainly leaves) into the atmosphere.</li><li>● The total runoff is equal to the total precipitation less the losses caused by evapotranspiration (loss to the atmosphere from soil surfaces and plant leaves)</li><li>● <b>Infiltration</b> = Rainwater gets absorbed into the ground through the process of infiltration.</li><li>● The water cycle is also an integral part of other biogeochemical cycles.</li></ul></li></ul>

<p><b>Q. 62</b></p> <p>Which musical instrument is played by Yella Venkateswara Rao, an Indian classical musician and percussionist?</p> <p>a) Mridangam ✓</p> <p>b) Nadaswaran ✗</p> <p>c) Pakhawaj ✗</p> <p>d) Ghatam ✗</p>	<p>Correct answer = Option 1(Mridangam)</p> <p><b>Mridangam (Instrument played by Yella Venkateswara Rao) -</b></p> <ul style="list-style-type: none"> <li>• <b>Type</b> = South Indian double-headed drum (primary percussion in Carnatic music).</li> <li>• <b>Material</b> = Jackfruit wood, leather drum heads with a black tuning spot.</li> <li>• Played with Hands (no sticks).</li> <li>• <b>Exponents</b> = Yella Venkateswara Rao, Palghat Mani Iyer, Umayalpuram K. Sivaraman, Trichy Sankaran, Karaikudi Mani</li> </ul> <p><b>Nadaswaram =</b></p> <ul style="list-style-type: none"> <li>• <b>Type</b> = South Indian classical wind instrument (double-reed).</li> <li>• <b>Material</b> = Wood, with a metal bell at the end.</li> <li>• Loud and auspicious sound used in temple and wedding ceremonies.</li> <li>• <b>Exponents</b> = T.N. Rajarathinam Pillai, Sheik Chinna Moulana, Kalakkad Ramanarayana Iyer, Namagiripettai Krishnan</li> </ul> <p><b>Pakhawaj =</b></p> <ul style="list-style-type: none"> <li>• <b>Type</b> = North Indian double-headed drum (ancestor of the tabla).</li> <li>• <b>Material</b> = Wood body, leatherheads with tuning paste.</li> <li>• Deep, powerful sound more resonant than the tabla.</li> <li>• <b>Exponents</b> = Raja Chatrapati Singh, Purushottam Das, Bhagwan Das Kabra, Pandit Mohan Shyam Sharma</li> </ul> <p><b>Ghatam =</b></p> <ul style="list-style-type: none"> <li>• <b>Type</b> = South Indian clay pot percussion instrument.</li> <li>• <b>Material</b> = Clay, sometimes mixed with brass or copper filings.</li> <li>• Played with Fingers, palms, and heels of the hand.</li> <li>• <b>Exponents</b> = Vikku Vinayakram (The God of Ghatam), Suresh Vaidyanathan, Tripunithura N. Radhakrishnan</li> </ul>
<p><b>Explanation:</b></p>	

Q. 63	<p>Which revolution followed the Green Revolution in India, focusing on increasing the production of fruits and vegetables?</p> <p>a) White Revolution </p> <p>b) Blue Revolution </p> <p>c) Yellow Revolution </p> <p>d) Golden Revolution </p>
Explanation:	<p>Correct answer = Option 4 (Golden Revolution)</p> <p><b>Green Revolution =</b></p> <ul style="list-style-type: none"> <li>• Green Revolution refers to increase food grain production as a consequence of the introduction of high yielding varieties of wheat as well as of rice and use of fertilizers, modern machines and irrigation.</li> <li>• <b>Chidambaram Subramanyam</b> has been referred to as the political father of Green revolution or political architect of green revolution in India.</li> <li>• <b>Dr Norman Borlaug</b> is known as the father of the Green Revolution.</li> <li>• <b>Dr M S Swaminathan</b> is known as the father of Green revolution in India.</li> <li>• The Green revolution started in India during the <b>third five year plan</b>.</li> </ul> <p><b>Blue Revolution =</b></p> <ul style="list-style-type: none"> <li>• It is also known as the <b>Neel Kranti mission</b>.</li> <li>• It refers to the growth of aquaculture production.</li> <li>• It was launched in India during the <b>seventh five year plan</b> (1985-1991) the government sponsored the fish farmers Development Agency.</li> <li>• <b>Dr Arun Kishnan and Hiralal Chaudhari</b> are known as father of Blue revolution in India.</li> <li>• India became the second-largest fish producer globally.</li> </ul> <p><b>Yellow Revolution =</b></p> <ul style="list-style-type: none"> <li>• Oilseed production, especially mustard, sunflower, soybean, and groundnut in 1986.</li> <li>• The National Mission on oilseeds and palm oil was implemented by the government during the 12th Five Year Plan.</li> <li>• <b>Sam Pitroda</b> is known as the father of the yellow revolution in India.</li> </ul> <p><b>Golden Revolution =</b></p> <ul style="list-style-type: none"> <li>• Fruits, vegetables, honey, horticulture, floriculture, and spices.</li> <li>• <b>Dr. K.L. Chadha</b> is the father of Golden Revolution.</li> <li>• Expansion of horticulture production and related infrastructure.</li> <li>• Promotion of fruit and vegetable exports.</li> <li>• Emphasis on honey and bee-keeping.</li> <li>• <b>CDP-SURAKSHA Scheme (System for Unified Resource Allocation , Knowledge , and Secure Horticulture Assistance )</b> introduced by the Central government to disburse subsidies to horticulture farmers under the <b>Cluster Development Programme (CDP)</b>.</li> </ul>

