













## Parmar SSC Live Mock 27





Q. 1	<p>Select the correct indirect form of the given sentence. She said to her friend, "Will you take my dog for a walk?"</p> <p>a) She asked her friend that if she will take her dog for a walk. </p> <p>b) She asked her friend will she take her dog for a walk. </p> <p>c) She asked to her friend if she would take my dog for a walk. </p> <p>d) She asked her friend if she would take her dog for a walk. </p>
Explanation:	<p><b>Correct Answer: D. She asked her friend if she would take her dog for a walk.</b></p> <ul style="list-style-type: none"> <li>• <b>Reporting Verb 'said to'</b> changes to '<b>asked</b>' (because it's a question).</li> <li>• <b>Remove quotation marks</b> and use '<b>if</b>' or '<b>whether</b>' for yes/no questions.</li> <li>• '<b>Will</b>' changes to '<b>would</b>' (backshift of tense).</li> <li>• '<b>you</b>' changes to '<b>her friend</b>' → '<b>she</b>'</li> <li>• '<b>my dog</b>' becomes '<b>her dog</b>' (pronoun change).</li> </ul>





  

Q. 2	<p>Select the most appropriate meaning of the given idiom. <b>To go red in the face</b></p> <p>a) To feel embarrassed </p> <p>b) To feel extremely irritated </p> <p>c) To feel very happy and proud </p> <p>d) To shout at someone for doing something wrong </p>
Explanation:	<p><b>Correct answer Option: A. To feel embarrassed</b></p> <p><b><i>To go red in the face</i></b> : When someone <b>goes red in the face</b>, it usually means they are feeling <b>embarrassed</b> or <b>ashamed</b>, causing their face to flush.</p>

<p><b>Q. 3</b></p>	<p>The following sentence has been split into four segments. Identify the segment that contains a grammatical error.</p> <p>All our / furnitures were / spoiled in the recent / rains and floods.</p> <p>a) All our </p> <p>b) furnitures were </p> <p>c) rains and floods </p> <p>d) spoiled in the recent </p>
<p><b>Explanation:</b></p>	<p><b>Correct answer Option: B. furnitures were</b></p> <ul style="list-style-type: none"> <li>• <b>"furniture"</b> is an uncountable noun. This means it does not have a plural form and is always treated as <b>singular</b>, even when referring to multiple items. Therefore, it should be <b>"furniture was"</b>.</li> </ul>

<p><b>Q. 4</b></p>	<p>Fill in the blank with the most appropriate word.</p> <p>The old building was _____ by the authorities.</p> <p>a) pulled up </p> <p>b) pulled off </p> <p>c) pulled down </p> <p>d) pulled through </p>
<p><b>Explanation:</b></p>	<p><b>Correct answer Option: C. pulled down</b></p> <ul style="list-style-type: none"> <li>• <b>Pulled down</b> → <b>Demolished or destroyed</b> <ul style="list-style-type: none"> <li>♦ <i>The old building was pulled down by the authorities.</i></li> </ul> </li> </ul> <p>Other options:</p> <ul style="list-style-type: none"> <li>• <b>Pulled up</b> → To stop a vehicle or to scold someone</li> <li>• <b>Pulled off</b> → To succeed in doing something difficult</li> <li>• <b>Pulled through</b> → To recover from illness or difficulty</li> </ul>

<b>Q. 5</b>	<b>Select the misspelt word.</b>  a) vicious   b) pompous   c) lustrous   d) trecherous 
<b>Explanation:</b>	<b>Correct answer Option: D. trecherous</b> • <b>Correct spelling: Treacherous</b> (means dangerous or deceitful)

Q. 6

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

A. Earlier, they had to look through hundreds of mugshots in large books and they could make a positive identification only in 5% of the cases.

B. This saves a lot of time and effort and also leads to more positive identifications.

C. Now computers make this easier for witnesses by projecting only pictures that match the descriptions closely.

D. After a crime, witnesses often give the police a description and thus help to identify the criminal.

a) BACD 

b) DACB 





c) ACBD 





d) CBAD 





Explanation:

**Correct answer Option: B. DACB**





- **D** → “After a crime, witnesses often give the police a description...”  
 ♦ This is the **introductory sentence**, setting the context.
- **A** → “Earlier, they had to look through hundreds of mugshots...”  
 ♦ Talks about the **old method** used after witnesses gave descriptions.
- **C** → “Now computers make this easier...”  
 ♦ Introduces the **modern method** and contrasts with the previous one.
- **B** → “This saves a lot of time and effort...”  
 ♦ Concludes with the **benefits** of the modern system.





<b>Q. 7</b>	<p>Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution'.</p> <p>Large glasses magnified his eyes <u>so that to gave</u> him the appearance of a wise owl.</p> <p>a) No substitution </p> <p>b) as though to gave </p> <p>c) so that it gives </p> <p>d) so as to give </p>
<b>Explanation:</b>	<p><b>Correct answer Option: D. so as to give</b></p> <ul style="list-style-type: none"><li>• "so that to gave" is grammatically incorrect. "<b>So that</b>" introduces a clause, which requires a <b>subject</b> and a <b>verb</b>. "To gave" is an incorrect infinitive form.</li><li>• "so as to give" Correct here. "<b>So as to</b>" is used to express purpose or result, and it is followed by the base form of the verb (infinitive), "<b>give.</b>" This accurately conveys that the purpose of the magnification was to give him the appearance of a wise owl.</li></ul>

Q. 8	<p>Select the option that expresses the given sentence in active or passive voice.</p> <p>Wi-Fi hotspots will be installed by the government in remote areas by 2022.</p> <p>a) Wi-Fi hotspots will install in remote areas by 2022 by the government. </p> <p>b) The government will install remote areas and hotspots by 2022. </p> <p>c) Remote areas will install Wi-Fi hotspots by the government by 2022. </p> <p>d) The government will install Wi-Fi hotspots in remote areas by 2022. </p>
Explanation:	<p><b>Correct answer Option: D. The government will install Wi-Fi hotspots in remote areas by 2022.</b></p> <ul style="list-style-type: none"> <li>To change it to the active voice, we need to identify the <b>doer</b> of the action (the government) and make it the <b>subject</b> of the sentence.</li> <li>Option 4 Correctly changes the sentence to the active voice. "<b>The government</b>" is the subject performing the action of "<b>installing,</b>" and "<b>Wi-Fi hotspots</b>" are the direct object. The rest of the information (in remote areas, by 2022) is kept intact.</li> </ul>





Q. 9	<p>Select the most appropriate <b>ANTONYM</b> of the given word.</p> <p><b>Restrictive</b></p> <p>a) Closed </p> <p>b) Thrifty </p> <p>c) Broad </p> <p>d) Liberal </p>
Explanation:	<p><b>Correct answer Option: D. Liberal</b></p> <p><b>Restrictive</b> : Limiting or controlling something; imposing restrictions.  Liberal means open-minded, generous, or permissive – <b>the opposite of restrictive.</b></p> <p>Other options:</p> <ul style="list-style-type: none"> <li>• <b>A. Closed</b> : Relates more to physical state than control.</li> <li>• <b>B. Thrifty</b> : Means economical or careful with money.</li> <li>• <b>C. Broad</b> : Related in context.</li> </ul>





Q. 10	<p>Select the most appropriate <b>synonym</b> of the given word.</p> <p><b>Herald</b></p> <p>a) Suppress </p> <p>b) Succeed </p> <p>c) Announce </p> <p>d) Halt </p>
Explanation:	<p><b>Correct answer Option: C. Announce</b></p> <p><b>Herald</b> : To announce or signal the coming of something; to proclaim.  <b>Announce</b> – both mean to proclaim or make known publicly. (Correct synonym)</p> <ul style="list-style-type: none"> <li>• <b>A. Suppress</b> : Means to hold back or stop.</li> <li>• <b>B. Succeed</b>: Means to achieve or follow after.</li> <li>• <b>D. Halt</b> : Means to stop.</li> </ul>

Q. 11	<p>Select the most appropriate meaning of the idiomatic expression given. To poke one's nose into</p> <p>a) To clean one's nose with a twig </p> <p>b) To insert something in another's nose </p> <p>c) To take interest in others' affairs </p> <p>d) To bury oneself in another matter </p>
Explanation:	<p>Correct answer Option: C. To take interest in others' affairs</p> <ul style="list-style-type: none"> <li>• <b>To poke one's nose into</b> : To interfere in or get involved with something that does <b>not concern you</b>.</li> </ul>





  





Q. 12	<p>Select the INCORRECTLY spelt word.</p> <p>a) Interfere </p> <p>b) Fragrance </p> <p>c) Temparary </p> <p>d) Accustomed </p>
Explanation:	<p>Correct answer Option: C. Temparary</p> <ul style="list-style-type: none"> <li>♦ Correct spelling: <b>Temporary</b></li> </ul>







Q. 13	<p>Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select 'No substitution required'.</p> <p>I want to buy this book. Please give me <u>any money</u>.</p> <p>a) less money </p> <p>b) little money </p> <p>c) some money </p> <p>d) No substitution required </p>
Explanation:	<p><b>Correct answer Option: C. some money</b></p> <ul style="list-style-type: none"> <li>• <b>"Any"</b> is typically used in negative sentences or questions (e.g., "Do you have any money?", "I don't have any money.").</li> <li>• In an affirmative request like <b>"Please give me..."</b>, <b>"some"</b> is the correct word to use when asking for an unspecified amount of an uncountable noun like <b>"money."</b></li> </ul>





  

Q. 14	<p>Select the most appropriate one-word substitution for the given words.</p> <p>a person who formally requests something, especially a job</p> <p>a) nominee </p> <p>b) trainee </p> <p>c) applicant </p> <p>d) contestant </p>
Explanation:	<p><b>Correct answer Option: C. applicant</b></p> <ul style="list-style-type: none"> <li>• <b>A. Nominee</b> – A person who is nominated for something (like an award or position).</li> <li>• <b>B. Trainee</b> – A person undergoing training.</li> <li>• <b>C. Applicant</b> – A person who applies (for a job, admission, etc.).</li> <li>• <b>D. Contestant</b> – A person who takes part in a contest or competition.</li> </ul>

Q. 15	<p>Fill in the blank with most appropriate word.</p> <p>This train is _____ for Bihar.</p> <p>a) running </p> <p>b) intending </p> <p>c) going </p> <p>d) bound </p>
Explanation:	<p>Correct answer Option: D. bound</p> <ul style="list-style-type: none"> <li>• <b>Bound for</b> meaning "on its way to" or "destined for." It's specifically used for transportation like trains, ships, or planes.</li> </ul>

Q. 16	<p>Select the most appropriate one-word substitution for the given words.</p> <p>one who pretends to be what he is not</p> <p>a) fanatic </p> <p>b) hypocrite </p> <p>c) optimist </p> <p>d) stoic </p>
Explanation:	<p>Correct answer Option: B. hypocrite</p> <ul style="list-style-type: none"> <li>• <b>A. Fanatic</b> – A person with extreme enthusiasm, especially in religion or politics.</li> <li>• <b>B. Hypocrite</b> – <b>Correct</b>; someone who <b>pretends</b> to be something they're not.</li> <li>• <b>C. Optimist</b> – Someone who always looks at the positive side of things.</li> <li>• <b>D. Stoic</b> – A person who can endure pain or hardship without showing feelings or complaining.</li> </ul>

Q. 17	<p>Select the most appropriate synonym of the given word.</p> <p><b>Dearth</b></p> <p>a) Weakness </p> <p>b) Leakage </p> <p>c) Shortage </p> <p>d) Death </p>
Explanation:	<p><b>Correct answer Option: C. Shortage</b></p> <p><b>Dearth</b> : A <b>lack</b> or <b>scarcity</b> of something.</p> <ul style="list-style-type: none"><li>• <b>A. Weakness</b> – Refers to lack of strength.</li><li>• <b>B. Leakage</b> – Loss of something through escape or seepage.</li><li>• <b>C. Shortage</b> – <b>Correct synonym</b>; both mean <i>insufficient supply</i>.</li></ul>

Q. 18

Given below are four sentences in jumbled order. Select the option that gives their correct order.

