

## RBE SSC CGL 2025 Live Mock April 27, 2025

Q. 1

Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /deleting /multiplying etc., to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(12, 8, 220)

(16, 5, 297)

a) (18, 4, 356) X

b) (15, 7, 279) X

c) (19, 6, 420) X

d) (14, 9, 291) ✓

The correct answer is: d

$$\textcircled{I} \quad (12, 8, 220)$$

$$\Rightarrow (12)^2 + (8)^2 + 12$$

$$\Rightarrow 144 + 64 + 12 = 220$$

$$\textcircled{II} \quad (16, 5, 297)$$

$$\Rightarrow (16)^2 + (5)^2 + 16$$

$$\Rightarrow 256 + 25 + 16 = 297$$

$$\textcircled{III} \quad \text{option (d)}$$

$$(14, 9, 291)$$

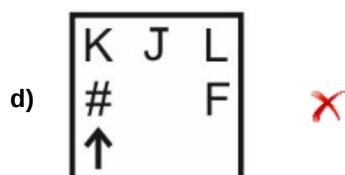
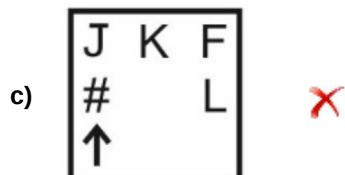
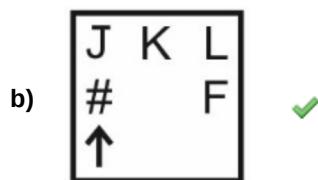
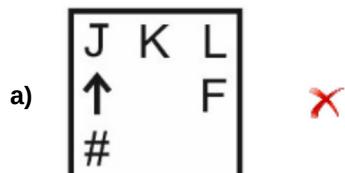
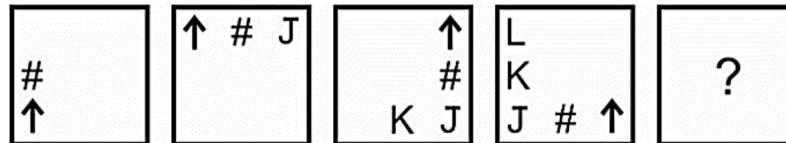
$$\Rightarrow (14)^2 + (9)^2 + 14$$

$$\Rightarrow 196 + 81 + 14 = 291$$

**Explanation:**

Q. 2

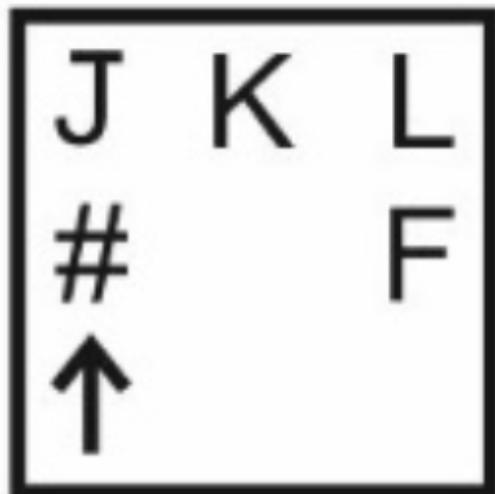
Select the figure from among the given options that can replace the question mark (?) in the following series.



The correct answer is: b

The letters and elements in the figure is moving in clockwise direction leaving one space. Also new elements keep on adding.

**Explanation:**



**Q. 3**

In a certain code language, 'dog is cute' is coded as '5 2 8'; 'cat is smart' is coded as '3 6 2' and 'cute is smart' is coded as '8 2 3'. How is 'cat' coded in that language?

- a) 3 
- b) 4 
- c) 6 
- d) 8 

**Explanation:**

The correct answer is: c

- "is" is coded as '2' (appears in all sets)
- "cute" is coded as '8' (common in 'dog is cute' and 'cute is smart')
- For 'cat is smart', "is" = 2, "smart" = 3

So, "cat" is coded as 6.

Q. 4

Select the set in which the numbers are related in the same way as are the numbers of the following set.

4 — 24 — 8

9 — 30 — 6

NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

a) 17 — 60 — 8 X

b) 8 — 28 — 6 ✓

c) 15 — 56 — 12 X

d) 7 — 25 — 6 X

The correct answer is: b

$$\text{a)} \quad 4 - 24 - 8$$

$$\Rightarrow (4+8) \times 2 = 24$$

$$\text{b)} \quad 9 - 30 - 6$$

$$\Rightarrow (9+6) \times 2 = 30$$

$$\text{c)} \quad 8 - 28 - 6$$

$$\Rightarrow (8+6) \times 2 = 28$$

Explanation:

Q. 5

Select the option that represents the letters that when placed from left to right in the blanks below will complete the letter series.

\_ X Y J W J W \_ Y J W \_ W X \_ J W J W X Y \_ W J W X

a) JXWYJ X

b) WXYJJ X

c) JWXJY X

d) WXJYJ ✓

The correct answer is: d

W X Y J W J / W X Y J W J / W X Y J W J / W X Y J W J / W X

The correct letter combination to fill the blanks is: **WXJYJ**

**Q. 6**

Select the option that is related to the third word in the same way as the second word is related to the first word.

(The words must be considered as meaningful English words and must not be related to each other based on the number of letters/number of consonants/vowels in the word)

Mosaic : Tiles :: Quilt : ?

- a) Thread
- b) Fabric
- c) Design
- d) Pattern

The correct answer is: b

**Explanation:**

**Explanation:**

- A mosaic is made up of small pieces called tiles.
- A quilt is made up of small pieces called fabric.

Therefore, the correct answer is: (b) Fabric

**Q. 7**

The position of how many letters will remain unchanged if all the letters in the word 'LEGACY' are arranged in English alphabetical order?

- a) One
- b) Two
- c) Three
- d) None

The correct answer is: a

L E G A C Y

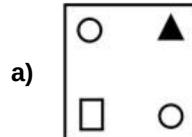
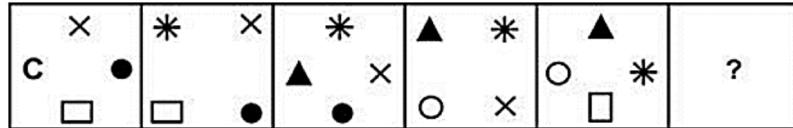
**Explanation:**

A C E G L Y

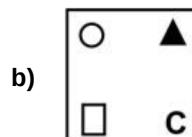
Only one letter remains unchanged if all the letters in the word 'LEGACY' are arranged in English alphabetical order.

**Q. 8**

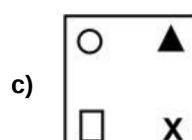
Select the figure from among the given options that can replace the question mark (?) in the following series.



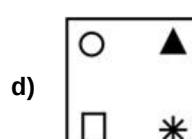
✗



✗



✓



✗

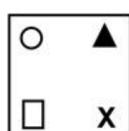
**Explanation:**

The correct answer is: c

I. All elements are moving one place in clockwise direction.

II. New elements are added subsequently.

(Note: Don't confuse between the multiplication sign ( $\times$ ) and the English alphabet cross sign ( $X$ )



Q. 9

What will come in place of the question mark (?) in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$3072 \times 3 - 783 \div 5 + 1139 = ?$$

- a) 2800
- b) 3900
- c) 3800
- d) 2700

The correct answer is: c

$$3072 \times 3 - 783 \div 5 + 1139 = ?$$

If '+' and '-' are interchanged and '×' and '÷' are interchanged, then

$$\Rightarrow 3072$$

$$3 + 783$$

**Explanation:**

$$5 - 1139$$

$$\Rightarrow 1024 + 3915 - 1139$$

$$\Rightarrow 4939 - 1139 = 3800$$

Q. 10

In a certain code language, 'KING' is written as 'JJMH' and 'CARD' is written as 'BBQE'. How will 'SNOW' be written in that language?

- a) RMNX X
- b) RONX ✓
- c) RMMX X
- d) RPMX X

The correct answer is: b

$\begin{matrix} -1 & +1 & -1 & +1 \\ K & I & N & G \\ \downarrow & \downarrow & \downarrow & \downarrow \\ J & J & M & H \end{matrix}$

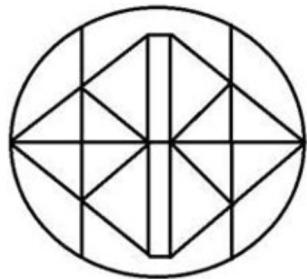
$\begin{matrix} -1 & +1 & -1 & +1 \\ C & A & R & D \\ \downarrow & \downarrow & \downarrow & \downarrow \\ B & B & Q & E \end{matrix}$

$\begin{matrix} -1 & +1 & -1 & +1 \\ S & N & O & W \\ \downarrow & \downarrow & \downarrow & \downarrow \\ R & O & N & X \end{matrix}$

**Explanation:**

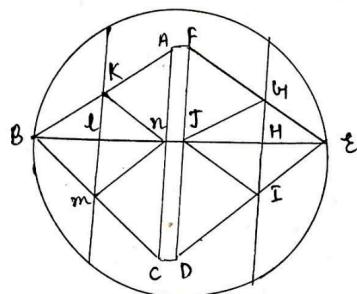
Q. 11

How many triangles are present in the given figure?



- a) 22 X
- b) 28 X
- c) 24 X
- d) 26 ✓

The correct answer is: d



Explanation:

There are 26 triangles in the given figure :

$\Delta BIK$ ,  $\Delta BLm$ ,  $\Delta BKm$ ,  $\Delta lKn$ ,  
 $\Delta lmn$ ,  $\Delta KmN$ ,  $\Delta KNA$ ,  $\Delta mnc$ ,  
 $\Delta ABC$ ,  $\Delta BKn$ ,  $\Delta Bmn$ ,  $\Delta BAn$ ,  
 $\Delta BCn$ ,  $\Delta GH\ell$ ,  $\Delta HIE$ ,  $\Delta G\ell I$ ,  
 $\Delta GHJ$ ,  $\Delta HTI$ ,  $\Delta JTI$ ,  $\Delta GJF$ ,  
 $\Delta DJI$ ,  $\Delta GJ\ell$ ,  $\Delta JIE$ ,  $\Delta EFD$ ,  
 $\Delta FJ\ell$ ,  $\Delta EJD$

**Q. 12**

What will come in the place of '?' in the following equation, if '÷' and '-' are interchanged and '×' and '+' are interchanged?

$$47 \div 76 - 4 \times 8 + 9 = ?$$

- a) 90
- b) 85
- c) 100
- d) 110

The correct answer is: c

$$47 \div 76 - 4 \times 8 + 9 = ?$$

If '÷' and '-' are interchanged and '×' and '+' are interchanged, then

$$\Rightarrow 47 - 76$$

$$4 + 8$$

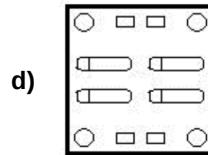
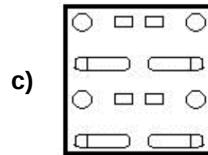
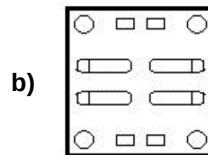
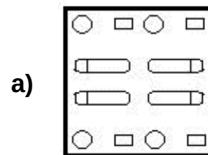
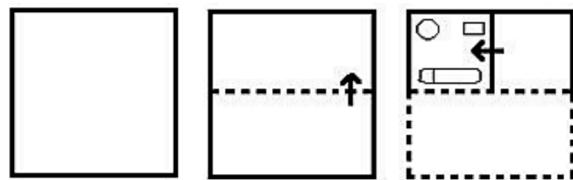
**Explanation:**

9

$$\Rightarrow 47 - 19 + 72$$
$$\Rightarrow 119 - 19 = 100$$

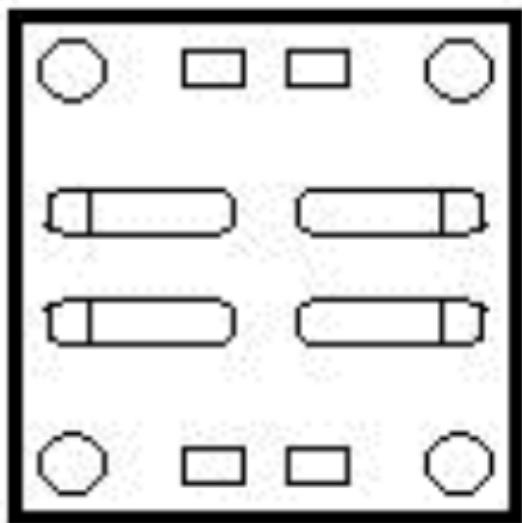
Q. 13

A paper is folded and cut as shown below. How will it appear when unfolded?