Q. 64	<p><b>What is a primary deficit?</b></p> <p>a) Budget deficit minus capital receipts <span style="color: red;">X</span></p> <p>b) Revenue deficit plus capital expenditure <span style="color: red;">X</span></p> <p>c) Total deficit plus interest payments <span style="color: red;">X</span></p> <p>d) Total deficit minus interest payments <span style="color: green;">✓</span></p>
<p><b>Explanation:</b></p> <p>Correct answer = Option 4 (Total deficit minus interest payments)</p> <p><b>Primary Deficit =</b></p> <ul style="list-style-type: none"><li>• Primary Deficit refers to the fiscal deficit of the government excluding interest payments on previous borrowings.</li><li>• <b>Primary Deficit</b> = Fiscal Deficit – Interest Payments</li><li>• <b>Net Primary deficit</b> = Fiscal deficit + Interest received – Interest payments</li></ul> <p><b>Fiscal Deficit =</b></p> <ul style="list-style-type: none"><li>• Fiscal deficit is defined as excess of total expenditure over total receipts excluding borrowings during a fiscal year.</li><li>• <b>Fiscal deficit</b> = Total budget expenditure – Total budget receipts excluding borrowings</li><li>• It is an indicator of the increase in future liabilities of the government on interest payment and loan repayment.</li></ul> <p><b>Interest Payments</b> = These are the payments the government makes on its past borrowings.</p> <p><b>Revenue Deficit =</b></p> <ul style="list-style-type: none"><li>• It refers to the excess of total revenue expenditure of the government over its total revenue receipts.</li><li>• <b>Revenue deficit</b> = Total Revenue expenditure – Total Revenue receipts</li></ul>	

Q. 65	<p>Narayan Guru, a social reformer from Ezhava caste and who propagated an anti-caste movement, was born in which of the following states of India?</p> <p>a) Karnataka </p> <p>b) Kerala </p> <p>c) Andhra Pradesh </p> <p>d) Tamil Nadu </p>
Explanation:	<p>Correct answer = Option 2 (Kerala)</p> <p><b>Narayana Guru =</b></p> <ul style="list-style-type: none"><li>• Born on August 20, 1855</li><li>• <b>Birthplace</b> = Chempazhanthy, near Thiruvananthapuram, in present-day Kerala.</li><li>• Born into the Ezhava community, which was considered a "lower" caste under the rigid caste system.</li><li>• Propagated equality, non-violence, and social justice.</li><li>• Advocated "<b>One caste, one religion, one God for all</b>".</li><li>• Opened temples to all castes, including the famous <b>Aruvippuram Shiva Temple</b> in 1888.</li><li>• Strongly opposed <b>Brahmanical dominance and untouchability</b>.</li><li>• Inspired movements like the <b>Vaikom Satyagraha</b> and influenced reformers like <b>Mahatma Gandhi</b> and <b>Sree Narayana Dharma Paripalana (SNP) Yogam</b>.</li><li>• Led a powerful anti-caste movement; emphasized education, spiritual upliftment, and social equality</li></ul>

Q. 66	<p>The name of the strait between the Pacific and Arctic oceans, separating the Chukchi Peninsula of the Russian Far East from the Seward Peninsula of Alaska, is the :</p> <p>a) Davis Strait  b) Florida Strait  c) Bering Strait  d) Messina Strait </p>
Explanation:	<p>Correct answer = Option 3 (Bering Strait)</p> <ul style="list-style-type: none"><li>● <b>Davis Strait</b> =<ul style="list-style-type: none"><li>○ Located between Baffin Island (Canada) and Greenland.</li><li>○ Connects the Labrador Sea (part of the North Atlantic Ocean) to Baffin Bay (part of the Arctic Ocean).</li><li>○ Named after John Davis, an English explorer who explored the area in the 16th century.</li><li>○ Known for its strong currents and icebergs.</li></ul></li><li>● <b>Florida Strait</b> =<ul style="list-style-type: none"><li>○ Located between the <b>Florida Keys (USA)</b> and <b>Cuba</b>.</li><li>○ Connects the <b>Gulf of Mexico</b> to the <b>Atlantic Ocean</b>.</li><li>○ Major shipping lane and part of the Gulf Stream current system.</li><li>○ Frequently crossed by migrants and refugees from Cuba.</li></ul></li><li>● <b>Bering Strait</b> =<ul style="list-style-type: none"><li>○ Located between Russia (Chukchi Peninsula) and Alaska, USA (Seward Peninsula).</li><li>○ The Bering Sea (Pacific Ocean) to the Chukchi Sea (Arctic Ocean).</li><li>○ Separates Asia from North America.</li><li>○ <b>Contains the Diomede Islands</b> =<ul style="list-style-type: none"><li>▪ Big Diomede (Russia)</li><li>▪ Little Diomede (USA)</li></ul></li><li>○ The International Date Line passes between the islands.</li></ul></li><li>● <b>Messina Strait</b> =<ul style="list-style-type: none"><li>○ Located between the eastern tip of Sicily and the southern tip of mainland Italy.</li><li>○ Connect the Tyrrhenian Sea with the Ionian Sea (both part of the Mediterranean Sea).</li></ul></li></ul>

Q. 67	<p>Which of the following statement(s) is/are INCORRECT vis-à-vis Fundamental Duties?</p> <p>1) The 44th amendment Act introduced Fundamental duties in the Constitution.</p> <p>2) Fundamental Duties were expanded by the 86th amendment act.</p> <p>3) Article 51A (a) entails respect for its ideals and institutions, national flag and the national anthem.</p> <p>4) Fundamental Duty obliges parents to provide opportunities for education to their child between 6-14 years of age</p> <p>a) Only 1 ✓</p> <p>b) 2 and 3 ✗</p> <p>c) 2 and 4 ✗</p> <p>d) Only 3 ✗</p>
Explanation:	<p>Correct answer = Option 1 (1)</p> <p><b>Statement I is incorrect</b> = The 44th Amendment Act introduced Fundamental Duties in the Constitution.</p> <ul style="list-style-type: none"> <li>The 42nd Amendment Act, 1976, not the 44th, introduced Fundamental Duties in the Constitution.</li> <li>It added Article 51A and Part IVA to the Constitution.</li> </ul> <p><b>Statement II is correct</b> = Fundamental Duties were expanded by the 86th Amendment Act.</p> <ul style="list-style-type: none"> <li>The <b>86th Amendment Act of 2002</b> added a new Fundamental Duty, <b>Article 51A (k)</b>, which obliges parents or guardians to provide opportunities for education to their child or ward between the age of <b>six to fourteen years</b>.</li> </ul> <p><b>Statement III is correct</b> = Article 51A (a) entails respect for its ideals and institutions, national flag and the national anthem.</p> <ul style="list-style-type: none"> <li><b>Article 51A (a)</b> of the Constitution states that it shall be the duty of every citizen of India to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem.</li> </ul> <p><b>Statement IV is correct</b> = Fundamental Duty obliges parents to provide opportunities for education to their child between 6-14 years of age.</p> <p><b>Fundamental Duties =</b></p> <ul style="list-style-type: none"> <li>Introduced by the 42nd Constitutional Amendment Act, 1976 during Indira Gandhi's Emergency period.</li> <li>Taken from <b>Russia</b>.</li> <li><b>The Swaran Singh Committee (1976)</b> recommended adding them.</li> <li>Inserted as <b>Part IVA, Article 51A</b> of the Constitution.</li> </ul>

Q. 68

Who among the following is one of the co-authors of the book, 'Cracking The Code : My Journey in Bollywood' ?