A. On coming out, his skin would be shining like ebony and he would squeal with pleasure.

B. First, he would lie down on the sand bank while I rubbed him clean with the sand of the river.

C. Every day, I used to take the baby elephant to the river for his bath.

D. After that, he would lie in the water for a long time.

a) DABC 

b) CBDA 





c) BADC 

d) ADCB 





Explanation:

**Correct answer Option: B. CBDA**

- **C** – *Every day, I used to take the baby elephant to the river for his bath.*
  - ♦ **Opening line** – sets the context.
- **B** – *First, he would lie down on the sand bank while I rubbed him clean...*
  - ♦ Describes the **first step** of the bathing process.
- **D** – *After that, he would lie in the water for a long time.*
  - ♦ Follows naturally after B – the **second step**.
- **A** – *On coming out, his skin would be shining...*
  - ♦ **Final step** – what happens after the bath.

Q. 19	<p>Select the most appropriate <b>ANTONYM</b> of the given word.</p> <p><b>Starve</b></p> <p>a) Refrain </p> <p>b) Fast </p> <p>c) Stuff </p> <p>d) Diet </p>
Explanation:	<p><b>Correct answer Option: C. Stuff</b></p> <p><b>Starve</b> : To suffer or die from lack of food; to go hungry.</p> <ul style="list-style-type: none"> <li>• <b>A. Refrain</b> – Means to hold back from doing something.</li> <li>• <b>B. Fast</b> – Means to deliberately not eat for a period; <b>similar</b> to <i>starve</i>.</li> <li>• <b>C. Stuff</b> – Means to <b>overeate</b> or <b>fill oneself with food</b>; this is the <b>opposite</b> of starving.</li> <li>• <b>D. Diet</b> – Means a regulated way of eating.</li> </ul>

Q. 20	<p>The following sentence has been split into four segments. Identify the segment that contains a grammatical error.</p> <p>The police arrested / two young men, but / neither of them were / responsible for the robbery.</p> <p>a) The police arrested </p> <p>b) neither of them were </p> <p>c) for the robbery </p> <p>d) two young men, but </p>
Explanation:	<p><b>Correct answer Option: B. neither of them were</b></p> <ul style="list-style-type: none"> <li>• When "<b>neither of</b>" is used, the verb that follows should be singular, even if the noun or pronoun after "<b>of</b>" is plural. "<b>Neither</b>" refers to "<b>not one of the two</b>," implying a singular subject. Therefore, it should be "<b>neither of them was responsible.</b>"</li> </ul>

Q. 21

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

I was brought up in a village. Those days there (1) \_\_\_\_\_ no televisions, music systems or VCDs at (2) \_\_\_\_\_. Our only luxury was books. I was fortunate (3) \_\_\_\_\_ grandparents. My grandfather was a retired school (4) \_\_\_\_\_ and an avid reader. He knew a large (5) \_\_\_\_\_ of Sanskrit texts by heart and every night, under the dark sky with the twinkling stars, he would tell me many stories.

Select the most appropriate option to fill in blank No. 1.

a) were 

b) was 

c) are 

d) is 

Explanation:

**Correct answer: Option A. were**

- The passage refers to "**those days**," indicating a past tense. The phrase "**no televisions, music systems or VCDs**" refers to multiple items, hence the plural form "**were**" is correct.

Q. 22

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

I was brought up in a village. Those days there (1) \_\_\_\_\_ no televisions, music systems or VCDs at (2) \_\_\_\_\_. Our only luxury was books. I was fortunate (3) \_\_\_\_\_ grandparents. My grandfather was a retired school (4) \_\_\_\_\_ and an avid reader. He knew a large (5) \_\_\_\_\_ of Sanskrit texts by heart and every night, under the dark sky with the twinkling stars, he would tell me many stories.

Select the most appropriate option to fill in blank No. 2.

- a) school 
- b) home 
- c) village 
- d) house 

Explanation:

**Correct answer Option: B. home**





- The sentence describes the lack of modern entertainment devices. These items are typically found "**at home.**"

Q. 23

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

I was brought up in a village. Those days there (1) \_\_\_\_\_ no televisions, music systems or VCDs at (2) \_\_\_\_\_. Our only luxury was books. I was fortunate (3) \_\_\_\_\_ grandparents. My grandfather was a retired school (4) \_\_\_\_\_ and an avid reader. He knew a large (5) \_\_\_\_\_ of Sanskrit texts by heart and every night, under the dark sky with the twinkling stars, he would tell me many stories.

Select the most appropriate option to fill in blank No. 3.

- a) have 
- b) having 
- c) had 
- d) to have 

Explanation:

**Correct answer Option: D. to have**

- The verb "**fortunate**" is typically followed by the infinitive "**to have**" when expressing **gratitude or luck** about something in the past or present.







Q. 24

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

I was brought up in a village. Those days there (1) \_\_\_\_\_ no televisions, music systems or VCDs at (2) \_\_\_\_\_. Our only luxury was books. I was fortunate (3) \_\_\_\_\_ grandparents. My grandfather was a retired school (4) \_\_\_\_\_ and an avid reader. He knew a large (5) \_\_\_\_\_ of Sanskrit texts by heart and every night, under the dark sky with the twinkling stars, he would tell me many stories.

Select the most appropriate option to fill in blank No. 4.

- a) engineer 
- b) student 
- c) professor 
- d) teacher 

Explanation:

**Correct answer Option: D. teacher**





- The phrase "retired school \_\_\_\_\_" strongly suggests a profession associated with a **school**.
- A teacher works in a **school**.
- Furthermore, the description of the grandfather knowing Sanskrit texts by heart and telling stories aligns well with the qualities of a **learned teacher**.

Q. 25

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

I was brought up in a village. Those days there (1) \_\_\_\_\_ no televisions, music systems or VCDs at (2) \_\_\_\_\_. Our only luxury was books. I was fortunate (3) \_\_\_\_\_ grandparents. My grandfather was a retired school (4) \_\_\_\_\_ and an avid reader. He knew a large (5) \_\_\_\_\_ of Sanskrit texts by heart and every night, under the dark sky with the twinkling stars, he would tell me many stories.

Select the most appropriate option to fill in blank No. 5.

- a) quantity 
- b) quality 
- c) number 
- d) amount 

Explanation:

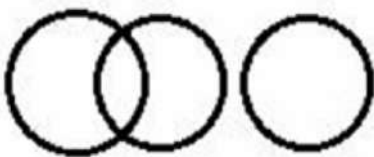

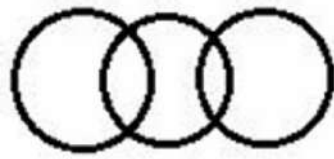

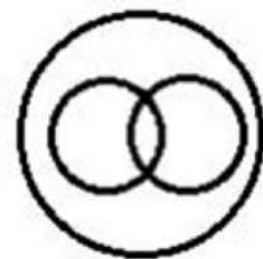



**Correct answer Option: C. number**

- The noun “**texts**” is **countable**, and for **countable nouns**, we use: → “a large number of”

Q. 26

Select the Venn diagram that best illustrates the relationship between the following classes.

Brothers, Fathers, Tax-payers

- a)  
- b)  
- c)  
- d)  

**Explanation:**

Option 4 is correct.

Some brothers can be fathers and vice-versa and some tax payers can be both brother and father but some may not.

Q. 27

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

WUW, TSV, QQU, NOT, ?

a) MNS 

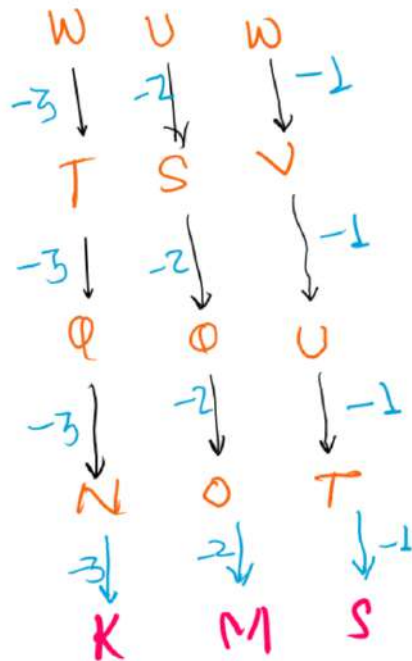
b) JNT 

c) LNT 

d) KMS 

Explanation:

Option 4 is correct.

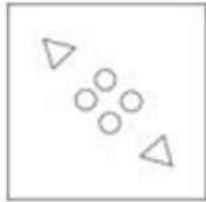


Q. 28

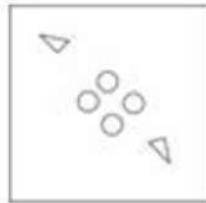
The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



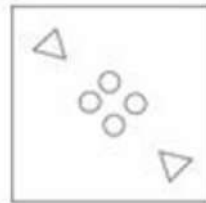
a)



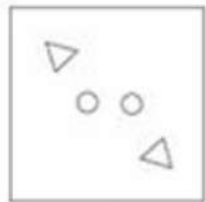
b)



c)

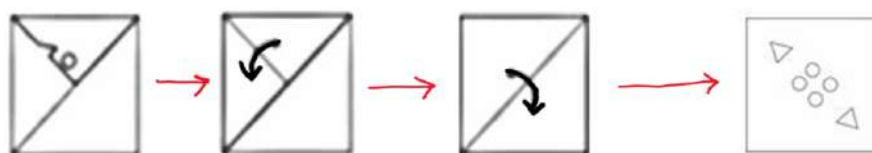










d)



Option 1 is correct.

Explanation:



Q. 29	<p>Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the number-pair that is different.</p> <p>a) 182 : 12 </p> <p>b) 305 : 16 </p> <p>c) 239 : 14 </p> <p>d) 461 : 20 </p>
Explanation:	<p>Option 1 is correct.</p> <p><math>16^2 + 3 \times 16 + 1 = 305</math>  <math>14^2 + 3 \times 14 + 1 = 239</math>  <math>20^2 + 3 \times 20 + 1 = 461</math>            But,  <math>12^2 + 3 \times 12 + 1 \neq 182</math></p>
Q. 30	<p>Four words have been given, out of which three are alike in some manner and one is different. Select the word that is different.</p> <p>a) Perfunctory </p> <p>b) Careful </p> <p>c) Attentive </p> <p>d) Vigilance </p>
Explanation:	<p>Option 1 is correct.</p> <p>Careful, Attentive and Vigilance have similar meanings but Perfunctory has not, it is opposite of other options.</p>

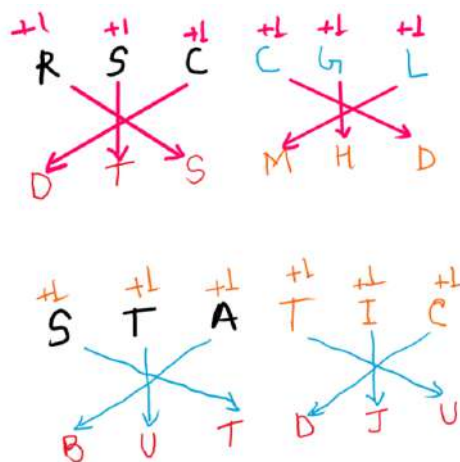
Q. 31

In a certain code language, 'RSCCGL' is written as 'DTSMHD'. How will 'STATIC' be written in that language?

- a) BJUTDU ✗  
 b) BUTJDU ✗  
 c) BTUJDU ✗  
 d) BUTDJU ✓

Explanation:

Option 4 is correct.



Q. 32

Select the option that is related to the fourth number in the same way as the first number is related to the second number and the fifth number is related to the sixth number.