The correct answer is: b

Explanation:



Q. 14

Which of the following letter-clusters will replace the question mark (?) in the given series to make it logically complete?  
VHW, UGV, TFU, SET, ?

- a) RDS ✓
- b) RCS ✗
- c) RDT ✗
- d) RES ✗

The correct answer is: a

Explanation:

V      H      W  
↓-I    ↓-I    ↓-I  
U      G      V  
  
T      F      U  
↓-I    ↓-I    ↓-I  
S      E      T  
↓-I    ↓-I    ↓-I  
**R      D      S** (Ans)

**Q. 15**

The question contains pairs of words that are related to each other in a certain way. Three of the following four word pairs are alike as these have the same relationship and thus form a group. Which word pair is the one that DOES NOT belong to that group?

(The words must be considered as meaningful English words and must not be related to each other based on the number of letters/number of consonants/vowels in the word.)

- a) Soft - Gentle X
- b) Hard - Firm X
- c) Calm - Peaceful X
- d) Angry - Happy ✓

The correct answer is: d

**Explanation:**

- **Soft - Gentle:** These words are synonyms, both describing a mild or tender nature.
- **Hard - Firm:** These words are synonyms, both describing a solid or unyielding nature.
- **Calm - Peaceful:** These words are synonyms, both describing a state of tranquility.
- **Angry - Happy:** These words are antonyms, describing opposite emotions.

The word pair **Angry - Happy** does not belong to the group because it represents antonyms, while the other pairs represent synonyms.

So, the answer is: **Angry - Happy**.

Q. 16

In a certain code language, 'AMOUNT' is coded as 'OMAFMG' and 'COMPLY' is coded as 'MOCKOB'. What is the code for 'DOMAIN' in that language?

- a) MODNIA
- b) MDOMRZ
- c) NODZRM
- d) MODZRM

The correct answer is: d

A M O U N T  
 O ~~M~~ A F M G  
 ↖ ↘ ↗  
 Lopp. Lopp. Lopp.

C O M P L Y  
 C ~~O~~ M P L Y  
 ↖ ↗  
 Lopp. Lopp. Lopp.  
 M O C K O B

D O M A I N  
 D ~~O~~ M A I N  
 ↖ ↗  
 Lopp. Lopp. Lopp.  
 M O D Z R M

Explanation:

Q. 17

Select the number from among the given options that can replace the question mark (?) in the following series.

500, 252, 130, 73, 52.5, 58.25, ?

- a) 93.125
- b) 85.225
- c) 95.125
- d) 100.225

The correct answer is: a

500, 252, 130, 73, 52.5, 58.25, 93.125  
 ↗ ↗ ↗ ↗ ↗  
 $\frac{x}{2} + 2$   $\frac{x}{2} + 4$   $\frac{x}{2} + 8$   $\frac{x}{2} + 16$   $\frac{x}{2} + 32$   $\frac{x}{2} + 64$   
 ? = 93.125 (Ans)

Explanation:

**Q. 18**

Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

**Statements:**

Some steppes are prairies.

All prairies are velds.

All velds are downs.

**Conclusions:**

I. Some steppes are downs.

II. All prairies are downs.

III. No steppes is a velds.

a) Only conclusion III follows



b) Only conclusions II and III follow



c) Only conclusions I and III follow

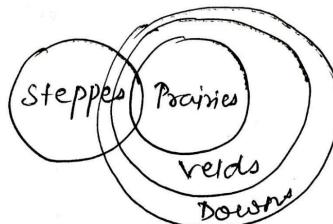


d) Only conclusions I and II follow



**Explanation:**

The correct answer is: d



only conclusion I & II follow.

Q. 19

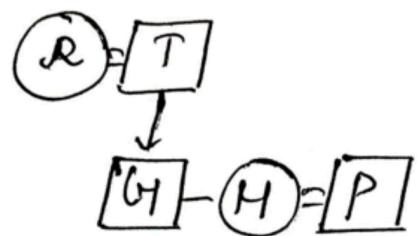
In a certain code language,  
 'A + B' means 'A is the mother of B';  
 'A - B' means 'A is the brother of B';  
 'A × B' means 'A is the wife of B' and  
 'A ÷ B' means 'A is the father of B'.

Based on the above, how is P related to R if 'R × T ÷ G - H × P'?

- a) Son X
- b) Daughter-in-law X
- c) Daughter X
- d) Son-in-law ✓

The correct answer is: d

Explanation:



'P' is Son-in-law  
of 'R'.  
(○ → Female, □ → Male)

Q. 20

Select the correct mirror image of the given figure when the mirror is placed at AB as shown.



a)



X

b)



X

c)



X

d)



✓

The correct answer is: d

**Explanation:**



Q. 21

56 is related to 281 by certain logic. Following the same logic, 63 is related to 316. To which of the following is 72 related, following the same logic? (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /deleting /multiplying etc., to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

- a) 354 X
- b) 386 X
- c) 361 ✓
- d) 372 X

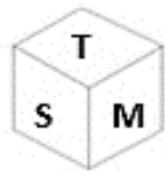
The correct answer is: c

- a)  $56 - 281$   
 $\Rightarrow 56 \times 5 + 1 = 281$
- b)  $63 - 316$   
 $\Rightarrow 63 \times 5 + 1 = 316$
- c)  $72 - 361$   
 $\Rightarrow 72 \times 5 + 1 = 361$

Explanation:

**Q. 22**

Six letters S, T, M, P, R and C are written on different faces of a dice. Two positions of this dice are shown in the figures below. Find the letter on the face opposite to M.



a) R ✓

b) S ✗

c) C ✗

d) P ✗

**Explanation:**

The correct answer is: a

$T \Rightarrow M \Rightarrow S$

$T \Rightarrow R \Rightarrow P$

Opposite faces are M-R, S-P and C-T.

Q. 23

Three of the following numbers are alike in a certain way and one is different. Pick the odd one out.

(NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /deleting /multiplying etc., to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

a)  $18 - 7 - 115$  X

b)  $23 - 8 - 173$  X

c)  $19 - 9 - 160$  X

d)  $26 - 6 - 144$  ✓

The correct answer is: d

$$(a) \quad 18 - 7 - 115$$

$$\Rightarrow 18 \times 7 - 11 = 115$$

$$(b) \quad 23 - 8 - 173$$

$$\Rightarrow 23 \times 8 - 11 = 173$$

$$(c) \quad 19 - 9 - 160$$

$$\Rightarrow 19 \times 9 - 11 = 160$$

$$(d) \quad 26 - 6 - 144$$

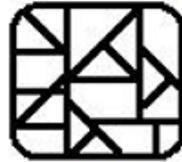
$$\Rightarrow 26 \times 6 - 11 = 145 \text{ (} \neq 144 \text{)}$$

$\therefore$  option (d) is odd one out.

Explanation:

Q. 24

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

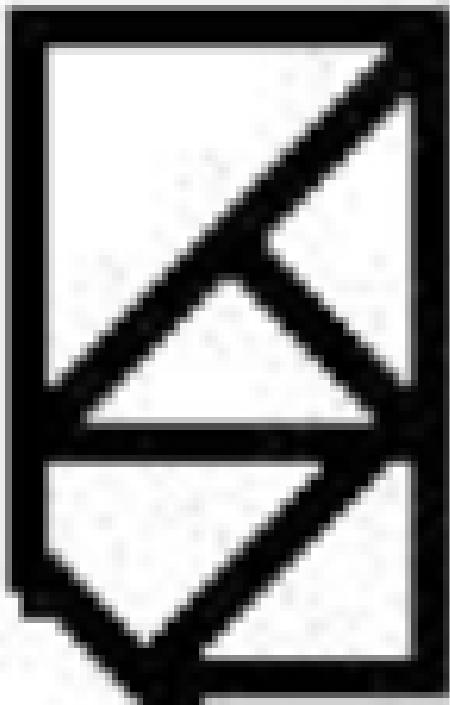


(X)

- a)  ✗
- b)  ✗
- c)  ✓
- d)  ✗

The correct answer is: c

Explanation:



The figure in option (c), is **not** embedded in the question figure.

Q. 25

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

LCR: DUJ :: PFB: HXT :: NEZ?:

- a) GWR X
- b) FXR X
- c) GXR X
- d) FWR ✓

The correct answer is: d

L C R  
-8 | -8 | -8 |  
D U J

Explanation:

P F B  
-8 | -8 | -8 |  
H X T

N E Z  
-8 | -8 | -8 |  
F W R

Q. 26	<p>Which Iranian-origin group was known in Indian sources as Shaka-Pahlava?</p> <p>a) Kushanas </p> <p>b) Shakas </p> <p>c) Indo-Greeks </p> <p>d) Parthians </p>
Explanation:	<p>The correct answer is <b>Parthians</b>.</p> <p>The <b>Parthians</b>, an Iranian-origin group, were referred to as <b>Shaka-Pahlava</b> in Indian sources. They were part of the larger Indo-Iranian cultural and historical context. The term "Pahlava" is derived from the Parthian Empire, which was a significant power in ancient Iran. The Parthians migrated to the Indian subcontinent and played a role in shaping its history, particularly during the early centuries CE. They are often mentioned alongside other groups like the Shakas and Kushanas in Indian historical texts.</p>
Q. 27	<p>Dhivehi is the official language of which neighbouring country of India?</p> <p>a) Bhutan </p> <p>b) Sri Lanka </p> <p>c) Maldives </p> <p>d) Myanmar </p>
Explanation:	<p>The correct answer is <b>Maldives</b>.</p> <p><b>Dhivehi</b> is the official language of the <b>Maldives</b>, which is a neighbouring country to India, located to the southwest in the Indian Ocean. Dhivehi is an Indo-Aryan language, spoken by the Maldivian people, and it is used in government, education, and media in the country.</p> <p>Here's a brief explanation of the other options:</p> <ul style="list-style-type: none"><li>• <b>Bhutan</b>: The official language of Bhutan is <b>Dzongkha</b>.</li><li>• <b>Sri Lanka</b>: The official languages of Sri Lanka are <b>Sinhala</b> and <b>Tamil</b>.</li><li>• <b>Myanmar</b>: The official language of Myanmar is <b>Burmese</b>.</li></ul> <p>Thus, <b>Dhivehi</b> is specifically associated with the Maldives.</p>