- a) Harshvardhan Kapoor
- b) Nawazuddin Siddique
- c) Ayushmann Khurrana
- d) Rajkumar Rao

Correct answer = Option 3 (Ayushmann Khurrana)

- **Cracking The Code: My Journey in Bollywood =**
  - An autobiographical account co-authored by **Ayushmann Khurrana** and his wife, **Tahira Kashyap**.

Some other Autobiographies of Actors =

- "An Unsuitable Boy" – Karan Johar (with Poonam Saxena)
- "Khullam Khulla: Rishi Kapoor Uncensored" – Rishi Kapoor (with Meena Iyer)
- "The Substance and the Shadow" – Dilip Kumar (with Uday Tara Nayar)
- "Lessons Life Taught Me, Unknowingly" – Anupam Kher
- "Stories I Must Tell: The Emotional Life of an Actor" – Kabir Bedi
- "My Life in Design" – Gauri Khan
- "Unfinished" – Priyanka Chopra Jonas
- "The Perils of Being Moderately Famous" – Soha Ali Khan
- "Close to the Bone" – Lisa Ray
- Romancing with Life – Dev Anand
- Bad Man – Gulshan Grover
- I Am No Messiah – Sonu Sood

Explanation:

Q. 69	<p>Why do atoms and nonpolar molecules have no dipole moment?</p> <p>a) Because their electronic charge cloud is missing <span style="color: red;">X</span></p> <p>b) Because their electronic charge cloud is scattered <span style="color: red;">X</span></p> <p>c) Because their electronic charge cloud is asymmetrically distributed <span style="color: red;">X</span></p> <p>d) Because their electronic charge cloud is symmetrically distributed <span style="color: green;">✓</span></p>
Explanation:	<p>Correct answer = Option 4 (d) Because their electronic charge cloud is symmetrically distributed)</p> <ul style="list-style-type: none"><li>• <b>Dipole Moment =</b><ul style="list-style-type: none"><li>o A dipole moment refers to the separation of positive and negative charges in a molecule.</li><li>o It is a measure of the polarity of a molecule.</li><li>o It's a vector quantity, meaning it has both magnitude and direction.</li><li>o <b>Dipole moment =</b> Charge × Distance between charges</li></ul></li><li>• <b>Nonpolar Molecule =</b><ul style="list-style-type: none"><li>o A nonpolar molecule is a molecule in which the distribution of electrons is symmetrical and there is no net dipole moment.</li><li>o This means that the molecule does not have an overall positive or negative charge on opposite ends.</li></ul></li><li>• <b>Charge Cloud =</b><ul style="list-style-type: none"><li>o The charge cloud refers to the distribution of electrons around an atom or molecule.</li><li>o In a molecule, if the charge cloud is uneven, there will be a dipole moment; if it's even or symmetrical, there won't be a dipole moment.</li></ul></li><li>• <b>Symmetrical Distribution =</b> Even spread of electrons, resulting in no dipole moment (nonpolar).</li><li>• <b>Asymmetrical Distribution =</b> Uneven spread of electrons, leading to a dipole moment (polar).</li></ul>

Q. 70	<p>The Nobel Prize in Chemistry 1951 was awarded jointly to Edwin Mattison McMillan and _____ for their discoveries in the chemistry of the transuranium elements</p> <p>a) Jacob Berzelius </p> <p>b) Leon Jouhaux </p> <p>c) Glenn T Seaborg </p> <p>d) Albert Schweitzer </p>
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Explanation:	<p>Correct answer = Option 3 (Glenn T Seaborg)</p> <ul style="list-style-type: none"><li>• <b>Edwin Mattison McMillan =</b><ul style="list-style-type: none"><li>o In 1940, he discovered <b>neptunium</b> (atomic number 93), the <b>first transuranium element</b> by bombarding uranium with neutrons using a particle accelerator (cyclotron).</li><li>o McMillan shared the Nobel Prize in Chemistry 1951 with Glenn T. Seaborg for their work on transuranium elements (elements beyond uranium).</li></ul></li><li>• <b>Jacob Berzelius =</b><ul style="list-style-type: none"><li>o He is best known for discovering the elements <b>selenium (Se)</b>, <b>thorium (Th)</b>, and <b>cerium (Ce)</b>, and for his work on the atomic weights of elements.</li><li>o He was awarded the Copley Medal and other honors</li></ul></li><li>• <b>Leon Jouhaux =</b><ul style="list-style-type: none"><li>o A French trade union leader who won the <b>Nobel Peace Prize in 1951</b> for his efforts to promote labor rights and the welfare of workers.</li><li>o His focus was on social issues, specifically labor rights and unionism.</li><li>o</li></ul></li><li>• <b>Glenn T. Seaborg =</b><ul style="list-style-type: none"><li>o Seaborg was an American chemist known for his pioneering work in nuclear chemistry and the discovery of transuranium elements.</li><li>o Building on McMillan's work, in late 1940 and early 1941, Seaborg and his team discovered <b>plutonium (atomic number 94)</b>.</li><li>o Seaborg received the Nobel Prize in Chemistry in 1951 along with Edwin McMillan for their work on transuranium elements.</li></ul></li><li>• <b>Albert Schweitzer =</b><ul style="list-style-type: none"><li>o A German-French theologian, philosopher, physician, and Nobel Peace Prize laureate.</li><li>o He received the <b>Nobel Peace Prize in 1952</b> for his work in the field of humanitarian efforts, specifically for his medical mission in Africa.</li></ul></li></ul>
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Q. 71