1008 : 8 :: ? : 6 :: 220 : 4

- a) 518 ✓  
 b) 350 ✗  
 c) 443 ✗  
 d) 524 ✗

Explanation:





Option 1 is correct.

$$(8+2)^3 + 8 = 1008$$





$$(4+2)^3 + 4 = 220$$

Similarly,

$$(6+2)^3 + 6 = 518$$

<b>Q. 33</b>	<p>Select the letters from among the given options that can complete the following series.</p> <p>A _ C _ _ _ B _ C D _ B _ C D</p> <p>a) ADCACAD </p> <p>b) BCDACAC </p> <p>c) CDEACDB </p> <p>d) DCDACAA </p>
<b>Explanation:</b>	<p>Option 2 is correct.</p> <p>Pattern is</p> <p>A B C C D / A B C C D / A B C C D</p>

<b>Q. 34</b>	<p>Select the correct option that indicates the arrangement of the given words in the order in which they appear in an English dictionary.</p> <ol style="list-style-type: none"> <li>1. Introduce</li> <li>2. Internship</li> <li>3. Interaction</li> <li>4. Interjection</li> <li>5. Intervene</li> <li>6. Interruption</li> </ol> <p>a) 3, 2, 4, 6, 5, 1 </p> <p>b) 3, 4, 2, 6, 5, 1 </p> <p>c) 3, 4, 2, 6, 1, 5 </p> <p>d) 3, 4, 2, 5, 6, 1 </p>
<b>Explanation:</b>	<p>Option 2 is correct.</p> <p>3.Interaction &gt;4. Interjection &gt;2. Internship &gt;6. Interruption &gt; 5.Intervene &gt;1. Introduce</p>



Q. 35


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

24, 48, 51, 204, 209, ?

a) 1047 

b) 416 

c) 215 

d) 1254 

Explanation:

Option 4 is correct.



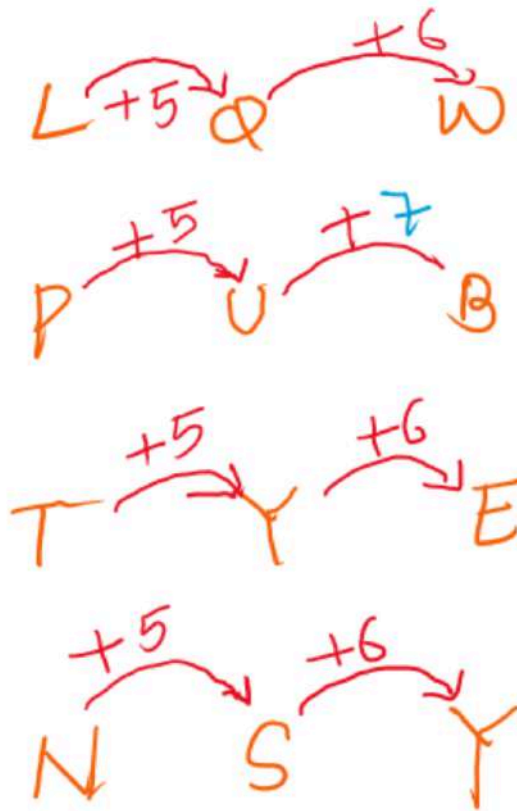
Q. 36

Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the letter-cluster that is different.

a) LQW b) PUB c) TYE d) NSY 

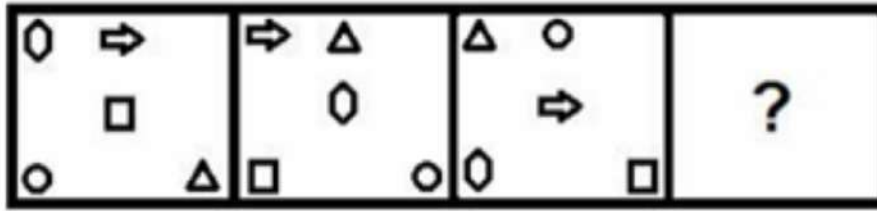
Option 2 is correct

Explanation:

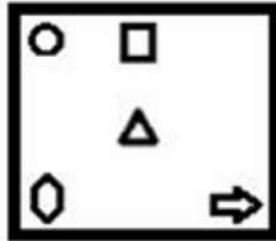


Q. 37

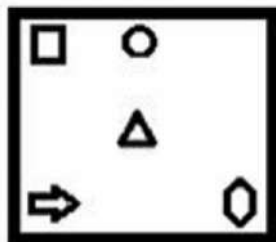
Select the figure among the given options that can replace the question mark(?) in the following series.



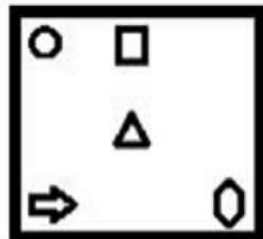
a)



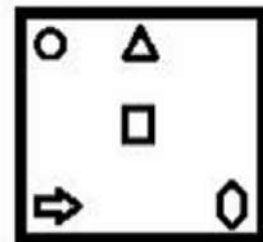
b)



c)

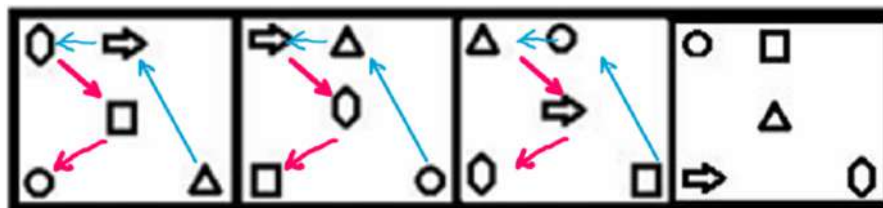






d)







Explanation:

Option 3 is correct.



<p><b>Q. 38</b></p>	<p>Select the option in which the words share the same relationship as that shared by the given pair of words.</p> <p>Boxing : Mary Kom</p> <p>a) Cricket : Mohinder Amarnath </p> <p>b) Wrestling : Dipa Karmakar </p> <p>c) Chess : Saina Nehwal </p> <p>d) Kabaddi : Rani Rampal </p>
<p><b>Explanation:</b></p>	<p>Option 1 is correct.</p> <p>Mary Kom is related to Boxing.</p> <p>In the same way, Mohinder Amarnath is related to Cricket.</p>

<p><b>Q. 39</b></p>	<p>Select the options in which the numbers are related in the same way as are the numbers of the following set.</p> <p>(541, 15, 766)</p> <p>a) (832, 11, 976) </p> <p>b) (635, 18, 891) </p> <p>c) (697, 13, 866) </p> <p>d) (432, 25, 1108) </p>
<p><b>Explanation:</b></p>	<p>Option 3 is correct.</p> <p><math>766 - 541 = 225</math> ; <math>225 = 15^2</math></p> <p>Similarly,</p> <p><math>866 - 697 = 169</math> ; <math>169 = 13^2</math></p>

Q. 40

Find the number of triangles in the given figure.



- a) 20 ☒
- b) 22 ☒
- c) 23 ☒
- d) 24 ☒

Option 4 is correct.

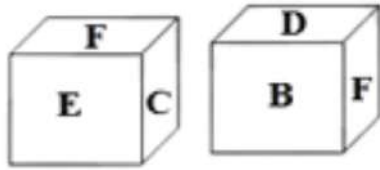
Explanation:



AJK	NBO	IBC
AJL	NPM	AHC
ALK	NCO	AIB
ABC	NQM	AOC
DBG	AHN	AUB
EFC	AIN	
HNB	ANC	
INC	ANB	
NBC	HBC	
NPQ		

Q. 41

Two different positions of the same dice are shown , the six faces of which are marked from A to F. Select the letter that will be on the face opposite to the face showing the letter 'C'.



- a) A ☒
- b) D ☒
- c) B ☒
- d) F ☒

Explanation:

Option 3 is correct.

F	C	E
A	B	D

Q. 42

Rajesh purchased 6 mangoes, 3 bananas and 10 guavas in ₹136. If the ratio of the cost (per piece) of mangoes, bananas and guavas is 3 : 2 : 1, what will be the total cost of 1 mango, 2 bananas and 3 guavas?

a) ₹38 b) ₹27 c) ₹40 d) ₹46 **Explanation:**

Option 3 is correct.

Given: Rajesh purchased 6 mangoes, 3 bananas and 10 guavas in 136. If the ratio of the cost (per piece) of mangoes, bananas and guavas is 3: 2: 1.

Let:

The cost (per piece) of mangoes be  $3x$ ,

The cost (per piece) of bananas be  $2x$ ,

The cost (per piece) of guavas be  $x$ ,

Then, according to the question,

$$6(3x) + 3(2x) + 10(x) = 136$$

$$18x + 6x + 10x = 136$$

$$34x = 136$$

$$x = 4$$

Then, the cost (per piece) of mangoes, bananas, and guava is 12, 8, and 4 respectively.

Therefore, the cost of 1 mango, 2 bananas and 3 guavas =

$$12 \times 1 + 8 \times 2 + 4 \times 3 = 12 + 16 + 12 = 40$$

Hence, ₹40 is the correct answer.

Q. 43

In a certain code language, 'REASON' is coded as '5410129' and 'HEALTHY' is coded as '716231216'. How will 'DIVULGE' be coded in that language?

- a) 10733494 ✗
- b) 24134383 ✗
- c) 13704349 ✗
- d) 21435438 ✓

Option 4 is correct.

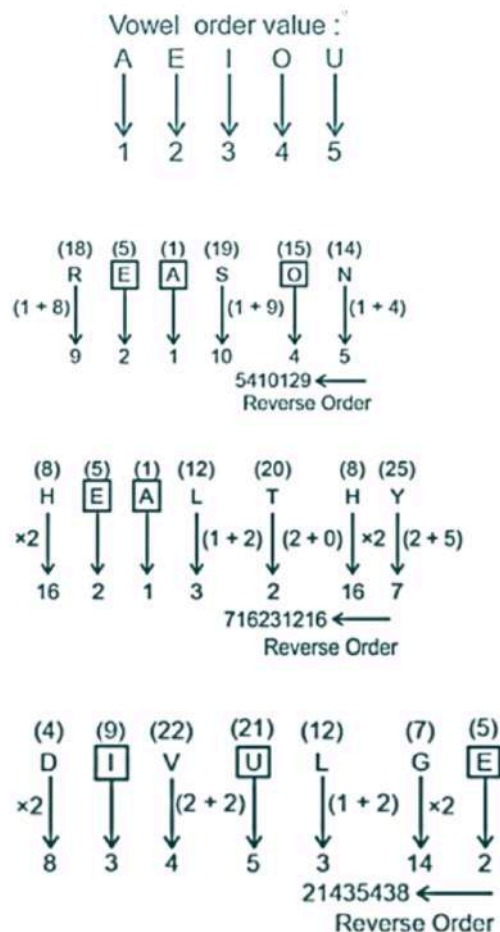
Step 1: Single digit positional value consonant  $\times 2$  = Number code.

Step 2: Sum of the double-digit positional value of consonant = Number code.

Step 3: Vowels coded as their vowel order.

Step 4: In the end all numbers are arranged in reverse order.

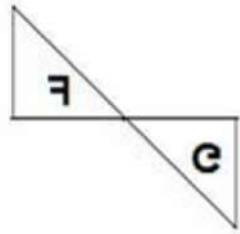
Explanation:



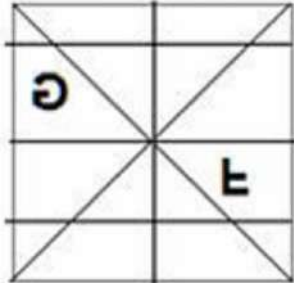


Q. 44

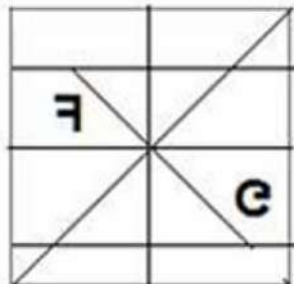
Select the option in which the given figure is embedded (rotation is NOT allowed ).



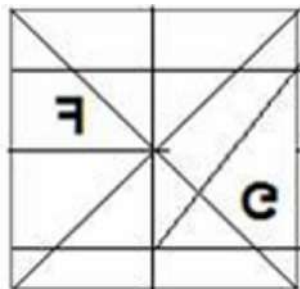
a)



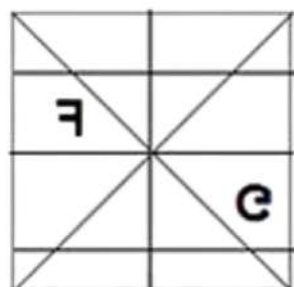
b)



c)

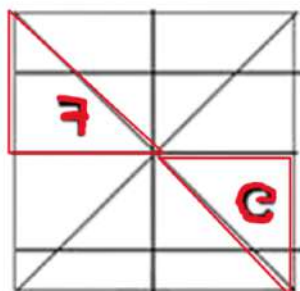






d)







Explanation:

Option 4 is correct.