Q. 28	<p>Which Articles of the Constitution of India provide for a parliamentary form of government at the Centre?</p> <p>a) Articles 74 and 75 ✓</p> <p>b) Articles 71 and 72 ✗</p> <p>c) Articles 79 and 80 ✗</p> <p>d) Articles 76 and 77 ✗</p>
Explanation:	<p>The correct answer is <b>Articles 74 and 75</b>.</p> <p><b>Explanation:</b></p> <ul style="list-style-type: none"> <li>Article 74 of the <b>Constitution of India</b> provides for the <b>Council of Ministers</b> headed by the Prime Minister, who shall aid and advise the President in the exercise of his functions. This establishes the concept of a <b>parliamentary system of government</b> at the national level in India.</li> <li>Article 75 deals with the <b>appointment of the Prime Minister</b> and other members of the Council of Ministers. It mandates that the Prime Minister is appointed by the President, and the Council of Ministers must have the support of the Lok Sabha (the lower house of Parliament) to remain in power, further reinforcing the <b>parliamentary system</b>.</li> </ul> <p>Thus, <b>Articles 74 and 75</b> together provide for a parliamentary form of government at the Centre, where the executive (Prime Minister and the Council of Ministers) is accountable to the legislature (Parliament).</p>
Q. 29	<p>What is the name of the first anchored project approved by the Green Climate Fund (GCF) for SIDBI in 2024?</p> <p>a) Sustainable Development Project (SDP) ✗</p> <p>b) Green Technology Initiative (GTI) ✗</p> <p>c) Climate Innovation Program (CIP) ✗</p> <p>d) Avaana Sustainability Fund (ASF) ✓</p> <p>The correct answer is <b>Avaana Sustainability Fund (ASF)</b>.</p> <p>In 2024, the Green Climate Fund (GCF) approved its first anchored project for the Small Industries Development Bank of India (SIDBI), named the <b>Avaana Sustainability Fund (ASF)</b>. This project, valued at \$120 million, focuses on investing in early-stage companies that leverage technology-driven innovations to address climate challenges. The initiative aims to contribute to climate change mitigation, adaptation, and enhancing resilience in vulnerable sectors of the Indian economy. It marks a significant step in advancing India's climate action goals.</p>

Q. 30	<p>In which year did the National Council for Promotion of Urdu Language started functioning as an autonomous body?</p> <p>a) 1996 ✓</p> <p>b) 1956 ✗</p> <p>c) 1969 ✗</p> <p>d) 1982 ✗</p>
<b>Explanation:</b>	<p>The correct answer is <b>1996</b>.</p> <p>The <b>National Council for Promotion of Urdu Language (NCPUL)</b> began functioning as an autonomous body on <b>April 1, 1996</b>. It operates under the Ministry of Education, Government of India, with the aim of promoting, developing, and propagating the Urdu language. NCPUL plays a vital role in enriching Urdu literature and fostering education in the language through various initiatives and programs.</p>

Q. 31	<p><b>From which of the following countries has the Indian Constitution borrowed the concept of the Concurrent List?</b></p> <p>a) Australia <input checked="" type="checkbox"/> ✓</p> <p>b) Russia <input type="checkbox"/> ✗</p> <p>c) USA <input type="checkbox"/> ✗</p> <p>d) Ireland <input type="checkbox"/> ✗</p>
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Explanation:	<p>The correct answer is <b>Australia</b>.</p> <p>The Indian Constitution borrowed the concept of the <b>Concurrent List</b> from <b>Australia</b>. This list, part of the Seventh Schedule, allows both the Union and State governments to legislate on matters included in it. In case of a conflict between Union and State laws on a subject in the Concurrent List, the Union law prevails. This feature ensures a balance of power and promotes cooperative federalism.</p> <p>The Indian Constitution is a fascinating document that draws inspiration from various countries to ensure a balance between governance, rights, and responsibilities. Here are some of the notable borrowed features:</p> <ol style="list-style-type: none"> <li>1. <b>United Kingdom (UK):</b> <ul style="list-style-type: none"> <li>◦ Parliamentary system of government.</li> <li>◦ Rule of law.</li> <li>◦ Single citizenship.</li> <li>◦ The concept of prerogative writs (e.g., Habeas Corpus, Mandamus).</li> </ul> </li> <li>2. <b>United States of America (USA):</b> <ul style="list-style-type: none"> <li>◦ Fundamental Rights.</li> <li>◦ Independence of judiciary.</li> <li>◦ Judicial review.</li> <li>◦ Federal structure of government.</li> </ul> </li> <li>3. <b>Ireland:</b> <ul style="list-style-type: none"> <li>◦ Directive Principles of State Policy.</li> <li>◦ Method of election of the President.</li> </ul> </li> <li>4. <b>Australia:</b> <ul style="list-style-type: none"> <li>◦ Concurrent List (division of powers between Union and States).</li> <li>◦ The principle of cooperative federalism.</li> </ul> </li> <li>5. <b>Canada:</b> <ul style="list-style-type: none"> <li>◦ Residuary powers with the Union (central government).</li> <li>◦ A strong central government with a federal structure.</li> </ul> </li> <li>6. <b>Germany (Weimar Constitution):</b> <ul style="list-style-type: none"> <li>◦ Emergency provisions.</li> </ul> </li> <li>7. <b>South Africa:</b> <ul style="list-style-type: none"> <li>◦ Procedure for amendment of the Constitution.</li> </ul> </li> <li>8. <b>France:</b> <ul style="list-style-type: none"> <li>◦ Concept of Republic and ideals of Liberty, Equality, and Fraternity.</li> </ul> </li> <li>9. <b>Japan:</b> <ul style="list-style-type: none"> <li>◦ The principle of procedures for due process of law.</li> </ul> </li> </ol>
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Q. 32	<p>The British East India Company captured Pondicherry (Puducherry) from the French in the year ____.</p> <p>a) 1761 ✓</p> <p>b) 1699 ✗</p> <p>c) 1674 ✗</p> <p>d) 1738 ✗</p>
<b>Explanation:</b>	<p>The correct answer is <b>1761</b>.</p> <p>The British East India Company captured <b>Pondicherry (Puducherry)</b> from the French in <b>1761</b> during the Anglo-French wars. This was part of the larger conflict between European powers for dominance in India. However, the territory was returned to the French in <b>1763</b> under the Treaty of Paris, following the conclusion of the Seven Years' War. Pondicherry changed hands multiple times during these colonial struggles.</p>

Q. 33	<p>Select the INCORRECT statement about Agar.</p> <p>a) It is used in preparations of ice-creams and jellies. ✗</p> <p>b) Agar is used to grow microbes. ✗</p> <p>c) Agar, one of the commercial products obtained from red algae, gelidium and gracilaria. ✗</p> <p>d) It is used as nutrient and source of fat of bacterial culture. ✓</p>
<b>Explanation:</b>	<p>The correct answer is: <b>It is used as a nutrient and source of fat of bacterial culture.</b></p> <p><b>Explanation:</b></p> <p><b>Explanation:</b></p> <ul style="list-style-type: none"> <li>• Agar is a gelatinous substance obtained from red algae, specifically species like Gelidium and Gracilaria. It is primarily used as a solidifying agent in microbiology to grow cultures of microorganisms, such as bacteria, fungi, etc.</li> <li>• <b>Correct uses of Agar:</b> <ul style="list-style-type: none"> <li>◦ It is used in the preparation of ice creams and jellies: Agar has gelling properties and is used as a vegetarian alternative to gelatin in these products.</li> <li>◦ Agar is used to grow microbes: Agar is used in microbiology to prepare agar plates, which are solid media where microorganisms are cultured.</li> <li>◦ Agar, one of the commercial products obtained from red algae (Gelidium and Gracilaria): This is true. Agar is derived from red algae species and is commercially harvested from them.</li> </ul> </li> </ul>

Q. 34	<p>Which of the following items has a high fibre content?</p> <p>a) Whole grain ✓</p> <p>b) Eggs ✗</p> <p>c) Fish ✗</p> <p>d) Milk ✗</p>
<b>Explanation:</b>	<p>The correct answer is <b>Whole grain</b>.</p> <p><b>Whole grains</b>, such as oats, quinoa, and brown rice, are rich in <b>dietary fibre</b>, which is essential for digestive health. Fibre helps regulate bowel movements, reduces cholesterol levels, and promotes a feeling of fullness. On the other hand, foods like <b>eggs, fish, and milk</b> are excellent sources of protein, fats, and other nutrients but contain little to no fibre.</p>
Q. 35	<p>In which unit, noise pollution is measured?</p> <p>a) Centimeter ✗</p> <p>b) Hertz ✗</p> <p>c) Decibel ✓</p> <p>d) Ohm ✗</p>
<b>Explanation:</b>	<p>The correct answer is <b>Decibel</b>.</p> <p><b>Noise pollution</b> is measured in <b>decibels (dB)</b>, which quantify sound intensity. A decibel is a unit that represents the logarithmic scale of sound pressure levels. Excessive noise levels, typically above 85 dB, can be harmful to human health, leading to hearing loss, stress, and other issues. Monitoring noise pollution is crucial for maintaining a healthy and sustainable environment.</p>

**Q. 36** Based on which committee recommendations, RBI introduced a comprehensive regulatory framework for NBFC-MFIs?

- a) Gadgil committee
- b) Malegam committee
- c) Kelkar committee
- d) Rangarajan committee

The correct answer is **Malegam Committee**.

The Reserve Bank of India (RBI) introduced a comprehensive regulatory framework for **NBFC-MFIs (Non-Banking Financial Companies-Microfinance Institutions)** based on the recommendations of the **Malegam Committee**. This committee was formed to address concerns in the microfinance sector, such as over-indebtedness and customer protection. Its report, submitted in **2011**, led to the establishment of specific guidelines for NBFC-MFIs, including qualifying asset criteria, fair practices, and interest rate caps, ensuring better regulation and transparency in the sector.

**Q. 37** After Mahatma Gandhi's release from prison in January 1931, Congress leaders met at \_\_\_\_ to plan the future course of action.

- a) Surat
- b) Allahabad
- c) Calcutta
- d) Lahore

The correct answer is **Allahabad**.

After Mahatma Gandhi's release from prison in January 1931, Congress leaders convened in **Allahabad** to strategize the next steps for India's freedom movement. The meeting was held at Swaraj Bhawan, a significant venue in the Indian independence struggle. This gathering was crucial in shaping the future course of action, including discussions on the Civil Disobedience Movement and negotiations with the British government.