A ball is dropped from a height of 80 m. Neglecting air resistance, what will be its velocity just before hitting the ground? (Take acceleration due to gravity,  $g = 10 \text{ m/s}^2$ )

- a) 10 m/s
- b) 20 m/s
- c) 40 m/s
- d) 80 m/s

Correct Answer = Option 3 (40 m/s)

We use the kinematic equation for motion under gravity-

$$v^2 = u^2 + 2gh$$

Where,

- $v$  = final velocity
- $u$  = initial velocity = 0 (since the ball is dropped)
- $g = 10 \text{ m/s}^2$
- $h = 80 \text{ m}$

**Explanation:**

$$v^2 = 0 + 2 \times 10 \times 80$$

$$v^2 = 1600$$

$$v = 40 \text{ m/s}$$

### The three equations of motion-

#### 1. First Equation of Motion-

- $V = U + at$

Where:

- $V$ = final velocity,  $U$ = initial velocity,  $a$  = acceleration,  $t$  = time

#### 2. Second Equation of Motion-

- $S = Ut + \frac{1}{2}at^2$

Where:

- $S$ = displacement,  $U$ = initial velocity,  $a$ = acceleration,  $t$ = time

#### 3. Third Equation of Motion-

- $V^2 = U^2 + 2aS$

Where:

- $V$ = final velocity,  $U$ = initial velocity,  $a$  = acceleration,  $S$ = displacement

Q. 72	<p>Which of the following statements regarding the tenure of the Rajya Sabha is correct?</p> <p>a) The Rajya Sabha is dissolved every five years. </p> <p>b) The Rajya Sabha is a permanent house and is never dissolved. </p> <p>c) The entire Rajya Sabha is re-elected every six years. </p> <p>d) Members of the Rajya Sabha serve a term of four years. </p>
Explanation:	<p>Correct Answer = Option 2 (The Rajya Sabha is a permanent house and is never dissolved)</p> <p><b>Rajya Sabha-</b></p> <ul style="list-style-type: none"> <li>First Sitting - 13 May 1992</li> <li>Rajya Sabha is the <b>Upper House</b> of the Indian Parliament. It is a <b>permanent body</b> and cannot be dissolved.</li> <li>However, <b>one-third of its members retire every two years</b>.</li> <li>The <b>term of a Rajya Sabha member</b> is <b>6 years</b>.</li> <li>Current Chairman = Jagdeep Dhankhar</li> </ul> <p><b>Lok Sabha-</b></p> <ul style="list-style-type: none"> <li>The first <b>Lok Sabha</b> was <b>constituted</b> = 17th April 1952</li> <li>First Sitting = 13 May 1992</li> <li><b>Lok Sabha</b> is the <b>Lower House</b> of the Indian Parliament.</li> <li>The tenure of Lok Sabha is <b>5 years</b>. <ul style="list-style-type: none"> <li>It can be extended in case of emergency for 1 year at a time.</li> </ul> </li> <li><b>Ganesh Vasudev Mavalankar</b> was elected as the <b>first Speaker of the Lok Sabha</b>.</li> <li>Speaker = Om Birla</li> </ul>

Q. 73	<p>Who was awarded the Laureus World Sportsman of the Year in 2025?</p> <p>a) Rafael Nadal </p> <p>b) Armand Duplantis </p> <p>c) Kelly Slater </p> <p>d) Lionel Messi </p>
Explanation:	<p>Correct Answer = Option 2 (Armand Duplantis)</p> <p><b>Laureus World Sports Awards 2025-</b></p> <ul style="list-style-type: none"> <li>Laureus World Sportsman of the Year: Armand Duplantis (Athletics, Sweden)</li> <li>Laureus World Sportswoman of the Year: Simone Biles (Gymnastics, USA)</li> <li>Laureus World Team of the Year: Real Madrid (Football, Spain)</li> <li>Laureus Sporting Icon Award: Rafael Nadal (Tennis, Spain)</li> <li>Laureus Lifetime Achievement Award: Kelly Slater (Surfing, USA)</li> <li>Laureus Sportsperson of the Year with a Disability: Jiang Yuyan (China, Para Swimming)</li> <li>Laureus World Action Sportsperson of the Year: Tom Pidcock (Great Britain, Cycling)</li> </ul> <p>Laureus Sport for Good Award: Kick4Life (Lesotho)</p>

Q. 74	<p>Justice Bhushan Ramkrishna Gavai is slated to become which number Chief Justice of India?</p> <p>a) 50th <input checked="" type="checkbox"/></p> <p>b) 51st <input checked="" type="checkbox"/></p> <p>c) 52nd <input checked="" type="checkbox"/></p> <p>d) 53rd <input checked="" type="checkbox"/></p>
Explanation:	<p>Correct Answer = Option 3 (52nd)</p> <ul style="list-style-type: none"><li>• The <b>Supreme Court</b> is established under <b>Article 124(1)</b> of the Constitution.</li><li>• The Chief Justice of India is appointed by the <b>President of India</b> under <b>Article 124(2)</b> of the Constitution.</li><li>• To be appointed as a Judge of the Supreme Court (and thus potentially the CJI), a person must be a citizen of India and-<ul style="list-style-type: none"><li>◦ Have been a Judge of a High Court for <b>at least five years</b>, OR</li><li>◦ Have been an <b>Advocate of a High Court</b> for at least <b>ten years</b>, OR</li><li>◦ Be, in the <b>opinion of the President</b>, a distinguished jurist.</li></ul></li><li>• A Supreme Court Judge, including the CJI, holds office until they attain the age of <b>65 years</b></li><li>• In the event that the offices of both the President and the Vice-President are vacant, the Chief Justice of India acts as the President of India (as per the President (Discharge of Functions) Act, <b>1969</b>).</li><li>• The first Chief Justice of India = <b>Justice H. J. Kania</b></li><li>• The first woman judge appointed to the Supreme Court = <b>Justice Fathima Beevi</b></li></ul>