Q. 45	<p>Select the correct combination of mathematical signs that can sequentially replace the * signs and balance the equation.</p> <p><math>1496 * 8 * 13 * 40 * 3 * 80</math></p> <p>a) <math>\div, +, -, \times, =</math> </p> <p>b) <math>\div, \times, =, +, -</math> </p> <p>c) <math>\div, -, +, \times, =</math> </p> <p>d) <math>\div, +, =, -, \times</math> </p>
Explanation:	<p>Option 1 is correct.</p> <p><math>1496 \div 8 + 13 - 40 \times 3 = 80</math></p> <p><math>187 + 13 - 120 = 80</math></p>

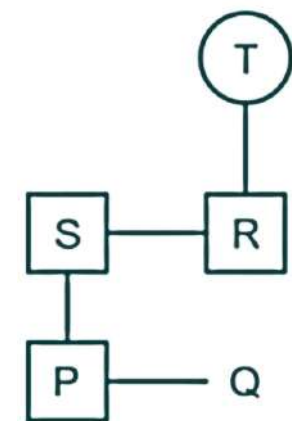
Q. 46	<p>Select the option in which the numbers are related in the same way as are the numbers of the following set.</p> <p>(15, 315, 7)</p> <p>a) (14, 197, 4) </p> <p>b) (11, 188, 6) </p> <p>c) (18, 486, 9) </p> <p>d) (17, 401, 12) </p>
Explanation:	<p>Option 3 is correct.</p> <p>Given: (15, 315, 7)</p> <p>The logic followed here is:</p> <p>(15, 315, 7) <math>15(7 \times 3) = 15 \times 21 = 315</math></p> <p>Now, by checking options:</p> <p>(14, 197, 4) <math>14(4 \times 3) = 14 \times 12 = 168 \neq 197</math></p> <p>(11, 188, 6) <math>11(6 \times 3) = 11 \times 18 = 198 \neq 188</math></p> <p>(18, 486, 9) <math>18(9 \times 3) = 18 \times 27 = 486</math></p> <p>(17, 401, 12) <math>17(12 \times 3) = 17 \times 36 = 612 \neq 401</math></p> <p>Hence, (18, 486, 9) is the correct answer.</p>

Q. 47

P is the brother of Q. S is the father of P. R is the brother of S. If T is the mother of R, then how is P related to T?

- a) Grandson ✓
- b) Father ✗
- c) Brother ✗
- d) Uncle ✗

Explanation:



Clearly, P is the grandson of T.

Q. 48

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

Cartridge : Printer :: Motherboard : ?

- a) Central Processing Unit ✓
- b) Machine ✗
- c) Monitor ✗
- d) Keyboard ✗

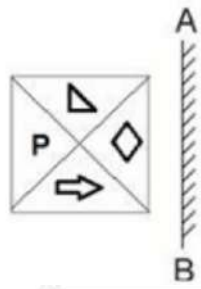
Explanation:

Option 1 is correct.

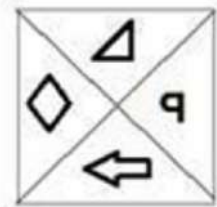
As the main component of a printer is a cartridge, similarly, the main component of the CPU is the motherboard.

Q. 49

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



a)



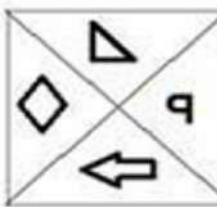
b)



c)

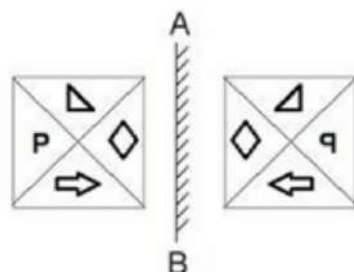


d)



Option 1 is correct.

Explanation:



Q. 50

Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

Some cards are postcards.

Some cards are envelopes.

All envelopes are copies.

Conclusions:

I. Some copies are envelopes.

II. Some postcards are copies.

III. Some cards are copies.

a) Only conclusions I and III follow ✓

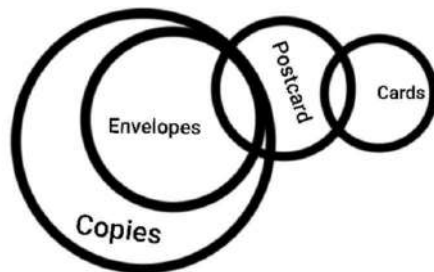
b) Only conclusions II and III follow ✗

c) Only conclusion I follows ✗

d) Only conclusions I and II follow ✗

option 1 is correct.

Explanation:



I. Some copies are envelopes → True (as all envelopes are copies, implies some copies are envelopes)

II. Some postcards are copies → False (it is possible but not definite as shown in the above figure that no postcard is copy is possible)

III. Some cards are copies → True (as some cards are envelopes and, all envelopes are copies, implies some cards are copies)

Q. 51

The value of  $\sin^2 64^\circ + \cos 64^\circ \sin 26^\circ + 2 \cos 43^\circ \operatorname{cosec} 47^\circ$  is :a) 3 b) 2 c) 4 d) 1 

Explanation:


$$\begin{aligned}
 & \underline{1} \quad \sin^2 64^\circ + \cos 64^\circ \sin 26^\circ + 2 \cos 43^\circ \operatorname{cosec} 47^\circ \\
 & \sin^2 64^\circ + \cos 64^\circ \sin (90 - 64^\circ) + 2 \cos 43^\circ \operatorname{cosec} (90 - 43^\circ) \\
 & \sin^2 64^\circ + \cos^2 64^\circ + 2 \cos 43^\circ \cdot \sec 43^\circ \\
 & \quad \quad \quad 1 + 2 \times 1 \\
 & = 1 + 2 = 3
 \end{aligned}$$


$$\begin{aligned}
 \operatorname{cosec} (90 - \theta) &= \sec \theta \\
 \sin (90 - \theta) &= \cos \theta \\
 \sin^2 \theta + \cos^2 \theta &= 1 \\
 \cos \theta \cdot \sec \theta &= 1
 \end{aligned}$$

Q. 52

If  $\sqrt{86 - 60\sqrt{2}} = a - b\sqrt{2}$ , then what will be the value of  $\sqrt{a^2 + b^2}$ , correct to one decimal place?

a) 8.4 

b) 7.8 

c) 8.2 

d) 7.2 

Explanation:

$$\sqrt{86 - 60\sqrt{2}} = a - b\sqrt{2}$$

Squaring both sides,

$$86 - 60\sqrt{2} = (a - b\sqrt{2})^2$$

$$\Rightarrow 86 - 60\sqrt{2} = a^2 + 2b^2 - 2a(b\sqrt{2})$$

$$\text{on comparison, } a^2 + 2b^2 = 86 \text{ ———— (1)}$$



$$2ab = 60 \Rightarrow ab = 30 \text{ ———— (2)}$$

from (1) & (2) we get

$$\sqrt{a^2 + b^2} = \sqrt{36 + 25} = \sqrt{61} = 7.8$$

Q. 53

A, B and C started a business. Thrice the investment of A is equal to twice the investment of B and also equal to four times the investment of C. If C's share out of the total profit is Rs. 4863, then the share of A in the profit is:

a) 9726 b) 6484 c) 7272 d) 8105 

Explanation:

3      A      B      C  
          a      b      c  $\longrightarrow$  investment (let)

A/B,  $3a = 2b = 4c = k$  (let)

$$\Rightarrow a = \frac{k}{3}, b = \frac{k}{2}, c = \frac{k}{4}$$

$$\therefore \frac{k}{4} \longrightarrow 4863$$

$$\frac{k}{3} \longrightarrow \frac{4863 \times 4}{3} = 6484$$



Q. 54

If 25% of half of x is equal to 2.5 times the value of 30% of one-fourth of y, then x is what percent more or less than y?

a)  $33\frac{1}{3}\%$  more 

b)  $33\frac{1}{3}\%$  less 

c) 50% less 

d) 50% more 

Explanation:

$$\text{A/Q, } 25\% \text{ of } \frac{1}{2}x = 2.5 \times 30\% \text{ of } \frac{1}{4}y$$


$$\frac{25}{100} \times \frac{x}{2} = 2.5 \times \frac{30}{100} \times \frac{y}{4}$$

$$2x = 3y$$


$$\begin{aligned} \Rightarrow \% \text{ more/less} &= \frac{x-y}{y} \times 100\% \\ &= \frac{3y/2 - y}{y} \times 100\% \\ &= \frac{1}{2} \times 100\% = 50\% \text{ more} \end{aligned}$$


Q. 55

A person buys 80 kg of rice and sells it at a profit of as much money as he paid for 30 kg. His profit percentage is :

a)  $27\frac{3}{11}$  

b) 35 

c)  $37\frac{1}{2}$  

d) 40 

Explanation:

5 CP = Price of 80 kg rice  
Profit = price of 30 kg rice

$$P\% = \frac{30}{80} \times 100 = \frac{150}{4} = 37.5\%$$

Q. 56

The ratio of investment by A to that by B in a business is 14 : 15 and the ratio of their respective profits at the end of a year is 2 : 5. If A invested the money for 3 months, then for how much time (in months) B invested his money?

a) 5 b) 9 c) 7 d) 6 

Explanation:

6 Investment ratio  $\times$  Time period = Profit ratio


$$\Rightarrow \frac{14}{15} \times \frac{3}{B} = \frac{2}{5}$$

$$B = 7$$

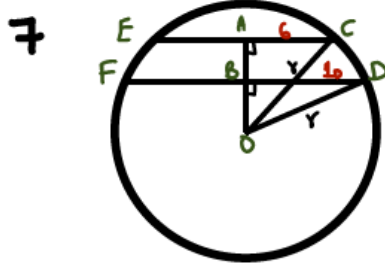
$\Rightarrow$  Time period of B = 7 months

Q. 57

Two parallel chords on the same side of the centre of a circle are 12 cm and 20cm long and the radius of the circle is  $5\sqrt{13}$  cm. What is the distance (in cm) between the chords?

a) 2 b) 2.5 c) 3 d) 1.5 

Explanation:


 $OA \perp CE, OB \perp DF$ 
 $EA = AC \text{ and } FB = BD$ 

[The line segment divides the chord in two equal parts and  $\perp$  to the chord]

In  $\triangle AOC$ ,

$$OA^2 + AC^2 = OC^2$$

$$\Rightarrow OA^2 + (6)^2 = y^2$$

$$\Rightarrow OA^2 = (5\sqrt{13})^2 - (6)^2$$

$$\Rightarrow OA^2 = 25 \times 13 - 36$$

$$\Rightarrow OA = \sqrt{289}$$

$$\Rightarrow OA = 17\text{cm}$$

$$\begin{aligned}&\text{In } \triangle BOD, \\&OB^2 + BD^2 = OD^2 \\&\Rightarrow OB^2 + (10)^2 = r^2 \\&\Rightarrow OB^2 + 100 = (5\sqrt{13})^2 \\&\Rightarrow OB = \sqrt{25 \times 13 - 100} \\&\Rightarrow OB = \sqrt{225} \\&\Rightarrow OB = 15 \text{ cm}\end{aligned}$$

$\therefore$  Distance between chords  
 $OA - OB = 17 - 15$   
 $= 2 \text{ cm}$

Q. 58





What is the remainder when  $(127^{97} + 97^{97})$  is divisible by 32?a) 7 b) 2 c) 4 d) 0 

Explanation:

$$\begin{aligned}
 & \frac{127^{97} + 97^{97}}{32} \\
 &= \frac{(128-1)^{97} + (96+1)^{97}}{32} \\
 &= \frac{(-1)^{97} + (1)^{97}}{32} \\
 &= -1 + 1 \\
 &= 0
 \end{aligned}$$

Q. 59

The compound interest on a certain sum of money at 21% for 2 years is ₹11,602.5. It's simple interest (in ₹) at the same rate and for the same period is:

- a) 10750   
 b) 16000   
 c) 12500   
 d) 10500 

$$\begin{aligned}
 CI &= A - P \\
 &= P \left(1 + \frac{R}{100}\right)^T - P \\
 \Rightarrow 11602.5 &= P \left(1 + \frac{21}{100}\right)^2 - P \\
 &= P \left(\frac{121}{100}\right)^2 - P \\
 &= \frac{P(121^2 - 100^2)}{(100)^2}
 \end{aligned}$$

Explanation:

$$\begin{aligned}
 \Rightarrow 11602.5 \times 10^4 &= P(121+100)(121-100) \\
 \Rightarrow 116025000 &= P(221)(21) \\
 \Rightarrow P &= \frac{116025 \times 10^3}{221 \times 21}
 \end{aligned}$$



$$\text{Now, } SI = \frac{116025 \times 10^3}{221 \times 21} \times \frac{21 \times 2}{10^2}$$

$$SI = 10,500$$

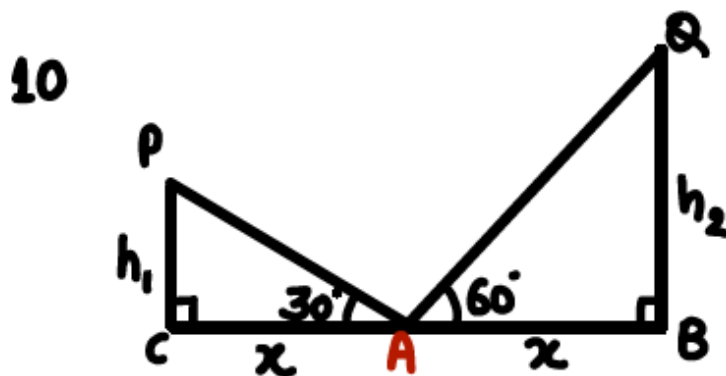


Q. 60

From a point exactly midway between the foot of two towers P and Q, the angles of elevation of their tops are  $30^\circ$  and  $60^\circ$ , respectively. The ratio of the height of P to that of Q is:

a)  $2:3\sqrt{3}$  b)  $1:2\sqrt{3}$  c)  $1:3$  d)  $1:2$  

Explanation:



A lies in the middle  
 $AC = AB = x$  (let)  
 let  $PC = h_1$ ,  $QB = h_2$

$$\text{In } \triangle PCA, \tan 30^\circ = \frac{PC}{AC}$$

$$\frac{1}{\sqrt{3}} = \frac{h_1}{x}$$

$$h_1 = \frac{x}{\sqrt{3}}$$

$$\text{In } \triangle QAB,$$

$$\tan 60^\circ = \frac{QB}{AB}$$

$$\sqrt{3} = \frac{h_2}{x}$$





$$h_2 = \sqrt{3}x$$

$$\text{Now, } \frac{h_1}{h_2} = \frac{x}{\sqrt{3} \cdot \sqrt{3}x}$$

$$\frac{h_1}{h_2} = \frac{1}{3}$$

Q. 61

Alloy A contains copper and zinc in the ratio of 4:3 and alloy B contains copper and zinc in the ratio of 5:2. A and B are taken in the ratio of 5:6 and melted to form a new alloy. The percentage of zinc in the new alloy is closest to:

- a) 36.8   
 b) 54   
 c) 34.2   
 d) 35 

Explanation:

11		Cu	Zn	
A	4	:	3	A : B = 5 : 6
B	5	:	2	

$$\frac{\% \text{ of Zinc}}{\text{New alloy}} = \frac{3 \times 5 + 2 \times 6}{(4+3)5 + (5+2)6}$$

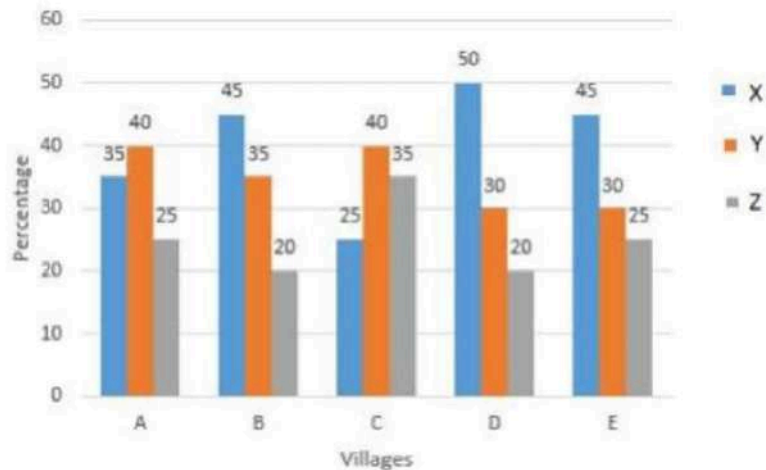
$$= \frac{15 + 12}{35 + 42}$$

$$= \frac{27}{77} \times 100\%$$

$$= 35.06\% \approx 35\%$$

Q. 62

The given bar graph presents the percentage of population in the age groups, X( above 50 years),Y( 22 to 50 years), Z( below 20 years) in five different villages, A, B, C, D and E with total population of 5000, 6000, 8000, 4500 and 6000 respectively.



The number of persons having ages below 20 years in villages, B and C taken together is what percentage of the total population of the said villages?

- a)  $190/7$  ☒
- b)  $186/5$  ☒
- c)  $200/7$  ☒
- d)  $184/5$  ☒

Explanation:

$$\begin{aligned}
 & \frac{12 \text{ Age} < 20 \text{ yrs in village B \& C}}{\text{Total Population of B \& C}} \times 100\% \\
 & \Rightarrow \frac{\left(\frac{20}{100} \times 6000\right) + \left(\frac{35}{100} \times 8000\right)}{6000 + 8000} \times 100\% \\
 & \Rightarrow \frac{1200 + 2800}{14000} \times 100\% \\
 & \Rightarrow \frac{200}{7}
 \end{aligned}$$

Q. 63

The value of  $24 \times 2 \div 12 + 12 \div 6$  of  $2 \div (15 \div 8 \times 4)$  of  $(28 \div 7$  of  $5)$  is :

- a)  $4\frac{2}{3}$  ✗
- b)  $4\frac{8}{75}$  ✗
- c)  $4\frac{32}{75}$  ✗
- d)  $4\frac{1}{6}$  ✓

Explanation:




$$\begin{aligned}
 & 13 \quad 24 \times 2 \div 12 + 12 \div 6 \text{ of } 2 \div (15 \div 8 \times 4) \text{ of } (28 \div 7 \text{ of } 5) \\
 & \qquad \qquad \qquad \frac{15}{8} \times 4 = \frac{15}{2} \qquad \qquad 28 \div 35 = \frac{4}{5} \\
 & \Rightarrow 24 \times 2 \div 12 + 12 \div 6 \text{ of } 2 \div \frac{15}{2} \text{ of } \frac{4}{5} \\
 & \Rightarrow 24 \times 2 \div 12 + 12 \div 12 \div \frac{15}{2} \times \frac{4}{5} \\
 & \Rightarrow 24 \times \frac{2}{12} + 12 \div 12 \div 6 \\
 & = 24 \times \frac{1}{6} + \frac{12}{12} \div 6 \\
 & = 4 + 1 \div 6 \\
 & = 4 + \frac{1}{6} \\
 & = 4\frac{1}{6}
 \end{aligned}$$



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

Q. 64

If the radius of the base of a cone is doubled, and the volume of the new cone is three times the volume of the original cone, then what will be the ratio of the height of the original cone to that of the new cone?

a) 9:4 b) 4:3 c) 2:9 d) 1:3 

Explanation:

14

$$\frac{V_1}{V_2} = \frac{\frac{1}{3} \pi (r_1)^2 h_1}{\frac{1}{3} \pi (r_2)^2 h_2}$$


original  
New

$$\frac{V_1}{3V_1} = \frac{(r_1)^2 h_1}{(2r_1)^2 h_2}$$

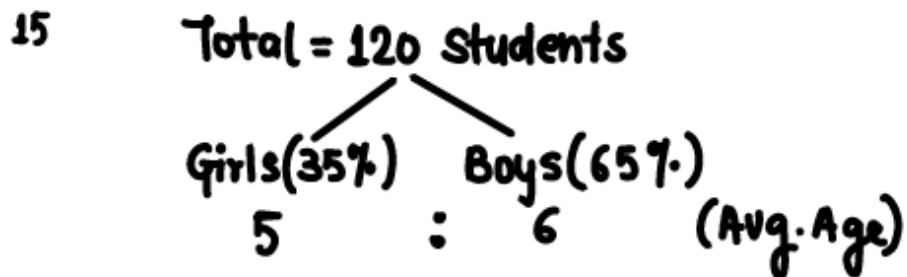
$$\frac{h_1}{h_2} = \frac{4}{3}$$

Q. 65

The average age of 120 students in a group is 13.56 years. 35% of the students are girls and the rest are boys. If the ratio of the average age of boys and girls is 6:5, then what is the average age ( in years ) of the girls?

a) 10 b) 12 c) 11.6 d) 14.4 

Explanation:



let common factor be 'x'





$$\Rightarrow \frac{\frac{35}{100} \times 5x + \frac{65}{100} \times 6x}{\frac{35}{100} + \frac{65}{100}} = 13.56$$

$$\Rightarrow 113x = \frac{1356 \times 2}{10}$$

$$\text{Avg. Age of Girls} = 5x = \frac{1356 \times 2}{113 \times 10} \times 5 = 12$$

Q. 66

Jeetu rows upstream a distance of 28 km in 4 h and rows downstream a distance of 50 km in 2h. To row a distance of 44.8 km in still water, he will take:

- a) 3.2 h   
 b) 2.8 h   
 c) 2.4 h   
 d) 2.2 h 

Explanation:

16 let speed of Stream be 's'  
 let speed of boat be 'b'

downstream speed =  $b + s$   
 upstream speed =  $b - s$

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

$$\Rightarrow b - s = \frac{28}{4} = 7 \text{ ———— (1)}$$

$$\Rightarrow b + s = \frac{50}{2} = 25 \text{ ———— (2)}$$

from (1) & (2) we get





$$b = 16 \text{ km/hr}, s = 9 \text{ km/hr}$$

$$\Rightarrow \frac{44.8}{b} = \frac{44.8}{16} = 2.8 \text{ hours}$$



Q. 67

The difference between the compound interest and the simple interest on a sum at 10% p.a. for 3 years is ₹155. The sum (in ₹) is:

- a) 5500 
- b) 6000 
- c) 6600 
- d) 5000 

Explanation:

$$17 \text{ CI - SI for 3 years} = P \left( \frac{R^2}{100} \right) \left( \frac{R}{100} + 3 \right)$$

$$\Rightarrow 155 = P \left( \frac{10}{100} \right)^2 \left( \frac{10}{100} + 3 \right)$$

$$\Rightarrow \overset{5}{\cancel{155}} = P \cdot \frac{1}{10} \cdot \frac{1}{10} \cdot \frac{31}{10}$$

$$\Rightarrow P = 5 \times 10^3$$

$$\Rightarrow P = 5000$$

Q. 68

When 7897, 8110 and 8536 are divided by the greatest number  $x$ , then the remainder in each case is the same. The sum of the digits of  $x$  is:

a) 6 ✓

b) 9 ✗

c) 14 ✗

d) 5 ✗

Explanation:

$$\begin{array}{l} 18 \quad 8110 - 7897 = 213 \\ \quad 8536 - 8110 = 426 \\ \quad 8536 - 7897 = 639 \end{array} \quad \left. \vphantom{\begin{array}{l} 8110 - 7897 = 213 \\ 8536 - 8110 = 426 \\ 8536 - 7897 = 639 \end{array}} \right\} \text{Hcf} = 213$$

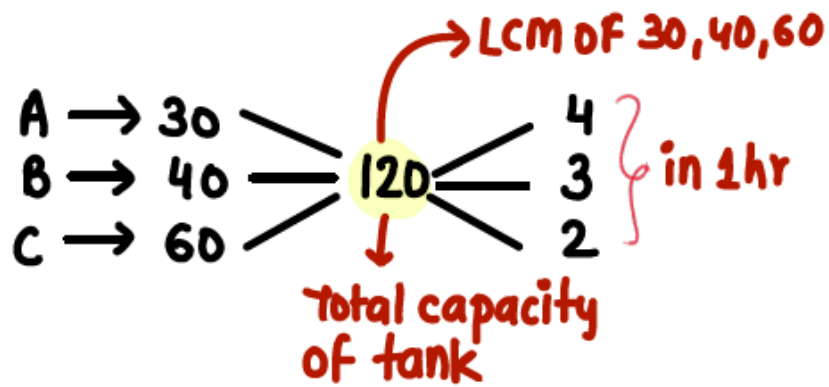
$$\begin{array}{l} \text{Sum of Digits of Hcf} = 2 + 1 + 3 \\ \quad \quad \quad = 6 \end{array}$$

Q. 69

Pipes A, B and C can fill a tank in 30 h, 40 h and 60 h respectively. Pipes A, B and C are opened at 7 a.m., 8 a.m., and 10 a.m., respectively on the same day. When will the tank be full?

a) 10:20 p.m. b) 10:00 p.m. c) 9:40 p.m. d) 9:20 p.m. 