Q. 38	<p>In business, what is a 'supply chain'?</p> <p>a) A series of businesses that supply products to one another </p> <p>b) The chain of command in a corporation </p> <p>c) A network of all entities involved in producing and delivering a product </p> <p>d) The total stock of a product in a market </p>
Explanation:	<p>The correct answer is: <b>A network of all entities involved in producing and delivering a product.</b></p> <p>A <b>supply chain</b> refers to the interconnected network of organizations, people, activities, information, and resources involved in producing a product or delivering a service. It encompasses every stage, from sourcing raw materials to manufacturing, distributing, and delivering the final product to the customer. Effective supply chain management ensures efficiency, cost reduction, and timely delivery.</p>
Q. 39	<p>In 1962, who published 'The History of Ocean Basins', which outlined the theory of how tectonic plates could move, later called 'sea floor spreading'?</p> <p>a) Louis Bauer </p> <p>b) Alfred Wegener </p> <p>c) George Edward Backus </p> <p>d) Harry Hammond Hess </p>
Explanation:	<p>The correct answer is <b>Harry Hammond Hess</b>.</p> <p>In <b>1962</b>, Harry Hammond Hess published "<b>The History of Ocean Basins</b>", a groundbreaking work that outlined the theory of <b>sea floor spreading</b>. This theory explained how tectonic plates move apart at mid-ocean ridges, allowing magma to rise and create new oceanic crust. Hess's work provided a crucial mechanism for Alfred Wegener's earlier hypothesis of <b>continental drift</b>, revolutionizing our understanding of Earth's geology and paving the way for the modern theory of <b>plate tectonics</b>.</p>

Q. 40	<p>What is the name of the highest peak of Indian Garhwal Himalayas located in Chamoli district of Uttarakhand state with a height of 7,816 metres?</p> <p>a) Mukut Parbat </p> <p>b) Hardeol </p> <p>c) Trisul </p> <p>d) Nanda Devi </p>
<b>Explanation:</b>	<p>The correct answer is <b>Nanda Devi</b>.</p> <p><b>Nanda Devi</b> is the highest peak in the Indian Garhwal Himalayas, located in the <b>Chamoli district of Uttarakhand</b>, with a towering height of <b>7,816 metres</b>. It is also the second-highest peak in India after Kangchenjunga. Nanda Devi holds immense cultural and spiritual significance and is part of the <b>Nanda Devi National Park</b>, a UNESCO World Heritage Site renowned for its stunning biodiversity.</p>

Q. 41	<p>For strengthening the fundamental duties, the Verma Committee identified a few existing acts by which a proper implementation of such duties can be accomplished. Which of the following was NOT referred by him?</p> <p>a) Representation of People Act, 1951 </p> <p>b) Protection of Civil Rights Act, 1955 </p> <p>c) Unlawful Activities Protection Act, 1967 </p> <p>d) Wildlife Segregation Act, 1970 </p>
<b>Explanation:</b>	<p>The correct answer is <b>Wildlife Segregation Act, 1970</b>.</p> <p>The <b>Verma Committee on Fundamental Duties (1999)</b> identified several existing laws to strengthen the implementation of fundamental duties. These included acts like the <b>Representation of People Act, 1951</b>, the <b>Protection of Civil Rights Act, 1955</b>, and the <b>Unlawful Activities (Prevention) Act, 1967</b>, which align with the spirit of fundamental duties. However, the <b>Wildlife Segregation Act, 1970</b> is not a recognized law and was not referred to by the committee.</p>

Q. 42	<p>Which of the following committees was responsible for making recommendations that led to the 42<sup>nd</sup> Constitutional Amendment for the declaration of Fundamental Duties?</p> <p>a) Swaran Singh Committee ✓</p> <p>b) Abid Hussain Committee ✗</p> <p>c) Khusro Committee ✗</p> <p>d) Raja Chelliah Committee ✗</p>
Explanation:	<p>The correct answer is <b>Swaran Singh Committee</b>.</p> <p>The <b>Swaran Singh Committee</b> was responsible for making recommendations that led to the inclusion of <b>Fundamental Duties</b> in the Indian Constitution through the <b>42nd Constitutional Amendment Act, 1976</b>. The committee was formed in 1976 during the Emergency period to emphasize the responsibilities of citizens alongside their rights. Based on its recommendations, <b>Article 51A</b> was added, listing ten Fundamental Duties for Indian citizens.</p>
Q. 43	<p>Krishna Rao Shankar Pandit and Raja Bhaiya Poonchwale are associated with which Gharana?</p> <p>a) Jaipur Atrauli Gharana ✗</p> <p>b) Gwalior Gharana ✓</p> <p>c) Agra Gharana ✗</p> <p>d) Lucknow Gharana ✗</p>
Explanation:	<p>The correct answer is <b>Gwalior Gharana</b>.</p> <p>Both <b>Krishna Rao Shankar Pandit</b> and <b>Raja Bhaiya Poonchwale</b> are prominent figures associated with the <b>Gwalior Gharana</b>, one of the oldest and most influential gharanas in Hindustani classical music. Known for its khayal singing style, the Gwalior Gharana emphasizes clarity, systematic raga development, and voice culture. These musicians significantly contributed to the propagation and development of this gharana, leaving a lasting legacy in Indian classical music.</p>

Q. 44

Who among the following is NOT an Odissi dancer?

- a) Anita Ratnam ✓
- b) Kumkum Mohanty ✗
- c) Sonal Mansingh ✗
- d) Protima Bedi ✗

**Explanation:**

The correct answer is **Anita Ratnam**.

**Anita Ratnam** is primarily known for her work in **Bharatanatyam, Mohiniattam**, and **Kathakali**, not Odissi. She has developed a unique dance style called "Neo Bharatam," which blends traditional and contemporary elements.

The other options—**Kumkum Mohanty, Sonal Mansingh**, and **Protima Bedi**—are all renowned Odissi dancers who have significantly contributed to this classical dance form.

Q. 45

'Castling' is related to which of the following sports?

- a) Table Tennis ✗
- b) Billiards ✗
- c) Tennis ✗
- d) Chess ✓

**Explanation:**

The correct answer is **Chess**.

**Castling** is a special move in chess that involves both the king and a rook. It is the only move in chess where a player moves two pieces simultaneously. The king moves two squares towards a rook on its initial square, and the rook jumps to the square next to the king on the opposite side. This move helps protect the king and connect the rooks, improving the player's position.

Q. 46	<p>In Pradhan Mantri Gramin Awaas yojana, the cost of unit assistance is shared between Central and State Governments in the ratio _____ in plain areas.</p> <p>a) 60 : 40 ✓ b) 40 : 60 ✗ c) 90 : 10 ✗ d) 30 : 70 ✗</p>
Explanation:	<p>The correct answer is <b>60:40</b>.</p> <p>Under the <b>Pradhan Mantri Gramin Awaas Yojana (PMGAY)</b>, the cost of unit assistance for housing in <b>plain areas</b> is shared between the <b>Central Government</b> and the <b>State Governments</b> in the ratio of <b>60:40</b>. However, for hilly states, the Northeastern states, and Union Territories, the cost-sharing ratio is <b>90:10</b>, recognizing the unique geographic and economic challenges in these regions. This scheme aims to provide affordable and quality housing for rural households.</p>
Q. 47	<p>Who was the first Asian woman to win the best director award at the Academy Awards?</p> <p>a) Mati Diop ✗ b) Chloe Zhao ✓ c) Chantal Akerman ✗ d) Jennifer Lee ✗</p>
Explanation:	<p>The correct answer is <b>Chloe Zhao</b>.</p> <p><b>Chloe Zhao</b>, a Chinese-born filmmaker, became the first Asian woman to win the <b>Best Director</b> award at the <b>Academy Awards</b> in <b>2021</b>. She received this honour for her film "<b>Nomadland</b>", which also won the <b>Best Picture</b> award. Her win marked a historic moment, as she was only the second woman ever to win in this category.</p>

Q. 48	<p>In which year did Babur defeat Rana Sanga, Rajput rulers and allies at Khanwa?</p> <p>a) 1530 </p> <p>b) 1528 </p> <p>c) 1526 </p> <p>d) 1527 </p>
<b>Explanation:</b>	<p>The correct answer is <b>1527</b>.</p> <p>Babur defeated Rana Sanga and his Rajput allies in the <b>Battle of Khanwa</b> on <b>16 March 1527</b>. This battle was a decisive engagement that solidified Babur's position in northern India after his earlier victory at the First Battle of Panipat in 1526. The use of advanced military tactics, including gunpowder and artillery, played a crucial role in Babur's victory. This triumph marked a significant step in establishing the Mughal Empire in India.</p>
Q. 49	<p><b>Ungalil Oruvan'</b> (One Among You) is the autobiography of which of the following chief ministers?</p> <p>a) MK Stalin </p> <p>b) K Chandrashekhar Rao </p> <p>c) Basavaraj Bommai </p> <p>d) Pinarayi Vijayan </p>
<b>Explanation:</b>	<p>The correct answer is <b>MK Stalin</b>.</p> <p>"<b>Ungalil Oruvan"</b> (One Among You) is the autobiography of <b>MK Stalin</b>, the Chief Minister of Tamil Nadu and the president of the Dravida Munnetra Kazhagam (DMK) party. This book provides insights into his early life, political journey, and personal experiences. It reflects his connection with the people and his vision for Tamil Nadu's development.</p>

Q. 50	<p><b>Sangeet Kala Acharya Award</b> is given by which organisation every year since 1993?</p> <p>a) Madras Music Academy ✓</p> <p>b) Calcutta School of Music ✗</p> <p>c) Shankar Mahadevan Academy ✗</p> <p>d) Subramaniam Academy of Performing Arts ✗</p>
<b>Explanation:</b>	<p>The correct answer is: <b>Madras Music Academy</b>.</p> <p>The <b>Sangeet Kala Acharya Award</b> has been conferred annually by the <b>Madras Music Academy</b> since 1993. This prestigious award recognizes senior musicians and preceptors who have made significant contributions to Indian classical music, particularly in nurturing and bringing disciples to the concert platform. It is one of the many accolades presented by the Academy to honor excellence in the arts.</p>

Q. 51	<p>Select the option that can be used as a one-word substitute for the given phrase. <b>Incapable of being corrected or reformed.</b></p> <p>a) <b>Incorrigible</b> ✓</p> <p>b) <b>Irreparable</b> ✗</p> <p>c) <b>Irresistible</b> ✗</p> <p>d) <b>Inevitable</b> ✗</p>
<b>Explanation:</b>	<p>The correct answer is <b>Incorrigible</b>.</p> <p><b>Explanation:</b></p> <ul style="list-style-type: none"> <li>• <b>Incorrigible</b> means incapable of being corrected, reformed, or improved. It refers to a person or behavior that is resistant to change or improvement.</li> <li>• <b>Irreparable</b> means something that cannot be repaired, but it doesn't necessarily imply that it can't be corrected or reformed (like a broken object, not a person).</li> <li>• <b>Irresistible</b> means something that is too attractive or appealing to resist.</li> <li>• <b>Inevitable</b> refers to something that is certain to happen and cannot be avoided.</li> </ul> <p>Thus, <b>Incorrigible</b> is the most fitting word for "incapable of being corrected or reformed."</p>