Q. 75	<p>The Parliament passed the Bharatiya Vayyan Vidheyak bill, 2024. Which existing Act is this new bill intended to replace?</p> <p>a) The Airports Authority of India Act, 1994 <span style="color: red;">X</span></p> <p>b) The Carriage by Air Act, 1972 <span style="color: red;">X</span></p> <p>c) The Indian Airways Act, 1890 <span style="color: red;">X</span></p> <p>d) The Aircraft Act, 1934 <span style="color: green;">✓</span></p>
Explanation:	<p>Correct Answer = Option 4 (The Aircraft Act, 1934)</p> <p>The Parliament passed the Bharatiya Vayyan Vidheyak bill, 2024, to replace the <b>Aircraft Act, 1934</b>.</p> <ul style="list-style-type: none"> <li>• The <b>Airports Authority of India Act, 1994</b> deals with the authority managing airports, not the primary aircraft regulation.</li> <li>• The <b>Carriage by Air Act, 1972</b> relates to rules governing international air travel liability.</li> <li>• The Rajya Sabha passed the <b>Boilers Bill 2024</b>, replacing the <b>Boiler Act of 1923</b>, aimed to decriminalize seven offences and promote ease of doing business.</li> <li>• The Lok Sabha passed the <b>Railways (Amendment) Bill, 2024</b>, granting statutory powers to the Railway Board, introduced by Union Railways Minister Ashwini Vaishnaw.</li> <li>• The Lok Sabha passed the <b>Disaster Management (Amendment) Bill, 2024</b>, which seeks to amend the existing <b>Disaster Management Act, 2005</b>.</li> </ul>

Q. 76	<p>Simplify:</p> $(13 \div 13 \text{ of } 13 + 13) / (13 \div 13 \times 13 + 13)$ <p>a) 85/169 <span style="color: green;">✓</span></p> <p>b) 13/96 <span style="color: red;">X</span></p> <p>c) 15/26 <span style="color: red;">X</span></p> <p>d) 1/26 <span style="color: red;">X</span></p>
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Explanation:	$  \begin{aligned}  & 1. (13 \div 13 \text{ of } 13 + 13) / (13 \div 13 \times 13 + 13) \\  & \Rightarrow (13 \div 169 + 13) / \left( \frac{13}{13} \times 13 + 13 \right) \\  & \Rightarrow \left( \frac{13}{169} + 13 \right) / (13 + 13) \\  & \Rightarrow \left( \frac{1+169}{13} \right) / (26) \\  & \Rightarrow \frac{170}{13} \times \frac{1}{26} \\  & \Rightarrow \frac{85}{169}  \end{aligned}  $ <div style="border: 1px solid black; padding: 5px; margin-left: 20px;">       B - bracket        O - of        D - division        M - multiplication        A - addition        S - subtraction     </div>
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Q. 77

The numbers A and B are such that the sum of 6% of A and 4% of B is two-fifth of the sum of 7% of A and 11% of B. then the ratio A : B is:

- a) 8:1 X
- b) 1:8 ✓
- c) 1:7 X
- d) 3:7 X

Explanation:

$$2. \quad 6\% \text{ of } A + 4\% \text{ of } B = \frac{2}{5} (7\% \text{ of } A + 11\% \text{ of } B)$$

$$\Rightarrow \frac{6}{100} A + \frac{4}{100} B = \frac{2}{5} \left( \frac{7}{100} A + \frac{11}{100} B \right)$$

$$\Rightarrow 6A + 4B = \frac{14}{5} A + \frac{22}{5} B$$

$$\Rightarrow 6A - \frac{14}{5} A = \frac{22}{5} B - 4B$$

$$\Rightarrow \frac{16}{5} A = \frac{2}{5} B$$

$$\Rightarrow \frac{A}{B} = \frac{2}{16} = \frac{1}{8}$$

Q. 78

Two trains of length 110 m and 85 m started moving from the same point in the same direction at 12m/s and 7 m/s, respectively. Find the time (in seconds) taken by the faster train to cross the slower train.

- a) 29 X
- b) 49 X
- c) 19 X
- d) 39 ✓

Explanation:

3. Trains are moving in same direction

$$\therefore \text{Relative speed} = 12\text{m/s} - 7\text{m/s} = 5\text{m/s}$$

$$\text{Total length of train} = 110\text{m} + 85\text{m} = 195\text{m}$$

$$\text{Speed} = \frac{\text{distance}}{\text{time}}$$

$$\Rightarrow 5 = \frac{195}{\text{Time}}$$

$$\Rightarrow \text{Time} = 39 \text{ Sec.}$$

Q. 79

The following table indicates the number of candidates who appeared in an entrance examination from four different cities A, B, C, D and the ratio of passing and failing. Study the table carefully and answer the question.

City	No. of candidates appeared	Ratio of passing and failing
A	660	5 : 6
B	650	2 : 3
C	500	3 : 2
D	630	4 : 5

Which city has the highest number of candidates who failed in the entrance examination and find its rate of percent in the city, respectively?

- a) B, 60% ✓
- b) A, 50% ✗
- c) C, 50% ✗
- d) D, 60% ✗

Explanation:

4.

		Failed Students
A	660	$\frac{6}{5+6} \times 660 = 360$
B	650	$\frac{3}{2+3} \times 650 = 390$
C	500	$\frac{2}{3+2} \times 500 = 200$
D	630	$\frac{5}{4+5} \times 630 = 350$

B city has highest no. of failed candidates  
 $\therefore$  Rate of failed candidates =  $\frac{3}{5} \times 100\% = 60\%$ .

Q. 80	<p>Two persons take steps of 77 cm and 88 cm, respectively. If they start in step, then what is the minimum distance (in cm) they should cover so that both of them can cover the distance in complete steps?</p> <p>a) 968 <span style="color: red;">X</span></p> <p>b) 828 <span style="color: red;">X</span></p> <p>c) 616 <span style="color: green;">✓</span></p> <p>d) 560 <span style="color: red;">X</span></p>
Explanation:	<p>5. <math>77 = 7 \times 11</math>  <math>88 = 2^3 \times 11</math>  <b>Minimum distance (Lcm) = <math>11 \times 2^3 \times 7</math></b>  <math>= 616</math></p>

Q. 81	<p>Mamta deposited a certain sum of money in her bank account which amounted to 27783 in 3 years at 5% per annum, the interest being compounded annually. What amount did she deposit?</p> <p>a) 25000 <span style="color: red;">X</span></p> <p>b) 24000 <span style="color: green;">✓</span></p> <p>c) 14000 <span style="color: red;">X</span></p> <p>d) 24500 <span style="color: red;">X</span></p>
Explanation:	<p>6. Amount <math>A = 27783</math>  <math display="block">A = P \left(1 + \frac{R}{100}\right)^T</math>  <math display="block">\Rightarrow 27783 = P \left(1 + \frac{5}{100}\right)^3</math>  <math display="block">\Rightarrow 27783 = P \times \frac{21}{20} \times \frac{21}{20} \times \frac{21}{20}</math>  <math display="block">\Rightarrow P = 24000</math></p>

Q. 82

Find the fourth proportional to  $(a+b)^2 \times (a^3 - b^3)$ ,  $(a^3 + b^3)$ ,  $(a^2 - b^2)$ .