19



Tank filled by pipe A from 7am to 10am  
 $= 4 \times 3 = 12$  units

Tank filled by pipe B from 8am to 10am  
 $= 3 \times 2 = 6$  units

Explanation:

$$\text{Remaining} = 120 - (12 + 6) \\ = 102 \text{ units}$$

$$\therefore \text{Time taken} = \frac{102}{9} = \frac{34}{3} \text{ hrs} = 11 \frac{1}{3} \text{ hr} \\ = 11 \text{ hrs } \frac{1}{3} \times 60 \text{ min} \\ = 11 \text{ hr } 20 \text{ min} \\ \text{(from 10 am)}$$

So, the tank will be filled at 9:20pm

Q. 70

Given that the lengths of the paths of a ball thrown with different speeds by two boys are the same. If they take 0.6 seconds and 1 second respectively to cover the said length. What is the average speed of travel for the first throw if the same for the second is 96 km/hr?

a) 100 km/h b) 150 km/h c) 160 km/h d) 200 km/h 

Explanation:

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

$$\Rightarrow 96 \text{ km/hr} = \frac{d}{1 \text{ sec}}$$

$$\Rightarrow d = \frac{96 \times 1}{60 \times 60}$$


$$\therefore \text{Speed} = \frac{\text{dist.}}{\text{time}}$$


$$\text{Speed} = \frac{96 \times 60 \times 60}{60 \times 60 \times 0.6}$$

$$= 160 \text{ km/hr}$$


Q. 71

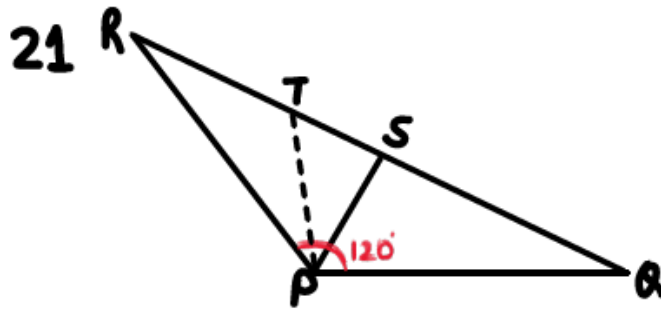
In  $\Delta PQR$ ,  $\angle P = 120^\circ$ ,  $PS \perp QR$  at  $S$  and  $PQ + QS = SR$ , then the measure of  $\angle Q$  is :

a)  $40^\circ$  

b)  $20^\circ$  

c)  $30^\circ$  

d)  $50^\circ$  



Construction : let T be a point on QR such that QS = ST

In  $\triangle PQT$ ,

$$QS = QT$$

$$PS \perp QT$$

$\Rightarrow \triangle PQT$  is an Isosceles triangle

$$\Rightarrow PT = PQ$$

$$\Rightarrow \angle PQT = \angle PTQ \quad [\text{angles opposite to equal sides are equal}]$$

Explanation:

$$PQ + QS = SR \quad (\text{given})$$

$$\Rightarrow PQ + QS = ST + TR$$

$$\Rightarrow PT + QS = QS + TR \quad (ST = QS)$$

$$\Rightarrow TP = TR$$

$$\Rightarrow \angle TPR = \angle TRP = x \quad (\text{let})$$

[angles opp. to equal sides are equal]

$$\Rightarrow \angle TPR + \angle TRP = \angle PTQ \quad [\text{triangle Exterior angle Theorem}]$$

$$\Rightarrow \angle PTQ = x + x = 2x$$

$$\Rightarrow \angle PQT = \angle PTQ = 2x$$

In  $\triangle PQR$

$$\angle PQR + \angle QRP + \angle RPQ = 180^\circ \quad [\text{sum of Interior angles of a } \triangle \text{ is } 180^\circ]$$


$$\Rightarrow 2x + x + 120^\circ = 180^\circ$$


$$\Rightarrow x = 20^\circ$$

$$\Rightarrow \angle PQR = 2x = 40^\circ$$

Q. 72

The marked price of an article is ₹800 and it is sold at a discount of 19%. If there is a gain of 8%, then by what percent above the cost price was the article marked?

a)  $33\frac{1}{3}$  

b)  $36\frac{2}{3}$  

c) 27 

d) 35 



$$\begin{aligned}
 22 \quad MP &= ₹ 800 \\
 \text{Discount} &= 19\% \\
 SP &= (1 - 19\%) 800 \\
 &= \frac{81}{100} \times 800 \\
 &= ₹ 648 \\
 \text{let } CP &= 100x \\
 \text{Gain} &= 8\% \\
 \Rightarrow 108x &= 648 \\
 \Rightarrow x &= 6
 \end{aligned}$$





Explanation:

$$\text{Now, } CP = 600$$

$$\begin{aligned}
 \Rightarrow \% \text{ above } CP &= \frac{MP - CP}{CP} \times 100\% \\
 &= \frac{800 - 600}{600} \times 100\% \\
 &= \frac{1}{3} \times 100\% \\
 &= 33 \frac{1}{3}\%
 \end{aligned}$$

Q. 73


If  $x^8 - 1442x^4 + 1 = 0$ , then a possible value of  $x - \frac{1}{x}$  is:

- a) 5 
- b) 8 
- c) 6 
- d) 4 

Explanation:

$$\begin{aligned}
 & 23 \quad x^8 - 1442x^4 + 1 = 0 \\
 & \text{Divide by } x^4, \quad \frac{x^8 - 1442x^4 + 1}{x^4} = 0 \\
 & \Rightarrow x^4 + \frac{1}{x^4} = 1442 \\
 & \Rightarrow x^4 + \frac{1}{x^4} + 2 = 1444 \\
 & \Rightarrow \left(x^2 + \frac{1}{x^2}\right) = \sqrt{1444} = 38 \\
 & \Rightarrow x^2 + \frac{1}{x^2} - 2 = 38 - 2 = 36 \\
 & \Rightarrow \left(x - \frac{1}{x}\right)^2 = 36 \\
 & \Rightarrow x - \frac{1}{x} = \sqrt{36} \\
 & \Rightarrow x - \frac{1}{x} = 6
 \end{aligned}$$

Q. 74

The value of  $\tan^2\theta + \cot^2\theta - \sec^2\theta \operatorname{cosec}^2\theta$  is equal to:a) -1 b) -2 c) 1 d) 0 

$$24 \quad \tan^2 \phi + \cot^2 \phi - \sec^2 \phi \operatorname{cosec}^2 \phi$$

$$\Rightarrow \frac{\sin^2 \phi}{\cos^2 \phi} + \frac{\cos^2 \phi}{\sin^2 \phi} - \frac{1}{\cos^2 \phi} \times \frac{1}{\sin^2 \phi}$$

$$\Rightarrow \frac{\sin^4 \phi + \cos^4 \phi - 1}{\sin^2 \phi \cos^2 \phi}$$

$$\Rightarrow \frac{(\sin^2 \phi)^2 + (\cos^2 \phi)^2 - 1}{\sin^2 \phi \cos^2 \phi}$$

$$\Rightarrow \frac{(\sin^2 \phi + \cos^2 \phi)^2 - 2 \sin^2 \phi \cos^2 \phi - 1}{\sin^2 \phi \cos^2 \phi}$$

$$\Rightarrow \frac{\cancel{1} - 2 \sin^2 \phi \cos^2 \phi - \cancel{1}}{\sin^2 \phi \cos^2 \phi}$$

$$\Rightarrow \frac{-2 \cancel{\sin^2 \phi} \cancel{\cos^2 \phi}}{\cancel{\sin^2 \phi} \cancel{\cos^2 \phi}}$$

$$= -2$$



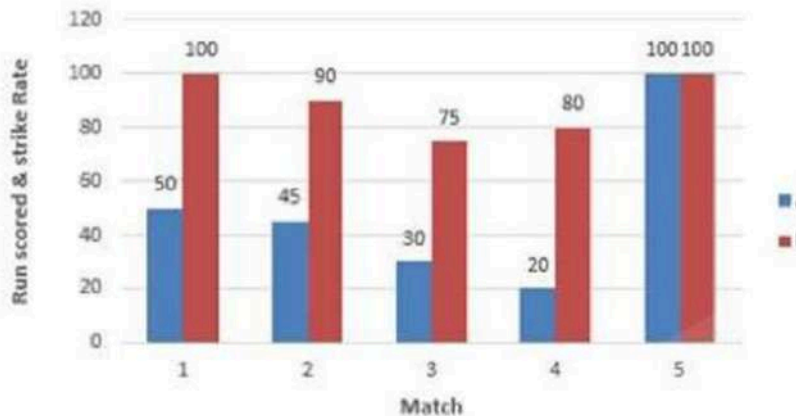
PTS WAY-

$$\text{Put } \phi = 45^\circ$$

Explanation:

Q. 75

The given Bar Graph presents the runs scored (A) and strike rate (B) of a batsman in five matches. Strike rate is the number of runs scored per 100 balls faced. The strike rate (B) is taken on record only when the batsman scores at least 30 runs in a match.



How many balls did the batsman face in the third match?

- a) 60 ☒
- b) 30 ☒
- c) 40 ☒
- d) 50 ☒





Explanation:

$$25 \quad \text{Strike rate} = \frac{\text{Runs}}{\text{Balls}}$$





In 3<sup>rd</sup> match run scored = 30 ,  
Strike rate = 75

$$\Rightarrow \frac{75}{100} = \frac{30}{\text{Ball faced}}$$





$$\Rightarrow \text{Ball faced} = 40$$





Q. 76	<p><b>What is the purpose of the Cultural and Educational Rights?</b></p> <p>a) To promote a particular religion </p> <p>b) To protect the language, culture, and religion of the minority communities </p> <p>c) To protect the majority community </p> <p>d) To prevent exploitation </p>
Explanation:	<p>Correct answer = Option 2 (To protect the language, culture, and religion of the minority communities)</p> <p><b>Cultural and Educational Rights</b> = Articles 29-30</p> <p><b>Article 29 =</b></p> <ul style="list-style-type: none"> <li>This Article deals with <b>the protection of interests of minorities</b>. It states that— <ul style="list-style-type: none"> <li>(1) Any section of the citizens residing in the territory of India or any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same.</li> <li>(2) No citizen shall be denied admission into any educational institution maintained by the State or receiving aid out of State funds on grounds only of religion, race, caste, language or any of them.</li> </ul> </li> <li>This Article applies to the citizens only.</li> </ul> <p><b>Article 30 =</b></p> <ul style="list-style-type: none"> <li>This Article deals with the right of minorities to <b>establish and administer educational institutions</b>. It states that— <ul style="list-style-type: none"> <li>(1) All minorities, whether based on religion or language, shall have the right to establish and administer educational institutions of their choice.</li> <li>(1A) In making any law providing for the compulsory acquisition of any property of an educational institution established and administered by a minority, the State shall ensure that the amount fixed by or determined under such law for the acquisition of such property is such as would not restrict or abrogate the right guaranteed under that clause.</li> <li>(2) The State shall not, in granting aid to educational institutions, discriminate against any educational institution on the grounds that it is under the management of a minority, whether based on religion or language.</li> </ul> </li> <li>It applies to both citizens and non-citizens.</li> <li>Article 30(1A) was added by the 44th Constitutional Amendment Act of 1978.</li> </ul>