Q. 52	<p>The following sentence has been divided into four segments. Identify the segment that contains an error.</p> <p><b>He hanged his / head in shame / when he came to know / of his son's mischief.</b></p> <p>a) He hanged his ✓</p> <p>b) when he ✗</p> <p>c) of his son's mischief ✗</p> <p>d) head in shame ✗</p>
Explanation:	<p>The correct answer is "<b>He hanged his</b>".</p> <p><b>Explanation:</b> The error lies in the use of "hanged" in this context. The verb "<b>hang</b>" is irregular, and its correct form depends on the context:</p> <ul style="list-style-type: none"> <li>"<b>Hanged</b>" is used specifically for <b>executions</b> or when someone is put to death by hanging.</li> <li>"<b>Hung</b>" is the correct past tense form used in other contexts, such as when referring to something like a head or an object being suspended.</li> </ul> <p>In the given sentence, the correct phrase should be "<b>He hung his head in shame</b>", as it refers to lowering the head in a gesture of shame or regret.</p>
Q. 53	<p>Select the INCORRECTLY spelt word.</p> <p>a) Bureaucracy ✗</p> <p>b) Benefitted ✗</p> <p>c) Begining ✓</p> <p>d) Business ✗</p> <p>The incorrectly spelled word is Beginning.</p> <p><b>Explanation:</b></p> <ul style="list-style-type: none"> <li><b>Bureaucracy:</b> Correct spelling. Refers to a system of government or management in which decisions are made by state officials rather than by elected representatives.</li> <li><b>Benefitted:</b> Correct spelling. It is the past tense of "benefit" and refers to receiving an advantage or gain.</li> <li><b>Begining:</b> Incorrect spelling. The correct spelling is <b>Beginning</b>, which is the present participle of "begin" and refers to the start of something.</li> <li><b>Business:</b> Correct spelling. Refers to the activity of buying and selling goods and services.</li> </ul> <p>So, the correct word should be <b>Beginning</b>, not Beginning.</p>

Q. 54	<p>Select the most appropriate meaning of the underlined idiom.</p> <p>Anand personally believes in the motto, Sita often reminds herself, "<u>The early bird catches the worm</u>."</p> <p>a) Time management is important to succeed </p> <p>b) Procrastination is bad </p> <p>c) Starting early leads to success </p> <p>d) Hard work always pays off </p>
Explanation:	<p>The correct answer is: Starting early leads to success</p> <p><b>Explanation:</b></p> <ul style="list-style-type: none"> <li>The idiom "The early bird catches the worm" means that those who start early or act promptly have a better chance of success.</li> <li>It emphasizes the importance of taking initiative early rather than delaying or procrastinating.</li> <li>While time management and hard work are related concepts, the idiom specifically highlights the advantage of starting early.</li> </ul> <p>Thus, the most appropriate meaning is starting early leads to success.</p>
Q. 55	<p>Identify the INCORRECTLY spelt word in the following sentence.</p> <p>The athlete was determined to achieve his goal despite the challenges.</p> <p>a) athlete </p> <p>b) determined </p> <p>c) achieve </p> <p>d) challenges </p> <p>The incorrectly spelled word is achieve.</p> <p><b>Explanation:</b></p> <ul style="list-style-type: none"> <li>athlete: Correct spelling. Refers to a person who competes in sports or other physical activities.</li> <li>determined: Correct spelling. Means being resolute or having a strong will to achieve something.</li> <li>achieve: Incorrect spelling. The correct spelling is <b>achieve</b>, which means to successfully reach a goal or accomplish something.</li> <li>challenges: Correct spelling. Refers to tasks or situations that are difficult and require effort to overcome.</li> </ul> <p>So, the correct spelling is <b>achieve</b>, not achieve.</p>

**Q. 56**

Select the most appropriate ANTONYM of the given word.

**Sagacious**

- a) Wise X
- b) Prudent X
- c) Intelligent X
- d) Foolish ✓

The **most appropriate antonym** of **Sagacious** is **Foolish**.

**Explanation:**

- **Sagacious** means having or showing good judgment and wisdom; it refers to someone who is wise and shrewd.
- **Wise** is a synonym of sagacious, not an antonym.
- **Foolish** is the correct antonym because it refers to someone who lacks good judgment or wisdom.
- **Intelligent** is related to the ability to learn or understand, but it doesn't specifically address wisdom or judgment.
- **Prudent** also refers to being wise or careful, similar to sagacious, so it is not the antonym.

Thus, **Foolish** is the opposite of **Sagacious**, as it implies a lack of wisdom or judgment.

**Q. 57**

Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

- A. On the day, people smear and drench each other with colours.  
B. Children spraying colours on one another with water guns and water-filled balloons is a common sight.  
C. Holi is also known as the Festival of Spring. It is a time to bid farewell to the winter and relish the spring with its freshness and gaiety.  
D. Holi is the festival of colours. It is celebrated in the full moon of the Telugu month 'Phalguna'.

- a) BCAD
- b) DABC
- c) CBAD
- d) ADCB

The correct order is DABC.

**Explanation:**

1. D: "Holi is the festival of colours. It is celebrated in the full moon of the Telugu month 'Phalguna'." — This sentence introduces the topic of the paragraph, stating that Holi is a festival and mentioning the month when it is celebrated.
2. A: "On the day, people smear and drench each other with colours." — This sentence explains what happens on the day of Holi.
3. B: "Children spraying colours on one another with water guns and water-filled balloons is a common sight." — This sentence provides more details on how people, especially children, celebrate Holi.
4. C: "Holi is also known as the Festival of Spring. It is a time to bid farewell to the winter and relish the spring with its freshness and gaiety." — This sentence gives additional context about the significance of Holi, marking the transition from winter to spring.

Thus, the correct sequence of sentences is DABC.

Q. 58

Select the most appropriate synonym of the given word.

**Cumbersome**

- a) Convenient X
- b) Awkward ✓
- c) Light X
- d) Simple X

The most appropriate synonym of **Cumbersome** is **Awkward**.

**Explanation:**

- **Cumbersome** refers to something that is large, heavy, and difficult to manage or carry, often due to its complexity or size.
- **Convenient** is the opposite of cumbersome, as it refers to something easy to use or handle.
- **Awkward** refers to something that is difficult to handle or uncomfortable, which aligns with the meaning of **cumbersome**.
- **Light** refers to something that is not heavy, which is the opposite of **cumbersome**.
- **Simple** also contrasts with **cumbersome**, as simple things are easy to understand or do, while cumbersome things are complex or difficult to manage.

Thus, **Awkward** is the most appropriate synonym for **Cumbersome** because both involve difficulty in handling or dealing with something.

**Q. 59**

Select the most appropriate ANTONYM of the underlined word in the given sentence.

The painting looked very complex with its intricate details.

a) Simple ✓

b) Complicated ✗

c) Detailed ✗

d) Elaborate ✗

The correct answer is: Simple

**Explanation:**

- The underlined word **complex** means something that is complicated or intricate, with many interconnected parts or details.
- The antonym of **complex** is **simple**, which means something that is easy to understand or not complicated.
- The other options are either synonyms or unrelated:
  - **Complicated:** Similar in meaning to complex.
  - **Detailed:** Refers to something with many details, which is related but not an antonym.
  - **Elaborate:** Means something that is intricately designed, which is also similar in meaning to complex.

Thus, the most appropriate antonym is simple.

Q. 60

Select the option that correctly expresses the given sentence in passive voice.

The teacher praised the students for their hard work.

a) The students are praised by the teacher for their hard work. X

b) The students were praised by the teacher for their hard work. ✓

c) The students have been praised by the teacher for their hard work. X

d) The students were being praised by the teacher for their hard work. X

The correct option is: The students were praised by the teacher for their hard work.

**Explanation:**

**Active Voice:** "The teacher praised the students for their hard work."

**Explanation:**

The subject ("The teacher") performs the action of praising.

**Passive Voice:** In passive voice, the subject becomes the object, and the object becomes the subject. The structure changes to emphasize the action on the subject.

**Correct Passive Conversion:** "The students were praised by the teacher for their hard work."

Q. 61

Select the most appropriate synonym to replace the underlined word in the given sentence.

The audience was transfixed by the magician's performance.

a) Bored X

b) Mesmerized ✓

c) Distracted X

d) Confused X

The most appropriate synonym to replace "transfixed" in the given sentence is **Mesmerized**.

**Explanation:**

**Explanation:**

- **Transfixed** means to be so fascinated or absorbed that one cannot move or look away, often due to intense interest or wonder.
- **Mesmerized** is a synonym for transfixed because it also means to be deeply absorbed or spellbound, typically by something fascinating or captivating, such as a magician's performance.

Q. 62	<p>The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options.</p> <p><b>As the meeting / was about to end / he insisted to ask / several questions.</b></p> <p>a) several questions <input checked="" type="checkbox"/></p> <p>b) As the meeting <input checked="" type="checkbox"/></p> <p>c) he insisted to ask <input checked="" type="checkbox"/></p> <p>d) was about to end <input checked="" type="checkbox"/></p>
<b>Explanation:</b>	<p>The part that contains an error is "he insisted to ask".</p> <p><b>Explanation:</b></p> <p>The correct usage is "<b>he insisted on asking</b>", not "he insisted to ask." When using the verb "insist", it is typically followed by "on" and the -ing form of the verb (gerund). So, the correct sentence would be:</p> <p><b>"As the meeting was about to end, he insisted on asking several questions."</b></p>
Q. 63	<p>Select the most appropriate ANTONYM of the given word.</p> <p><b>Mundane</b></p> <p>a) Ordinary <input checked="" type="checkbox"/></p> <p>b) Routine <input checked="" type="checkbox"/></p> <p>c) Extraordinary <input checked="" type="checkbox"/></p> <p>d) Commonplace <input checked="" type="checkbox"/></p> <p>The most appropriate antonym of <b>Mundane</b> is <b>Extraordinary</b>.</p> <p><b>Explanation:</b></p> <ul style="list-style-type: none"> <li>• <b>Mundane</b> means something that is dull, ordinary, or lacking in excitement, typically referring to things that are everyday or routine.</li> </ul> <p>Let's look at the options:</p> <ul style="list-style-type: none"> <li>• <b>Ordinary</b> is a synonym of <b>mundane</b> because it refers to something common and unremarkable.</li> <li>• <b>Routine</b> also means something regular or habitual, which is similar to <b>mundane</b>.</li> <li>• <b>Extraordinary</b> is the correct antonym because it refers to something remarkable, special, or out of the ordinary, which contrasts with the dullness or routine implied by <b>mundane</b>.</li> <li>• <b>Commonplace</b> also means ordinary or typical, so it is another synonym for <b>mundane</b>.</li> </ul>

Q. 64	<p>Select the option that correctly expresses the following sentence in passive voice.</p> <p>Who has broken the window?</p> <p>a) By whom has the window been broken? </p> <p>b) By whom the window has been broken? </p> <p>c) By whom is the window broken? </p> <p>d) By whom the window is broken? </p>
<b>Explanation:</b>	<p>The correct option is: By whom has the window been broken?</p> <p><b>Explanation:</b></p> <p>Active Voice: "Who has broken the window?"</p> <p>The subject ("Who") performs the action of breaking the window.</p> <p><b>Passive Voice:</b> In passive voice, the object (the window) comes first, and the question is rephrased to focus on the action done to the object.</p> <p><b>Correct Passive Conversion:</b> "By whom has the window been broken?"</p>
Q. 65	<p>Select the most appropriate option to fill in the blank.</p> <p>The athlete had to _____ his diet to improve his performance.</p> <p>a) Neglect </p> <p>b) Worsen </p> <p>c) Modify </p> <p>d) Ignore </p>
<b>Explanation:</b>	<p>The correct option is: <b>Modify</b></p> <p><b>Explanation:</b></p> <p>The sentence emphasizes that the athlete made changes to his diet to enhance his performance. The verb "modify" means to adjust or make small changes to improve something, which fits perfectly here.</p>

Q. 66

Select the most appropriate option to fill in the blank.