- a)  $\frac{a^2 - ab + b^2}{a^2 + ab + b^2}$  ✓
- b)  $\frac{a^2 - ab + b^2}{a+b}$  ✗
- c)  $\frac{a^2 + ab + b^2}{a-b}$  ✗
- d)  $\frac{a^2 - ab + b^2}{a^2 - b^2}$  ✗

Explanation:

$$7. \text{ Let } A = (a+b)^2 \times (a^3 - b^3)$$

$$B = a^3 + b^3$$

$$C = a^2 - b^2$$

Proportionality:

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

$$\Rightarrow D = \frac{B \times C}{A}$$

$$\Rightarrow D = \frac{(a^3 + b^3)(a^2 - b^2)}{(a+b)^2 (a^3 - b^3)} \quad \left[ \begin{array}{l} a^3 + b^3 = (a+b)(a^2 + b^2 - ab) \\ a^2 - b^2 = (a+b)(a-b) \\ a^3 - b^3 = (a-b)(a^2 + b^2 + ab) \end{array} \right]$$

$$\Rightarrow D = \frac{(a+b)(a^2 - ab + b^2)(a+b)(a-b)}{(a+b)^2 (a-b)(a^2 + b^2 + ab)}$$

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

Q. 83

A cuboid with dimension  $12 \times 36 \times 4$  units is melted and a new cube is made. What is the total surface area of the cube formed in square units?

- a) 864 ✓

- b) 576 ✗

- c) 216 ✗

- d) 720 ✗

Explanation:

8. A Cube is made of Cuboid.

 $\therefore$  Volume of Cuboid = Vol. of Cube

$$\Rightarrow 12 \times 36 \times 4 = a^3$$

 $a = \text{Side of Cube}$ 

$$\Rightarrow a^3 = 2^2 \times 3 \times 3^2 \times 2^2 \times 2^2$$

$$\Rightarrow a^3 = 2^6 \times 3^3$$

$$\Rightarrow a = 2^2 \times 3$$

$$\Rightarrow a = 12 \text{ units}$$

$$\therefore \text{TSA of Cube} = 6a^2$$

$$= 6 \times 12 \times 12$$

$$= 864 \text{ Sq. units}$$

Q. 84	<p>Student get 62, 58, 72, 58 and 83 marks in Sanskrit, English, Mathematics, Social and Computer Science, respectively. His average marks in Mathematics, Social and Computer Science are _____ more than the average marks in Sanskrit, English and Mathematics.</p> <p>a) 7 ✓</p> <p>b) 9 ✗</p> <p>c) 6 ✗</p> <p>d) 8 ✗</p>
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Explanation:	<p>9. Sanskrit = 62      English = 58      Mathematics = 72      Social = 58      Comp. Sci. = 83</p> $\Rightarrow \frac{(\text{Maths} + \text{Social} + \text{Comp. Sci.})}{3} - \frac{(\text{Sanskrit} + \text{Eng.} + \text{Maths})}{3}$ $\Rightarrow \frac{58 + 83 - 62 - 58}{3}$ $\Rightarrow \frac{21}{3}$ $\Rightarrow 7$
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Q. 85	<p>If <math>(x-2)</math> is a factor of <math>(2x^2 + 12kx - 25k)</math>, then what is the value of k?</p> <p>a) 8 ✓</p> <p>b) 2 ✗</p> <p>c) 6 ✗</p> <p>d) 4 ✗</p>
Explanation:	<p>10. <math>(x-2)</math> is a factor of <math>(2x^2 + 12kx - 25k)</math>      Putting <math>x = 2</math></p> $\Rightarrow 2x^2 + 12kx - 25k = 0$ $\Rightarrow 2(2)^2 + 12k(2) - 25k = 0$ $\Rightarrow 8 + 24k - 25k = 0$ $\Rightarrow k = 8$

Q. 86

The area of the trapezium -shaped field is  $1720 \text{ m}^2$ , the distance between its parallel sides is 40 m and length of one of the parallel sides is 48 m. What is the length (in m) of the parallel side?

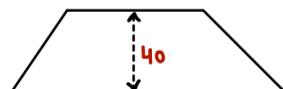
a) 38 ✓

b) 24 ✗

c) 42 ✗

d) 56 ✗

11.



$$\frac{1}{2} (\text{sum of Parallel Sides}) \times \text{height} = \text{Ar. of Trapezium}$$

$$\Rightarrow \frac{1}{2} (\text{sum of Parallel Sides}) \times 40 = 1720$$

$$\Rightarrow \text{Sum of Parallel Sides} = 43 \times 2 = 86$$

$$\Rightarrow 48 + x = 86$$

$$\Rightarrow x = 38 \text{m}$$

∴ where  $x$  = length of other parallel side.

Explanation:

Q. 87

Simplify:

$$24 \div 6 \times \left( \frac{3}{4} \text{ of } \frac{1}{3} + \frac{5}{3} \text{ of } \frac{3}{4} \right)$$

a) 3 ✗

b) 2 ✗

c) 6 ✓

d) 9 ✗

$$12. \quad 24 \div 6 \times \left( \frac{3}{4} \text{ of } \frac{1}{3} + \frac{5}{3} \text{ of } \frac{3}{4} \right)$$

$$\Rightarrow \frac{24}{6} \times \left[ \frac{3}{4} \times \frac{1}{3} + \frac{5}{3} \times \frac{3}{4} \right]$$

$$\Rightarrow \frac{24}{6} \times \left[ \frac{1}{4} + \frac{5}{4} \right]$$

$$\Rightarrow \frac{24}{6} \times \frac{6}{4} = 6$$

	B-bracket O-of D-division M-multiplication A-addition S-subtraction
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Explanation:

Q. 88

The difference in interests earned on 150,000 at an 8% rate of simple interest in a year and the interest in compounded semi-annually is?