<p><b>Q. 77</b></p>	<p><b>Vishu festival is celebrated in which of the following states?</b></p> <p>a) Gujarat and Maharashtra ❌</p> <p>b) Madhya Pradesh &amp; Rajasthan ❌</p> <p>c) Kerala And Tamil Nadu ✅</p> <p>d) Kerala And Karnataka ❌</p>
<p><b>Explanation:</b></p>	<p>Correct answer = Option 3 (Kerala And Tamil Nadu)</p> <p><b>Vishu Festival =</b></p> <ul style="list-style-type: none"> <li>• Spring festival observed by Malayali Hindus in Kerala andTamilnadu.</li> <li>• Vishu (Sanskrit: "equal") celebrates the vernal equinox, when day and night are roughly equal.</li> <li>• Vishu festival falls on the first day of the Malayali month of Medam, which occurs on either April 14 or 15</li> </ul> <p><b>States &amp; their Festivals =</b></p> <ul style="list-style-type: none"> <li>• <b>Kerala</b> = Onam, Vishu, Makaravilakku, Attukal Pongala, Theyyam, Utsavam, Thrissur Pooram, Nehru Trophy Boat Race</li> <li>• <b>Tamil Nadu</b> =             <ul style="list-style-type: none"> <li>◦ <b>Puthandu</b> – Tamil New Year's Day</li> <li>◦ <b>Natyanjali Dance Festival</b> – Dedicated to Nataraja</li> <li>◦ <b>Thaipusam</b> – The Birthday of Lord Subramaniam</li> <li>◦ <b>Thiruvaiyaru Festival</b> – A Tribute to Thyagaraja</li> <li>◦ <b>Karthigai Deepam</b> – The Festival of Lights</li> <li>◦ <b>Mahamaham Festival</b> – A Unique Duodecennial Festival</li> <li>◦ <b>Pongal</b> –                 <ul style="list-style-type: none"> <li>▪ <b>Bhogi Pongal (1<sup>st</sup> day)</b> = This day is for renewal and cleansing.</li> <li>▪ <b>Surya Pongal (Thai Pongal) (2<sup>nd</sup> day)</b> =This is the main day of the festival and is dedicated to the Sun God, Surya.</li> <li>▪ <b>Mattu Pongal (3<sup>rd</sup> day)</b> = This day is devoted to honoring and worshipping cattle (Mattu)</li> <li>▪ <b>Kaanum Pongal (4<sup>th</sup> day)</b> = This is a day for family reunions, social gatherings, and strengthening community ties.</li> <li>▪ <b>Kolam Rangoli is traditionally drawn during Pongal.</b></li> </ul> </li> </ul> </li> <li>◦ <b>Karnataka</b> = Mysore Dasara, Ugadi, Hampi Festival, Kambala, Karaga, Vairamudi festival, Gowri festival, Pattadakal</li> </ul>





Q. 78	<p>Which of the following pairs of 'Plastids - Things stored' is NOT correct?</p> <p>I. Amyloplasts - Oils and fats</p> <p>II. Aleuroplasts - Carbohydrates</p> <p>a) Only I </p> <p>b) Both I and II </p> <p>c) Neither I nor II </p> <p>d) Only II </p>
Explanation:	<p>Correct answer = Option 2 (Both I and II)</p> <p><b>Statement I is incorrect =</b></p> <ul style="list-style-type: none"> <li>• Amyloplasts are plastids that store carbohydrate (starch), not oils and fats.</li> <li>• Plastids that store oils and fats are called <b>elaioplasts</b>.</li> </ul> <p><b>Statement II is incorrect =</b></p> <ul style="list-style-type: none"> <li>• Aleuroplasts are associated with storing proteins, not carbohydrates.</li> <li>• Carbohydrates (like starch) are stored in <b>amyloplasts</b>.</li> </ul> <p><b>Plastids =</b></p> <ul style="list-style-type: none"> <li>• Plastids are the site of food production and storage in plants and algae.</li> <li>• Plastids are double membrane-bound cell organelle.</li> <li>• Found in plants, algae and some eukaryotic cells.</li> <li>• <b>Ernest Haeckel</b> discovered it and <b>A. F. W. Schimper</b> later provided a precise definition.</li> <li>• These organelles are responsible for the synthesis and storage of food in them.</li> <li>• Terrestrial plants contain more amounts of plastids than aquatic plants.</li> <li>• <b>Types of Plastids =</b> <ul style="list-style-type: none"> <li>◦ <b>Chloroplast</b> = Chlorophyll is the green pigment that imparts green colour to the leaves and is responsible for photosynthesis.</li> <li>◦ <b>Chromoplasts</b> = They impart colour to flowers and fruits.</li> <li>◦ <b>Leucoplasts</b> = Colourless plastids are known as leucoplasts.</li> <li>◦ <b>Gerontoplasts</b> = Gerontoplasts are the product of senescence. Senescence refers to the state of cells when they lack the division capability.</li> </ul> </li> </ul>



<p><b>Q. 79</b></p>	<p><b>Cheraw, popularly known as bamboo dance, is a traditional cultural dance of which state?</b></p> <p>a) Uttarakhand </p> <p>b) Mizoram </p> <p>c) Manipur </p> <p>d) Jharkhand </p>
<p><b>Explanation:</b></p>	<p>Correct answer = Option 2 (Mizoram)</p> <ul style="list-style-type: none"> <li>• <b>Mizoram =</b> <ul style="list-style-type: none"> <li>◦ <b>Cheraw Dance</b> – This dance form is also known as the bamboo dance and is one of the oldest dance forms of Mizoram.</li> <li>◦ <b>Khuallam Dance</b> – <ul style="list-style-type: none"> <li>▪ This dance form is performed during the festival of Khuangchawi.</li> <li>▪ In this dance form guests from neighbouring villages are invited to perform.</li> </ul> </li> <li>◦ <b>Chaim Dance</b> – <ul style="list-style-type: none"> <li>▪ It is performed during the Chapchar Kut festival in Mizoram.</li> <li>▪ It is performed both by males and females.</li> </ul> </li> <li>◦ <b>Chhieh Lam Dance</b> – <ul style="list-style-type: none"> <li>▪ This dance form shows us the rich culture of the elite class of Mizoram. The term Chhieh means exclamation of joy and lam means dance.</li> <li>▪ In this dance form, people sit in a circle on their heels while a dancer is positioned in the middle of the circle.</li> </ul> </li> <li>◦ <b>Chawnglaizawn Dance</b> – <ul style="list-style-type: none"> <li>▪ It is performed by the Pawi community.</li> <li>▪ The husband dances to this on the death of his wife, accompanied his friends and relatives to mourn the death of his wife.</li> </ul> </li> <li>◦ <b>Tlanglam Dance</b> – This dance form is performed by both men and women to the music of Puma.</li> <li>◦ <b>Zangtalam Dance</b> – It is a community dance form performed by the Paihte tribe.</li> </ul> </li> </ul>

Q. 80	<p>The landmark case of <b>D. C. Wadhwa vs. State of Bihar</b> in the Supreme Court is related to which one of the following powers of the Governor?</p> <p>a) To repromulgate ordinances </p> <p>b) To appoint a Chief Minister </p> <p>c) To grant pardon, etc </p> <p>d) To revise the emoluments and allowances of the MLAs </p>
Explanation:	<p>Correct answer = Option 1 (To repromulgate ordinances)</p> <p><b>Ordinance =</b></p> <ul style="list-style-type: none"> <li>• A piece of legislation enacted by a non-legislative authority, often the executive branch of government, under specific circumstances.</li> <li>• <b>Article 123:</b> empowers the President to promulgate ordinances during the recess of Parliament.</li> <li>• <b>Article 213:</b> empowers the Governor to promulgate ordinances during the recess of the State Legislature.</li> <li>• <b>Repromulgation of Ordinance =</b> <ul style="list-style-type: none"> <li>◦ When an Ordinance lapses, the government can choose to re-promulgate it if necessary.</li> <li>◦ In a 2017 case, the Supreme Court ruled that repeated re-promulgations without legislative consideration would be unconstitutional and a violation of the legislature's role.           <ul style="list-style-type: none"> <li>▪ The court emphasised that the power to issue an Ordinance should be treated as an emergency measure and not as a means to bypass the legislature.</li> </ul> </li> <li>◦ <b>Some of the prominent such cases are:</b> <ul style="list-style-type: none"> <li>▪ <b>R.C. Cooper v. Union of India (1970):</b> This case challenged the Banking Companies (Acquisition and Transfer of Undertakings) Ordinance, 1969, which nationalised 14 major banks in India.</li> <li>▪ <b>A.K. Roy v. Union of India (1982):</b> This case challenged the National Security Ordinance, 1980, which provided for preventive detention of persons for up to one year without trial.</li> </ul> </li> <li>◦ <b>D.C. Wadhwa v. State of Bihar (1987):</b> This case challenged a series of ordinances issued by the Governor of Bihar between 1967 and 1981 on various subjects, some of which were promulgated several times without being placed before the state legislature.</li> </ul> </li> </ul>

Q. 81	<p><b>Stunted growth, which is common in children growing up in extreme poverty, is a sure sign of _____.</b></p> <p>a) Lack of Clothing </p> <p>b) Sleep Deprivation </p> <p>c) Lack of Housing </p> <p>d) Undernutrition </p>
Explanation:	<p>Correct answer = Option 4 (Undernutrition)</p> <p><b>Stunted growth =</b></p> <ul style="list-style-type: none"> <li>• Also known as stunting or linear growth failure.</li> <li>• Defined as impaired growth and development manifested by low height-for-age.</li> <li>• A condition where a child is significantly shorter than the average height for their age due to chronic undernutrition, repeated infections, and lack of proper care especially during the first 1,000 days (from conception to age 2)</li> <li>• <b>Causes =</b> <ul style="list-style-type: none"> <li>◦ Chronic undernutrition (main cause)</li> <li>◦ Poor maternal health and nutrition</li> <li>◦ Repeated infections (e.g., diarrhea, respiratory diseases)</li> <li>◦ Poor infant feeding practices</li> <li>◦ Lack of clean water and sanitation</li> </ul> </li> <li>• <b>Prevention of Stunted Growth:</b> <ul style="list-style-type: none"> <li>◦ Good maternal nutrition before and during pregnancy</li> <li>◦ Exclusive breastfeeding for the first 6 months</li> <li>◦ Nutritious complementary feeding after 6 months</li> <li>◦ Timely vaccinations and treatment of infections</li> <li>◦ Access to clean water and sanitation</li> <li>◦ Parental education and healthcare access</li> </ul> </li> <li>• <b>Marasmus</b> is caused by a severe <u>deficiency of mostly all the vital nutrients</u> like carbohydrates , protein , and lipids .</li> <li>• <b>Kwashiorkor</b> disease occurs due to severe deficiency of PROTEIN in the body .Children who develop Kwashiorkor may not grow or develop properly and may remain stunted for the rest of their lives .</li> </ul>

Q. 82	<p><b>Epilimnetic, metalimnetic, and hypolimnetic water strata are example of:</b></p> <p>a) Various ecological phases </p> <p>b) Typical layers of hard rock </p> <p>c) Different layers of underground water </p> <p>d) Typical thermal stratification of a lake </p>
<b>Explanation:</b>	<p>Correct answer = Option 4 (Typical thermal stratification of a lake)</p> <p><b>Epilimnion =</b></p> <ul style="list-style-type: none"> <li>• The uppermost layer of the lake</li> <li>• Warmest layer due to solar heating</li> <li>• Well-mixed by wind and surface currents</li> <li>• High oxygen levels (from atmospheric exchange and photosynthesis)</li> <li>• Supports most aquatic life and primary productivity</li> <li>• Depth generally from surface down to 5–15 meters, depending on lake size, latitude, and season</li> </ul> <p><b>Metalimnion (Thermocline) =</b></p> <ul style="list-style-type: none"> <li>• The middle layer, acting as a transitional zone between the epilimnion and hypolimnion.</li> <li>• Sharp temperature gradient (temperature drops rapidly with depth)</li> <li>• Acts as a barrier to mixing between upper and lower layers</li> <li>• Oxygen levels begin to decrease with depth</li> <li>• Depth varies, but typically found 10–20 meters below surface in temperate lakes</li> </ul> <p><b>Hypolimnion =</b></p> <ul style="list-style-type: none"> <li>• The deepest layer of the lake, extending to the bottom.</li> <li>• Coldest and densest layer</li> <li>• Isolated from surface winds and mixing</li> <li>• Often low in oxygen, especially in summer (due to decomposition and no replenishment)</li> <li>• Supports fewer organisms; anaerobic conditions may develop in deep lakes</li> <li>• Depth from bottom of the metalimnion to the lake bed.</li> </ul>