The detective finally \_\_\_\_\_ and solved the mystery that had puzzled everyone.

- a) connected the dots ✓
- b) burned the midnight oil ✗
- c) let the cat out of the bag ✗
- d) threw in the towel ✗

The correct answer is: **connected the dots**

**Explanation:**

- The idiom "**connected the dots**" means to understand the relationship between different pieces of information or events, leading to a clear conclusion.
- In this context, the detective solved the mystery by understanding how different clues or facts were related.
- The other idioms do not fit the context:
  - **Burned the midnight oil:** Worked late into the night.
  - **Let the cat out of the bag:** Revealed a secret.
  - **Threw in the towel:** Gave up or quit.

Thus, the most appropriate option is **connected the dots**.

Q. 67

The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options.

Our country need / a number of / self sacrificing and / devoted political leaders.

- a) a number of ✗
- b) self sacrificing and ✗
- c) Our country need ✓
- d) devoted political leaders ✗

The part that contains an error is "**Our country need**".

**Explanation:** The subject "**Our country**" is singular, so the verb should be in the singular form as well. The correct form of the verb is "**needs**", not "need."

The correct sentence should be:

**"Our country needs a number of self-sacrificing and devoted political leaders."**

**Q. 68**

Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

- A. Humans have long found meaning in the stars.
- B. Other shimmery structures became known to us after the invention of the telescope.
- C. A few nearby galaxies have always been visible to the naked eye.
- D. But only recently have we begun to understand whole clusters of them.

- a) BDCA X
- b) ADCB ✓
- c) DACB X
- d) CDBA X

Correct answer: ADCB

**Explanation:**

A: "Humans have long found meaning in the stars."

This introduces the general idea of humanity's connection to stars and sets the context.

D: "But only recently have we begun to understand whole clusters of them."

**Explanation:** This provides a contrasting, modern perspective, indicating progress over time.

C: "A few nearby galaxies have always been visible to the naked eye."

This details early human observations, adding depth to the historical perspective.

B: "Other shimmery structures became known to us after the invention of the telescope."

This ties the paragraph together by explaining how technological advances expanded our understanding.

Q. 69	<p>Select the option that can be used as a one-word substitute for the given group of words.</p> <p><b>A place where clothes are kept</b></p> <p>a) Wardrobe ✓</p> <p>b) Closet ✗</p> <p>c) Cupboard ✗</p> <p>d) Almirah ✗</p>
<b>Explanation:</b>	<p>The correct answer is <b>Wardrobe</b>.</p> <p><b>Explanation:</b></p> <ul style="list-style-type: none"> <li>• <b>Wardrobe</b> refers to a large, often tall, piece of furniture or a room where clothes are stored. It is specifically designed for keeping clothes.</li> <li>• <b>Closet</b> is another valid option, but it typically refers to a smaller space, often used for storing clothes or other items. In many contexts, <b>closet</b> and <b>wardrobe</b> can be used interchangeably, but <b>wardrobe</b> is more specific to clothing storage.</li> <li>• <b>Cupboard</b> is a storage space, but it is usually used for dishes, food, or other household items, not specifically for clothes.</li> <li>• <b>Almirah</b> is a term commonly used in South Asia, similar to a wardrobe or cupboard, but the most general and common one-word substitute for a place where clothes are kept is <b>wardrobe</b>.</li> </ul> <p>Thus, <b>Wardrobe</b> is the most appropriate choice for a place where clothes are kept.</p>
Q. 70	<p>Select the most appropriate option that can substitute the underlined segment in the given sentence.</p> <p>The author advised aspiring writers to _____ in order to improve their craft.</p> <p>a) read widely and practice consistently ✓</p> <p>b) avoid experimenting with new styles ✗</p> <p>c) focus only on one genre ✗</p> <p>d) ignore feedback from readers ✗</p>
<b>Explanation:</b>	<p>The most appropriate option to substitute the underlined segment in the given sentence is "<b>read widely and practice consistently</b>".</p> <p><b>Explanation:</b></p> <p>"<b>Read widely and practice consistently</b>" is a well-rounded and constructive piece of advice for writers. It suggests that aspiring writers should broaden their knowledge by reading a variety of materials and improve their writing through regular practice. This is a common recommendation for writers looking to improve their craft.</p>

**Q. 71**

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

Anime, a distinctive style of animation originating in Japan, has become a global phenomenon. It is (1)\_\_\_\_\_ by its vibrant artwork, fantastical themes, and colorful characters. Anime is not just a form of entertainment; it is deeply (2)\_\_\_\_\_ in Japanese culture and has influenced various aspects of society, including fashion, art, and even language.

The history of anime dates back to the early 20th century, but it gained widespread popularity in the 1960s with the rise of television. Today, anime is enjoyed by people of all ages and has a diverse range of (3)\_\_\_\_\_, from action and adventure to romance and science fiction. One of the reasons for its global appeal is its ability to tell compelling stories that resonate with audiences worldwide.

In Japan, anime is not just a medium for storytelling; it is also a significant part of the economy. The anime industry generates billions of dollars annually through merchandise, licensing, and international distribution. Festivals and conventions dedicated to anime are (4)\_\_\_\_\_ throughout the year, attracting fans from around the world.

Despite its success, the anime industry faces challenges, such as tight production schedules and the pressure to meet high-quality standards. However, the passion and creativity of anime creators continue to drive the industry forward, ensuring (5)\_\_\_\_\_ growth and evolution.

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

- a) Transfixed
- b) Developed
- c) Characterized
- d) Enhanced

**Explanation:**

The most appropriate option to fill in blank number 1 is **Characterized**.

Explanation:

- **Characterized** means to be defined or distinguished by specific traits or features. In the context of the sentence, it refers to how anime is marked or recognized by its vibrant artwork, fantastical themes, and colorful characters.

Let's look at the other options:

- **Transfixed** means to be mesmerized or absorbed, which doesn't fit the context of describing anime's features.
- **Developed** refers to the process of growth or creation, but it doesn't convey the idea of defining traits.
- **Enhanced** means improved or made better, but it's not the right word to describe what anime is distinguished by.

Therefore, the correct word is Characterized because it appropriately describes the distinctive features of anime.

**Q. 72**

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

Anime, a distinctive style of animation originating in Japan, has become a global phenomenon. It is (1)\_\_\_\_\_ by its vibrant artwork, fantastical themes, and colorful characters. Anime is not just a form of entertainment; it is deeply (2)\_\_\_\_\_ in Japanese culture and has influenced various aspects of society, including fashion, art, and even language.

The history of anime dates back to the early 20th century, but it gained widespread popularity in the 1960s with the rise of television. Today, anime is enjoyed by people of all ages and has a diverse range of (3)\_\_\_\_\_, from action and adventure to romance and science fiction. One of the reasons for its global appeal is its ability to tell compelling stories that resonate with audiences worldwide.

In Japan, anime is not just a medium for storytelling; it is also a significant part of the economy. The anime industry generates billions of dollars annually through merchandise, licensing, and international distribution. Festivals and conventions dedicated to anime are (4)\_\_\_\_\_ throughout the year, attracting fans from around the world.

Despite its success, the anime industry faces challenges, such as tight production schedules and the pressure to meet high-quality standards. However, the passion and creativity of anime creators continue to drive the industry forward, ensuring (5)\_\_\_\_\_ growth and evolution.

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

- a) Located
- b) Detached
- c) Embedded
- d) Resonated

**Explanation:**

The most appropriate option to fill in blank number 2 is **Embedded**.

Explanation:

- **Embedded** means deeply integrated or firmly established within something. In this context, it suggests that anime is deeply rooted or an essential part of Japanese culture, influencing various aspects of society.

Let's look at the other options:

- **Located** means situated or found, but it doesn't convey the idea of being a fundamental part of something, like culture.
- **Detached** means separated or disconnected, which is the opposite of what the sentence intends to convey (that anime is deeply a part of Japanese culture).
- **Resonated** means to have an emotional impact or to be in harmony with something, which doesn't fit in this context because we are talking about anime being a fundamental part of culture, not about emotional or thematic resonance.

Therefore, **Embedded** is the most fitting choice because it indicates that anime is an integral and influential part of Japanese culture.

**Q. 73**

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

Anime, a distinctive style of animation originating in Japan, has become a global phenomenon. It is (1)\_\_\_\_\_ by its vibrant artwork, fantastical themes, and colorful characters. Anime is not just a form of entertainment; it is deeply (2)\_\_\_\_\_ in Japanese culture and has influenced various aspects of society, including fashion, art, and even language.

The history of anime dates back to the early 20th century, but it gained widespread popularity in the 1960s with the rise of television. Today, anime is enjoyed by people of all ages and has a diverse range of (3)\_\_\_\_\_, from action and adventure to romance and science fiction. One of the reasons for its global appeal is its ability to tell compelling stories that resonate with audiences worldwide.

In Japan, anime is not just a medium for storytelling; it is also a significant part of the economy. The anime industry generates billions of dollars annually through merchandise, licensing, and international distribution. Festivals and conventions dedicated to anime are (4)\_\_\_\_\_ throughout the year, attracting fans from around the world.

Despite its success, the anime industry faces challenges, such as tight production schedules and the pressure to meet high-quality standards. However, the passion and creativity of anime creators continue to drive the industry forward, ensuring (5)\_\_\_\_\_ growth and evolution.

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

- a) Kinds
- b) Exemption
- c) Popularities
- d) Genres

The most appropriate option to fill in blank number 3 is **Genres**.

Explanation:

- **Genres** refers to different categories or types of content, such as action, romance, or science fiction. In the context of anime, it makes sense to refer to the various genres or categories that anime covers.

Let's look at the other options:

- **Kinds** is a broad term and could work, but it is less specific than genres, which is the commonly used term to describe different types of entertainment, including anime.
- **Exemption** refers to being excluded or exempt from something, which does not fit the context of describing types of anime.
- **Popularities** refers to the state of being popular, which does not describe the different types of anime.

Therefore, **Genres** is the most suitable word because it specifically refers to the various types or categories of anime, such as action, romance, and science fiction.

**Q. 74**

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

Anime, a distinctive style of animation originating in Japan, has become a global phenomenon. It is (1)\_\_\_\_\_ by its vibrant artwork, fantastical themes, and colorful characters. Anime is not just a form of entertainment; it is deeply (2)\_\_\_\_\_ in Japanese culture and has influenced various aspects of society, including fashion, art, and even language.

The history of anime dates back to the early 20th century, but it gained widespread popularity in the 1960s with the rise of television. Today, anime is enjoyed by people of all ages and has a diverse range of (3)\_\_\_\_\_, from action and adventure to romance and science fiction. One of the reasons for its global appeal is its ability to tell compelling stories that resonate with audiences worldwide.

In Japan, anime is not just a medium for storytelling; it is also a significant part of the economy. The anime industry generates billions of dollars annually through merchandise, licensing, and international distribution. Festivals and conventions dedicated to anime are (4)\_\_\_\_\_ throughout the year, attracting fans from around the world.

Despite its success, the anime industry faces challenges, such as tight production schedules and the pressure to meet high-quality standards. However, the passion and creativity of anime creators continue to drive the industry forward, ensuring (5)\_\_\_\_\_ growth and evolution.

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

- a) Hold
- b) Held
- c) Holded
- d) Withhold

**Explanation:**

The most appropriate option to fill in blank number 4 is **Held**.