- a) 480 X
- b) 240 ✓
- c) 120 X
- d) 360 X

$$13. \text{ SI} = \frac{PRT}{100}$$

$$\text{SI} = \frac{150000 \times 8 \times 1}{100}$$

$$\text{SI} = 12000$$

$\therefore$  Interest is compounded semi-annually.

$$R = 4\%$$

$$T = 2 \text{ years}$$

$$CI = A - P$$

$$CI = P \left(1 + \frac{R}{100}\right)^T - P$$

$$CI = P \left(1 + \frac{4}{100}\right)^2 - P$$

$$CI = P \times \frac{51}{625}$$

$$CI = 150000 \times \frac{51}{625}$$

$$CI = 12240$$

$$\therefore |CI - SI| = |12240 - 12000| \\ = ₹ 240$$

Explanation:

Q. 89

The surface area of a sphere is  $5544 \text{ cm}^2$ . If the radius of the sphere is doubled, then find the surface area of the new sphere (in  $\text{cm}^2$ )

- a) 20764
- b) 20176
- c) 22761
- d) 22176

Explanation:

14. Let initial Radius be ' $r$ '  
Radius of Sphere is doubled  $\Rightarrow 2r$   
Surface Area of Sphere  $= 4\pi r^2$

$$\Rightarrow \frac{4\pi(2r)^2}{4\pi(2r)^2} = \frac{5544}{A}$$

Surface Area of New Sphere

$$\Rightarrow \frac{r^2}{4r^2} = \frac{5544}{A}$$

$$\Rightarrow A = 5544 \times 4$$

$$\Rightarrow A = 22176$$

Q. 90

Find the greatest two digit number which on dividing 219,365,511 leaves the remainder 3,5,7, respectively.

- a) 82
- b) 53
- c) 72
- d) 63

Explanation:

15.  $219 - 3 = 216$        $216 = 2^3 \times 3^3$   
 $365 - 5 = 360$        $360 = 2 \times 5 \times 2^2 \times 3^2$   
 $511 - 7 = 504$        $504 = 7 \times 3^2 \times 2^3$

$\therefore$  Greatest 2 digit no. (HCF)  $= 2^3 \times 3^2$   
 $= 8 \times 9$   
 $= 72$

Q. 91

Find the value of  $\sqrt{\frac{1-\tan A}{1+\tan A}}$  ?

a)  $\sqrt{\frac{1+\sin A}{\cos A}}$



b)  $\sqrt{\frac{1+\sin A}{\cos 2A}}$



c)  $\sqrt{\frac{1-\sin A}{\cos A}}$



d)  $\sqrt{\frac{1-\sin 2A}{\cos 2A}}$



16.  $\sqrt{\frac{1-\tan A}{1+\tan A}}$

$$\sqrt{\frac{1 - \frac{\sin A}{\cos A}}{1 + \frac{\sin A}{\cos A}}}$$

$$\sqrt{\frac{\cos A - \sin A}{\cos A + \sin A}} \times \sqrt{\frac{\cos A - \sin A}{\cos A + \sin A}}$$

$$\sqrt{\frac{(\cos A - \sin A)^2}{\cos^2 A - \sin^2 A}}$$

$$\sqrt{\frac{\cos^2 A + \sin^2 A - 2 \sin A \cos A}{\cos 2A}}$$

$$\sqrt{\frac{1 - \sin 2A}{\cos 2A}}$$

 $\therefore$  Properties used -

$\cos^2 A + \sin^2 A = 1$

$2 \sin A \cdot \cos A = \sin 2A$

$\cos^2 A - \sin^2 A = \cos 2A$

Explanation:

Q. 92

12 days are taken by one man and one woman together to complete the work. A man alone can complete the work in 15 days. In how many days can one woman alone complete the work?

- a) 12 days
- b) 45 days
- c) 30 days
- d) 60 days

Explanation:

Let time taken by man be 'm'  
let time taken by woman be 'w'

$$\therefore \frac{1}{M} + \frac{1}{W} = \frac{1}{12}$$

$$\Rightarrow \frac{1}{15} + \frac{1}{W} = \frac{1}{12}$$

$$\Rightarrow \frac{1}{W} = \frac{1}{12} - \frac{1}{15}$$

$$\Rightarrow \frac{1}{W} = \frac{3}{12 \times 15}$$

$$\Rightarrow W = 60 \text{ days}$$

Q. 93

By selling a TV set for 40500 a salesman gains a profit of  $12\frac{1}{2}\%$ . If the production cost is increased by by 37.5 %. Find the new selling price of the set so as to gain 15%.

- a) 48925 X
- b) 50265 X
- c) 56925 ✓
- d) 60000 X

**18.**   $12.5\% = \frac{1}{8}$   
 $37.5\% = \frac{3}{8}$

let CP =  $8x$   
SP =  $8x + \frac{1}{8} \times 8x = 9x$

A/Q,  $9x = 40500$   
 $8x = \frac{40500}{9} \times 8$   
 $= 36000$

∴ CP is ↑ by 37.5%.  
New CP =  $8x + \frac{3}{8} \times 8x = 11x$

∴ Profit = 15%  
SP =  $\left(1 + \frac{15}{100}\right)$  new CP  
 $= \frac{115}{100} \times 11x$   
 $= \frac{23}{20} \times 11 \times \frac{36000}{8}$   
 $= 56925$

Explanation:

Q. 94

The average of the first 15 prime number is:

- a) 22.56 ✗  
 b) 19.57 ✗  
 c) 21.87 ✓  
 d) 18.65 ✗

$$19. \text{ 1}^{\text{st}} \text{ 15 Prime no.'s} = 2, 3, 5, 7, 11, 13, 17, 19, 23, \\ 29, 31, 37, 41, 43, 47.$$

Assume 23 to be the middle Point

$$\text{Deviation} = \frac{(2-23)+(3-23)+\dots+(43-23)+(47-23)}{15} \\ = \frac{-21-16-12-16-4+8+14+24}{15} \\ = \frac{-17}{15}$$

$$\therefore \text{Avg. of 15 Prime no.'s} = 23 - \frac{17}{15} \\ = 23 - 1.33 \\ = 21.87$$

Explanation:

Q. 95

 $2(\sin 1^\circ \times \sec 89^\circ) + 3(\cos 11^\circ \times \operatorname{cosec} 79^\circ) - 5(\tan 21^\circ \times \tan 69^\circ) = ?$ 

- a) 10 ✗  
 b) 15 ✗  
 c) 20 ✗  
 d) 0 ✓

Explanation:

$$20. \quad 2(\sin 1^\circ \times \sec 89^\circ) + 3(\cos 11^\circ \times \operatorname{cosec} 79^\circ) - 5(\tan 21^\circ \times \tan 69^\circ) \\ \Rightarrow 2(\sin 1^\circ \times \sec(90-1^\circ)) + 3(\cos 11^\circ \times \operatorname{cosec}(90-11^\circ)) - 5(\tan 21^\circ \times \tan(90-21^\circ)) \\ \Rightarrow 2(\sin 1^\circ \times \operatorname{cosec} 1^\circ) + 3(\cos 11^\circ \times \sec 11^\circ) - 5(\tan 21^\circ \times \cot 21^\circ) \\ \Rightarrow 2 + 3 - 5 \\ \Rightarrow 0$$

$$\left[ \begin{array}{l} \sin \theta \times \operatorname{cosec} \theta = 1 \\ \cos \theta \times \sec \theta = 1 \\ \tan \theta \times \cot \theta = 1 \end{array} \right] \left[ \begin{array}{l} \sec(90-\theta) = \operatorname{cosec} \theta \\ \operatorname{cosec}(90-\theta) = \sec \theta \\ \tan(90-\theta) = \cot \theta \end{array} \right]$$

Q. 96

A store sells an item for 500, making a profit of 25%. Later, the store reduces the price of the item by 20% to clear out old inventory. What is the new percentage profit or loss for the store?

- a) 5% loss X
- b) 5% profit X
- c) 2% profit X
- d) No profit, no loss ✓

Explanation:

$$21. \text{ let } CP = 100x$$

Profit = 25%

$$(1 + \frac{25}{100}) 100x = SP$$

$$\Rightarrow 125x = 500$$

$$\Rightarrow x = 4$$

$$\Rightarrow CP = 100x$$

$$\Rightarrow CP = ₹ 400$$

∴ Price is reduced by 20%.

$$\Rightarrow \frac{80}{100} \times 500$$

$$\Rightarrow ₹ 400$$

$$\therefore CP = SP$$

⇒ No Profit No loss

Q. 97

Find the area of an equilateral triangle, each of whose sides measures 18 cm.

- a)  $81\sqrt{3}$  ✓
- b)  $\frac{81\sqrt{3}}{2}$  X
- c)  $\frac{81}{\sqrt{3}}$  X
- d)  $162\sqrt{3}$  X

Explanation:

$$22. \text{ Area of Equilateral triangle} = \frac{\sqrt{3}}{4} a^2$$

Let 'a' = side of equilateral triangle

$$\text{Area of } \Delta = \frac{\sqrt{3}}{4} \times 18 \times 18$$

$$= 81\sqrt{3}$$

Q. 98

A sum of money becomes 6400 in 3 years and 8100 in 5 years on compound interest compounded annually. Find the rate of interest per annum.

a)  $12\frac{1}{3}\%$  X

b) 13.5% X

c)  $12\frac{3}{8}\%$  X

d) 12.5% ✓

$$23. \quad A = P \left(1 + \frac{R}{100}\right)^T$$

$$\Rightarrow 8100 = P \left(1 + \frac{R}{100}\right)^5 \quad \text{--- (1)}$$

$$6400 = P \left(1 + \frac{R}{100}\right)^3 \quad \text{--- (2)}$$

Divide eq<sup>n</sup> (1) by eq<sup>n</sup> (2) -

$$\Rightarrow \frac{8100}{6400} = \frac{P \left(1 + \frac{R}{100}\right)^5}{P \left(1 + \frac{R}{100}\right)^3}$$

$$\Rightarrow \frac{81}{64} = \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow 1 + \frac{R}{100} = \frac{9}{8}$$

$$\Rightarrow \frac{R}{100} = \frac{1}{8}$$

$$\Rightarrow R = 12.5\%.$$

Explanation:

Q. 99

A truck driver drove 60km/h for three hours. Then he stopped for one hour and did not go anywhere. Then, he drove four more hours at 60 km/h. What was the driver's average speed (in km/h)?

- a) 62.5
- b) 50.5
- c) 52.5
- d) 42.5

Explanation:

$$24. \text{ Avg. Speed} = \frac{\text{Total Distance}}{\text{Total Time}}$$

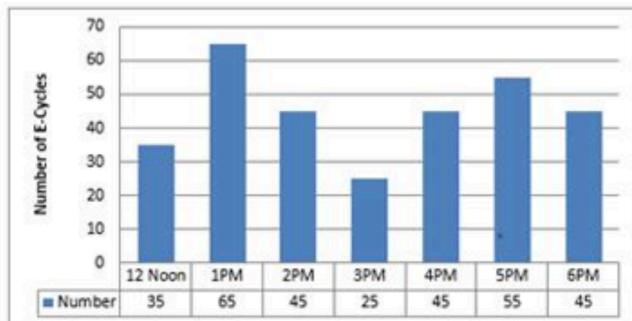
$$\text{distance} = \text{speed} \times \text{time}$$

$$\Rightarrow \frac{(60 \times 3) + (60 \times 4)}{3+1+4}$$

$$\Rightarrow \frac{60 \times 7}{8} = 52.5 \text{ km/hr}$$

Q. 100

The bar diagram represents the number of E-Cycles parking in a metro station. Find the total amount of E-Cycles from 2:00 P.M. to 6:00 P.M., when the parking charge is 3.5 per hour?



- a) 752.5
- b) 645
- c) 980
- d) 455

Explanation:

25. E-cycles From 2PM to 6PM

$$= 45 + 25 + 45 + 55 + 45$$

$$= 215$$

$$\text{Parking charges} = 215 \times 3.5$$

$$= ₹ 752.5$$