Explanation:

- **Held** is the past tense of "hold" and is used here to indicate that festivals and conventions are regularly conducted or organized throughout the year. This fits the context of the sentence because it talks about events that take place in the past and continue regularly.

Let's look at the other options:

- **Hold** is the base form of the verb and doesn't fit because the sentence is describing an event that happens repeatedly or continuously throughout the year, so it needs to be in the past tense.
- **Holded** is not a correct form of the verb "hold" in any tense. The correct past tense form is "held."
- **Withhold** means to keep something back or not give it, which is completely unrelated to the context of organizing or holding festivals.

Therefore, **Held** is the correct option because it refers to events that have been and are regularly conducted.

Q. 75

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

Anime, a distinctive style of animation originating in Japan, has become a global phenomenon. It is (1)\_\_\_\_\_ by its vibrant artwork, fantastical themes, and colorful characters. Anime is not just a form of entertainment; it is deeply (2)\_\_\_\_\_ in Japanese culture and has influenced various aspects of society, including fashion, art, and even language.

The history of anime dates back to the early 20th century, but it gained widespread popularity in the 1960s with the rise of television. Today, anime is enjoyed by people of all ages and has a diverse range of (3)\_\_\_\_\_, from action and adventure to romance and science fiction. One of the reasons for its global appeal is its ability to tell compelling stories that resonate with audiences worldwide.

In Japan, anime is not just a medium for storytelling; it is also a significant part of the economy. The anime industry generates billions of dollars annually through merchandise, licensing, and international distribution. Festivals and conventions dedicated to anime are (4)\_\_\_\_\_ throughout the year, attracting fans from around the world.

Despite its success, the anime industry faces challenges, such as tight production schedules and the pressure to meet high-quality standards. However, the passion and creativity of anime creators continue to drive the industry forward, ensuring (5)\_\_\_\_\_ growth and evolution.

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

- a) Their
- b) It's
- c) There
- d) Its

The most appropriate option to fill in blank number 5 is **Its**.

**Explanation:**

- **Its** is the possessive form of "it," used to show ownership or association. In this case, "its" refers to "the anime industry" and describes the growth and evolution of the industry.

Let's look at the other options:

- **Their** is a possessive form for plural subjects, but the subject here is "the anime industry," which is singular, so "their" would be incorrect.
- **It's** is a contraction for "it is" or "it has," which doesn't fit the context. We need the possessive form, not the contraction.
- **There** is used to indicate a location or existence, but it doesn't make sense in this context where we're talking about the growth and evolution of the anime industry.

Therefore, **Its** is the correct choice because it correctly shows possession, referring to the growth and evolution of the anime industry.

**Q. 76**

If 12% of 25% of y is 300, then find y.

- a) 8000
- b) 10000
- c) 1000
- d) 15000

**Explanation:**

$$\frac{12}{100} \times \frac{25}{100} \times y = 300$$

$$y = \frac{300 \times 100 \times 100}{12 \times 25} = 10000$$

Q. 77

What is the minimum natural number that can be added to each term of the ratio 7: 9 so that the ratio becomes 5: 6?

- a) 2 X
- b) 3 ✓
- c) 4 X
- d) 5 X

Explanation:

Option 2 :

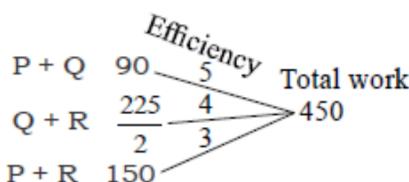
$$\frac{7+3}{9+3} = \frac{10}{12} = \frac{5}{6}$$

Q. 78

P and Q can do a job in 90 days, Q and R can do it in 112.5 days, while P and R can do it in 150 days. X is five times as efficient as P, Y is two-thirds as efficient as Q, and Z is 2.5 times as efficient as R. Determine the number of days required to complete the same job if X, Y and Z work together.

- a)  $31\frac{3}{29}$  X
- b)  $31\frac{1}{29}$  ✓
- c)  $30\frac{28}{29}$  X
- d)  $31\frac{2}{29}$  X

The correct answer is: b



Explanation:

$$P+Q+R = \frac{12}{2} = 6$$

$$\text{Effi of } P = 6 - 4 = 2 \text{ unit } x = 10$$

$$Q = 6 - 3 = 3 \text{ unit } y = 2$$

$$Z = 6 - 5 = 1 \text{ unit } z = 2.5$$

$$Time = \frac{450}{10 + 2 + 2.5}$$

$$= \frac{900}{29} = 31\frac{1}{29} \text{ days}$$

Q. 79

What will be difference in population 3 years ago and 2 years ago of a town, whose current population is 200000 and which is increasing at a rate of 25% every year?

- a) 25000 X
- b) 25300 X
- c) 25600 ✓
- d) 24000 X

The correct answer is: c

$$\text{Current Population} = 2,00,000$$

$$\begin{aligned}\text{Population 3 yrs ago} &= 2,00,000 \times \frac{4}{5} \times \frac{4}{5} \times \frac{4}{5} \\ &= 1,02,400\end{aligned}$$

$$\begin{aligned}\text{Population 2 yrs ago} &= 2,00,000 \times \frac{4}{5} \times \frac{4}{5} \\ &= 1,28,000\end{aligned}$$

$$\begin{aligned}\text{Difference} &= 1,28,000 - 1,02,400 \\ &= 25,600\end{aligned}$$

Explanation:

Q. 80

A cylindrical candle, 16 cm in diameter and 14 cm in length, is melted to form a cuboid candle of dimensions 8 cm  $\times$  11 cm  $\times$  2 cm. How many cuboidal candles can be obtained?

- a) 12 X
- b) 15 X
- c) 14 X
- d) 16 ✓

Let 'n' cuboidal candles can be obtained

Explanation:

$$\begin{aligned}n \times \text{Volume of cuboid} &= \text{Volume of cylinder} \\ n \times 8 \times 11 \times 2 &= \frac{22}{7} \times 8 \times 8 \times 14 \\ n &= 16.\end{aligned}$$

**Q. 81**

Emma traveled 345 km in 7 hours. In her total journey, she traveled the first part by bus at 45 km/hr and the remaining part by train at 60 km/hr. How much distance did she travel by train?

- a) 155 km X
- b) 120 km ✓
- c) 135 km X
- d) 165 km X

**Explanation:**

Let She travelled for 't' hours  
by bus

ATQ  $\frac{\text{Distance}}{\text{Time}} = \text{Speed}$

Bus  $\downarrow$  Train  $\downarrow$  Total distance  $\downarrow$

$$45t + 60(7-t) = 345$$

$$45t + 420 - 60t = 345$$

$$15t = 75 \Rightarrow t = 5$$

Distance travelled by train =  $60(7-t)$   
 $= 60 \times 2 = 120 \text{ km}$

**Q. 82**

What is the HCF of  $3^{29} - 9$  and  $3^{38} - 9$ ?

- a)  $3^9 - 1$  X
- b)  $3^{11} - 1$  X
- c)  $3^{11} - 9$  ✓
- d)  $3^{11} - 3$  X

**Explanation:**

$$3^{29} - 9 = 3^2 (3^{27} - 1)$$

$$3^{38} - 9 = 3^2 (3^{36} - 1)$$

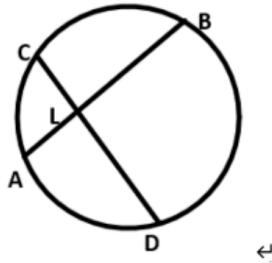
$$\text{HCF} = 3^2 * (3^{\text{hcf}(27 \& 36)} - 1) = 3^2(3^9 - 1) = 3^{11} - 9$$

Q. 83

In a circle, the chords AB and CD intersect each other at point L (internally). If AL = 8 cm, LB = 6 cm and LD = 5 cm, then find the CL.

- a) 7.6 cm X
- b) 10.6 cm X
- c) 9.6 cm ✓
- d) 8.6 cm X

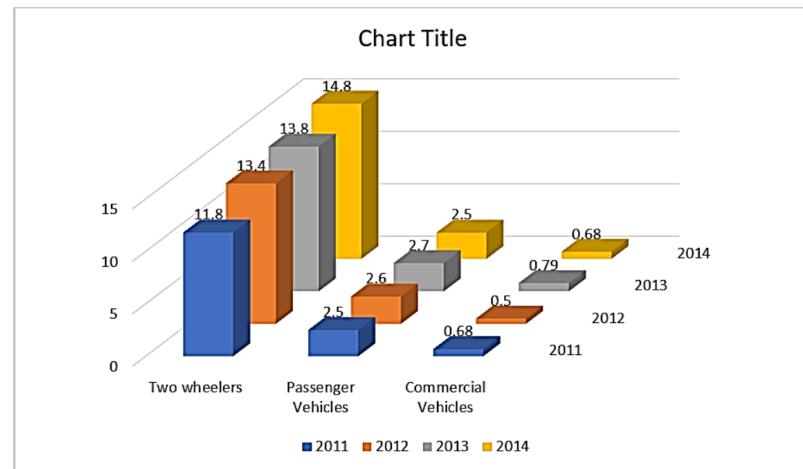
Explanation:



$$AL \times LB = CL \times LD$$
$$8 \times 6 = 5 \times CL \Rightarrow CL = 9.6 \text{ cm}$$

Q. 84

The given chart represents the sales of automobiles in India (by type, in million units) from the year 2011 to 2014. Study the chart and answer the question that follows.



The percentage increase in the sales in 2013 over the previous year was the maximum for which of the categories of vehicles?

- a) Two wheelers and Passenger vehicles X
- b) Commercial vehicles ✓
- c) Two wheelers X
- d) Passenger vehicles X

Explanation:

Two wheelers : Passanger : commercial  
 $(0.4/13.4) * 100\% : (0.1/2.6) * 100\% : (0.29/0.5) * 100\%$   
 Clearly Commercial vehicle has maximum increase

Q. 85

How much simple interest will ₹6,000 earn in 18 months at a 10% interest rate per annum?

- a) ₹800 X
- b) ₹600 X
- c) ₹500 X
- d) ₹900 ✓

Explanation:

$$S.I = \frac{PRT}{100} = \frac{6000 \times 18 \times 10}{12 \times 100}$$

$$= ₹900$$

Q. 86

An alloy contains the metals A, B and C in the ratio 2 : 3 : 1 and another contains the metals B, C and D in the ratio 5 : 4 : 3. If equal weights of both alloys are mixed together to form a third alloy, then how much part of the metal B is in new alloy?

- a)  $1/8$  X
- b)  $1/6$  X
- c)  $3/24$  X
- d)  $11/24$  ✓

Explanation:

$$\begin{array}{cccc}
 A & B & C & D \\
 2 \times 2 & 3 \times 2 & 1 \times 2 & ] 6 \times 2 \\
 & 5 & 4 & 3 ] 12 \\
 \hline
 4 & 11 & 6 & 3 = 24 \\
 B = \frac{11}{24}
 \end{array}$$

Q. 87

The number 123123123123 is:

- (a) divisible by both 6 and 11
  - (b) neither divisible by 6 nor by 11
  - (c) divisible by 6 only
  - (d) divisible by 11 only
- a) (b) X
  - b) (d) ✓
  - c) (a) X
  - d) (c) X

Explanation:

123123123123  
 Not divisible by 6  
 divisible by 11.  
 So, (d) is correct

Q. 88

If  $x^2 + 4y^2 + 2x + 1 = 0$ , then find the value of  $x^{39} + y^{36}$ .

- a) -2 X
- b) -1 ✓
- c) 2 X
- d) 1 X

Explanation:

$$\begin{aligned}x^2 + 2x + 1 + 4y^2 &= 0 \\(x+1)^2 + (2y)^2 &= 0 \Rightarrow x+1=0, 2y=0 \\x = -1, y &= 0 \\x^{39} + y^{36} &= (-1)^{39} + 0^{36} = -1\end{aligned}$$

Q. 89

If  $2a + 2b + c = 0$ , then find the value of  $\frac{4a^2 + 4b^2 + 4c^2}{5c^2 - 8ab}$ .

- a)  $2\sqrt{3}$  X
- b)  $-2\sqrt{3}$  X
- c) 1 ✓
- d) -1 X

Explanation:

$$\begin{aligned}2a + 2b + c &= 0, \text{ Put } a = 0 \\ \Rightarrow c &= -2b \\ \frac{4a^2 + 4b^2 + 4c^2}{5c^2 - 8ab} &= \frac{4b^2 + 4(-2b)^2}{5c^2 - 8(0)b} \\ &= \frac{4b^2 + 16b^2}{5(-2b)^2} = \frac{20b^2}{20b^2} = 1\end{aligned}$$

**Q. 90**

The volume of rectangular block is  $25920 \text{ m}^3$ . Its dimension are in the ratio of  $6 : 5 : 4$ . If the entire surface is polished at the rate 2 paise per  $100 \text{ m}^2$ , then find the total cost of polishing.

- a) ₹1.0656 ✓
- b) ₹1.1514 ✗
- c) ₹1.6651 ✗
- d) ₹1.3328 ✗

$$\Rightarrow 6x \times 5x \times 4x = 25920$$

$$\Rightarrow 120x^3 = 25920$$

$$\Rightarrow x^3 = 216$$

$$\Rightarrow x = 6$$

**Explanation:**

$$\begin{aligned} \text{TSA of block} &= 2(lb + bh + lh) \\ &= 2(6x \cdot 5x + 5x \cdot 4x + 4x \cdot 6x) \\ &= 2(30x^2 + 20x^2 + 24x^2) = 2 \times 74x^2 \\ &= 2 \times 74 \times 36 = 5328 \text{ m}^2 \\ \text{Total Cost of polishing} &= \frac{2}{100} \times \frac{5328}{100} \\ &= ₹1.0656 \end{aligned}$$

**Q. 91**

The value of  $\frac{17}{\sec^2 \theta} + 10 \sin^2 \theta + \frac{7}{1 + \cot^2 \theta}$  is:

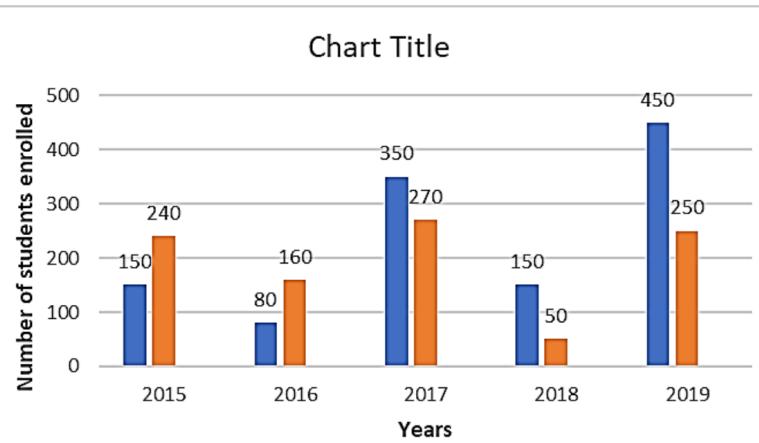
- a) 20 ✗
- b) 34 ✗
- c) 17 ✓
- d) 19 ✗

**Explanation:**

$$\begin{aligned} &17 \cos^2 \theta + 10 \sin^2 \theta + \frac{7}{\csc^2 \theta} \\ &17 \cos^2 \theta + 10 \sin^2 \theta + 7 \sin^2 \theta \\ &17 \cos^2 \theta + 17 \sin^2 \theta = 17(\cos^2 \theta + \sin^2 \theta) \\ &= 17(1) = 17 \end{aligned}$$

Q. 92

Refer to the bar graph below and answer the question that follows.



What is the difference between the number of students enrolled in Institute A in 2015 and 2017 and that in Institute B in 2016, 2018 and 2019?

Note: Blue = A, Orange = B

- a) 40 ✓
- b) 100 ✗
- c) 75 ✗
- d) 150 ✗

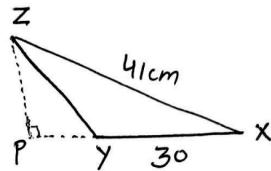
Explanation:

$$\begin{aligned}
 & \text{A in 2015 and 2017} \\
 &= 150 + 350 = 500 \\
 & \text{B in 2016 and 2018 and 2019} \\
 &= 160 + 50 + 250 = 460 \\
 & \text{Difference} = 500 - 460 = 40
 \end{aligned}$$

Q. 93

In an obtuse-angled triangle XYZ, the length of its longest side XZ is 41 cm, and one of the other two sides is 30 cm. If the area of the triangle is  $135 \text{ cm}^2$ , what is the length (in cm) of its third side?

- a)  $\sqrt{181} \text{ cm}$  ✓
- b)  $\sqrt{167} \text{ cm}$  ✗
- c)  $\sqrt{253} \text{ cm}$  ✗
- d)  $\sqrt{129} \text{ cm}$  ✗

**Explanation:**

$$\text{Area of } \triangle = 135 \text{ cm}^2$$

$$\frac{1}{2} \times 30 \times PZ = 135 \Rightarrow PZ = 9 \text{ cm}$$

In  $\triangle XZY$

$$XP = \sqrt{XZ^2 - PZ^2} = \sqrt{41^2 - 9^2} = 40 \text{ cm}$$

$$PY = XP - YX = 40 - 30 = 10 \text{ cm}$$

$$YZ = \sqrt{PZ^2 + PY^2} = \sqrt{9^2 + 10^2} = \sqrt{181}$$

$$\text{Third} = \sqrt{181} \text{ cm}$$

Q. 94

Find the mean from the following table (rounded off to two decimal places).

Score	Frequencies
15	2
18	3
21	4
22	1
19	5
23	1
24	2

- a) 18.44 X
- b) 17.56 X
- c) 20.82 X
- d) 19.78 ✓

**Explanation:**

Score(x)	frequencies	$fx$
15	2.	30
18	3.	54
21	4.	84
22	1	23
19	5	95
23	1	23
24	2	48
	18	357

$$\text{Mean} = \frac{357}{18} = 19.78 \text{ appx}$$

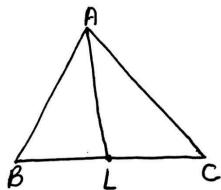
Q. 95

If L is the mid-point of side BC of  $\Delta ABC$  and the area of  $\Delta ABL$  is  $30 \text{ cm}^2$ , then the area (in sq cm) of  $\Delta ABC$  is:

- a) 15 X
- b) 30 X
- c) 60 ✓
- d) 45 X

Explanation:

As L is the mid point of BC. So AL is the Median



$$\begin{aligned}\text{So, } ar(\Delta ABC) &= 2 \cdot ar(\Delta ABL) \\ &= 2 \times 30 = 60 \text{ cm}^2\end{aligned}$$

Q. 96

What is the area (in square units) of the sector if the radius of the circle is given to be 48 units and the arc length is 6.5 units?

- a) 156 ✓
- b) 144 X
- c) 120 X
- d) 168 X

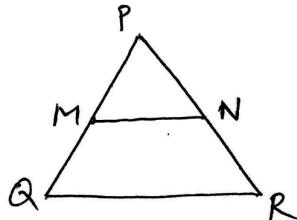
Explanation:

$$\begin{aligned}\text{Area of sector} &= \frac{1}{2} \times \text{length of arc} \times \text{radius} \\ &= \frac{1}{2} \times 6.5 \times 48 = 156 \text{ sq. units}\end{aligned}$$

Q. 97

In  $\triangle PQR$  points M and N are on sides PQ and PR, such that  $MN \parallel QR$ . If  $PM = y$ ,  $MQ = y - 4$ ,  $PN = y + 5$ , and  $NR = y - 3$ , then the value of y is:

- a) 6 X
- b) 5 ✓
- c) 9 X
- d) 3 X



Explanation:

$$\text{As } MN \parallel QR, \therefore \frac{PM}{MQ} = \frac{PN}{NR}$$

$$\frac{y}{y-4} = \frac{y+5}{y-3} \Rightarrow y^2 - 3y = y^2 + y - 20$$

$$4y = 20 \Rightarrow y = 5$$

Q. 98

The average of 25 numbers is 23. If each number is multiplied by 13, then the new average is:

- a) 88 X
- b) 299 ✓
- c) 650 X
- d) 219 X

Explanation:

Average changes with same effect.

$$\text{New Average} = 23 \times 13 = 299$$

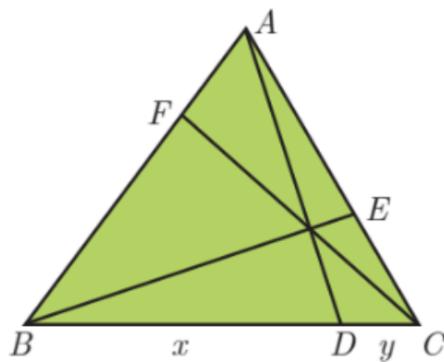
<b>Q. 99</b>	<p>The LCM of the numbers 5, 12.5 and 0.05 is:</p> <p>a) 25 ✓</p> <p>b) 1.25 ✗</p> <p>c) 12.5 ✗</p> <p>d) 125 ✗</p>
<b>Explanation:</b>	<p>The correct answer is: a</p> <p>LCM of <math>5/1</math>, <math>25/2</math>, <math>1/20</math></p> $\frac{LCM\ of\ Numerator}{HCF\ of\ Denominator} = \frac{25}{1} = 25$

Q. 100

In  $\triangle ABC$ , AD, BE, CF are cevians which intersect each other at point P and points D, E & F lies on BC, CA, AB respectively. If  $AF/FB = 2/5$ ;  $CE/EA = 5/8$  &  $BC = 15$  cm. Find the length of BD and DC.

- a) 6 and 3 X
- b) 8 and 7 X
- c) 12 and 3 ✓
- d) 5 and 10 X

Let  $BD = x$  and  $DC = y$



Explanation:

Using Ceva's theorem, we have,  $\frac{BD}{DC} \times \frac{CE}{EA} \times \frac{AF}{FB} = 1$  .....(i)

Substitute the values of  $\frac{AF}{FB}$  and  $\frac{CE}{EA}$  in (i)

$$\frac{BD}{DC} \times \frac{5}{8} \times \frac{2}{5} = 1 \Rightarrow x = 4y \text{ .....(ii)}$$

$$BC = BD + DC = 15, \text{ so, } x + y = 15 \text{ .....(iii)}$$

from (ii) and (iii)

$$x = 12, y = 3$$

$$BD = 12, DC = 3$$