Q. 83

Who among the following freedom fighters hoisted the Indian flag at the Gowalia Tank Maidan in Mumbai during the Quit India Movement ?

a) Aruna Asaf Ali 

b) Sarojini Naidu 

c) Tara Rani Srivastava 





d) Matangini Hazra 

Explanation:

Correct answer = Option 1 (Aruna Asaf Ali)

**Quit India Movement =**

- Also known as August Kranti.
- On **8th August 1942**, Mahatma Gandhi called to end British rule and launched the Quit India Movement at the session of the All-India Congress Committee in **Mumbai**.
- Gandhiji gave the call "**Do or Die**" in his speech delivered at the **Gowalia Tank Maidan**, now popularly known as **August Kranti Maidan**.
- Aruna Asaf Ali popularly known as the '**Grand Old Lady**' of the Independence Movement is known for **hoisting the Indian flag** at the Gowalia Tank Maidan in Mumbai
- The slogan 'Quit India' was coined by **Yusuf Meherally**.
  - A socialist and trade unionist who also served as Mayor of Mumbai.
  - Meherally had also coined the slogan "Simon Go Back".
- The patriotic song '**Saare Jahan Se Accha**' was written by **Muhammad Iqbal** , was first published in the weekly journal **Ittehad** on 16 August ,1904.
- The Statement – ' We shall die to awaken the nation' was made by **Bagha Jatin** .
- **Kaushal Konwar** was the only martyr of the Quit India phase of the freedom movement who was hanged .
- The lyrics of the song '**Aye Mere Watan Ke Logon**' was written by **Pradeep** , and originally sung by **Lata Mangeshkar** .
- **Matangini Hazra** is known as '**old lady Gandhi**'.
- **Sarojini Naidu** described Jinnah as 'the ambassador of Hindu-Muslim Unity'.
- **Abul Kalam Azad** was the President of the Indian National Congress during the Quit India Movement .
- **Movement Caused =**
  - Due to Failure of Cripps Mission
  - Indian Involvement in World War II without prior consultation
  - Prevalence of anti-British Sentiment
  - Centralisation of Many Small Movements
  - Shortage of Essential Commodities
- **Demands of the Movement =**
  - The demand was to end the British rule in India with immediate effect to get the cooperation of Indians in World War-II against fascism.
  - There was a demand to form a provisional government after the withdrawal of the Britishers.

<p><b>Q. 84</b></p>	<p><b>Who among the following is the Chairperson of the Goods and Services Tax Council?</b></p> <p>a) The Prime Minister of India </p> <p>b) The Union Finance Minister </p> <p>c) The Speaker of the Lok Sabha </p> <p>d) The President of India </p>
<p><b>Explanation:</b></p>	<p>Correct answer = Option 2 (The Union Finance Minister)</p> <p><b>Goods and Services Tax (GST) Council =</b></p> <ul style="list-style-type: none"> <li>• The Goods and Services Tax regime came into force after the Constitutional <b>(122nd Amendment)</b> Bill was passed by both Houses of Parliament in <b>2016</b>.</li> <li>• GST was introduced through the <b>101st Constitution Amendment Act, 2016</b>.</li> <li>• It was introduced in India on <b>1st July 2017</b>.</li> <li>• More than 15 Indian states then ratified it in their state Assemblies, after which the President gave his assent.</li> <li>• It was introduced with the slogan of 'One Nation One Tax'.</li> <li>• The GST Council is a joint forum of <b>the Centre and the states</b>.</li> <li>• It was set up by the President as per <b>Article 279A (1)</b> of the amended Constitution.</li> <li>• The members of the Council include the Union Finance Minister (<b>chairperson</b>), the Union Minister of State (Finance) from the Centre.</li> <li>• It has a 5-tier tax structure for all goods and services under the slabs- <b>0%, 5%, 12%, 18% and 28%</b>.</li> <li>• The idea of a nationwide GST in India was first proposed by the Kelkar Task Force on Indirect taxes in 2000.</li> <li>• <b>Reason for introducing GST:</b> <ul style="list-style-type: none"> <li>◦ To mitigate the double taxation, cascading effect of taxes, multiplicity of taxes, classification issues etc., and has led to a common national market.</li> </ul> </li> <li>• <b>Assam was</b> the first Indian state to ratify the GST Constitution Amendment Bill .</li> </ul>

**Q. 85**

With reference to the city administration of the Mauryan Empire, consider the following statements.

A) Megasthenes put light on the Mauryan city administration.

B) The city council was divided into six committees.

C) City administration was well planned.

Which of the above statements is/are correct?

a) B, C 

b) A,B 

c) A,B,C 

d) C,A 





Correct answer = Option 3 (A,B,C)

**Mauryan Administration =**

- The Mauryan Empire, which lasted from 321 B.C.E. to 185 B.C.E., was the first pan-Indian empire, encompassing much of the Indian subcontinent.
- **Central Administration:**
  - There are 7 elements of states (Saptanga theory):
    - Raja (the king)
    - Mitra (Friend)
    - Durg (fort)
    - Amatya (the secretaries)
    - Janapada (territory)
    - Kosha (the treasure)
    - Sena (Army).
- **Military administration:**
  - Military administration is controlled by a board of 30 members divided into six committees of infantry, cavalry, elephants, chariots, navy, and transport.
- **Justice System:**
  - There were **Rajukas** who were equal to our modern district- magistrates.
  - Kautilya mentions two other kinds of courts **Dharmasthiya (Civil Court) and Kantakashodhana (Criminal Court).**
- **Local Administration:**
  - The empire was split into four provinces, each led by a prince or a member of the royal family (Kumara or Aryaputra).
  - There were four provinces under Asoka:
    - **The Northern Province (Uttarapatha)** with Taxila as its capital
    - **The Western Province (Avantiratha)** with Ujjain as its headquarters
    - **The Eastern Province (Prachyapatha)** with Tosali as its centre
    - **The Southern Province (Dakshinapatha)** with Suvarnagiri as its capital.
- **City Administration:**
  - **Megasthenes'** description of city administration was most likely applicable to Pataliputra specifically.
  - It suggested **six committees of five members each**, in charge of the following aspects:
    - Industrial arts
    - The leisure and surveillance of foreigners
    - Preserving information of births and deaths
    - Trade and commerce
    - Supervising the general public sale of goods
    - The tax collection on merchandise sold in the market.





**Explanation:**



<p><b>Q. 86</b></p>	<p><b>How many of the following pairs of specialized agriculture and its products are correctly matched?</b></p> <ol style="list-style-type: none"> <li><b>1. Apiculture : Honey</b></li> <li><b>2. Sericulture : Silk</b></li> <li><b>3. Silviculture : Forestry</b></li> <li><b>4. Viticulture : Grapes</b></li> </ol> <p><b>Select the correct answer using the code given below:</b></p> <p>a) 4 </p> <p>b) 3 </p> <p>c) 2 </p> <p>d) 1 </p>
<p><b>Explanation:</b></p>	<p>Correct answer = Option 1 (4)</p> <p><b>Some agriculture and its product =</b></p> <ul style="list-style-type: none"> <li>• <b>Horticulture</b> = Fruits, vegetables, flowers, and ornamental plants</li> <li>• <b>Floriculture</b> = Flowers and ornamental plants</li> <li>• <b>Pomology</b> = Fruits (e.g., apples, mangoes, citrus)</li> <li>• <b>Olericulture</b> = Vegetables (e.g., tomatoes, spinach, onions)</li> <li>• <b>Agronomy</b> = Field crops (e.g., wheat, rice, maize) and soil management</li> <li>• <b>Aquaculture</b> = Fish and aquatic organisms (e.g., shrimp, oysters)</li> <li>• <b>Pisciculture</b> = Fish (breeding and rearing)</li> <li>• <b>Apiculture</b> = Honey and bee products (e.g., beeswax)</li> <li>• <b>Sericulture</b> = Silk (from silkworms)</li> <li>• <b>Viticulture</b> = Grapes (mainly for wine production)</li> <li>• <b>Silviculture</b> = Forest trees, timber, and forest management</li> <li>• <b>Vermiculture</b> = Earthworms and organic compost (vermicompost)</li> </ul>

**Q. 87**

**The two important features of sexual reproduction in higher organisms that create genetic diversity in offspring are**

- a) Mitosis and fertilization 
- b) Meiosis and fertilization 
- c) Mitosis and binary fission 
- d) Meiosis and conjugation 

Correct answer = Option 2 (Meiosis and fertilization)

**Mitosis =**

- A process of cell division that results in two genetically identical daughter cells from a single parent cell.
- The process is classically divided into several stages:
  - **Prophase:** Chromosomes condense and become visible.
  - **Metaphase:** Chromosomes align at the cell's equatorial plane.
  - **Anaphase:** is the step in mitosis where non-kinetochore spindle fibres lengthen and elongate the cell.
  - **Telophase:** Nuclear membranes reform around the separated chromosomes. Mitosis ensures that the genetic material is accurately replicated and distributed, maintaining the chromosome number in daughter cells.

**Meiosis =**

- Meiosis is a type of cell division that reduces the chromosome number by half, producing four genetically different haploid cells (gametes: sperm or egg in animals, pollen or ovule in plants). It is essential for sexual reproduction.
- **Phases of Meiosis =**
  - **Meiosis I (Reduction Division)**
  - **Meiosis II (Like Mitosis)**
- Produces gametes for sexual reproduction.
- Introduces genetic diversity (via crossing over & independent assortment).
- Ensures stability of chromosome number across generations.

**Explanation:**

**Binary Fission =**

- Binary fission is a type of asexual reproduction commonly seen in unicellular organisms like bacteria, archaea, amoeba, and certain protists. In this process, a single organism divides into two genetically identical daughter cells.
- **Steps in Binary Fission**
  - **DNA Replication =** The single, circular DNA molecule is copied.
  - **Cell Growth =** The cell grows larger, and the two DNA copies move to opposite ends
  - **Segregation of DNA =** The cell membrane begins to pinch inward.
  - **Cytokinesis =** The cell splits into two daughter cells, each with an identical copy of the DNA

**Conjugation =**

- Conjugation is a type of sexual-like process seen mainly in unicellular organisms like bacteria, certain protozoa (e.g., Paramecium), and some algae. It involves the transfer of genetic material from one organism (the donor) to another (the recipient) through direct contact, but no new cells are formed during this process.
- **Conjugation in Bacteria =**
  - Pilus Formation
  - Plasmid Transfer
  - Separation

Q. 88

The statement- "We shall die to awaken the nation" was made by.

a) Bagha Jatin b) Pingali Venkayya c) Bir Tikendrajit Singh d) Surya Sen 

Explanation:

Correct answer = Option 1 (Bagha Jatin)

**Bagha Jatin (Jatindranath Mukherjee) =**

- **Famous Quote:** "We shall die to awaken the nation" (also known in Bengali as Amra morbo, jagat jagbe)
- A fearless revolutionary leader of the Jugantar group in Bengal.
- Planned a large-scale armed uprising against the British during World War I with support from Germany (the German Plot), but it failed.

**Pingali Venkayya =**





- Designer of the Indian national flag.
- His flag was first approved by the Indian National Congress in 1921.
- Venkayya's design had **two colors**:
  - Red for Hindus
  - Green for Muslims
- Gandhi suggested adding a third color—white (for other communities and peace)—and a spinning wheel (charkha) in the center to symbolize self-reliance (Swadeshi).
- While the current tricolor (Tiranga) was officially adopted on 22 July 1947
- Known as "Jhanda Venkaiah" or "Flag Man of India".

**Bir Tikendrajit Singh =**

- A prince of Manipur and a military commander.
- Played a key role in resisting British encroachment during the Anglo-Manipur War (1891).
- Hailed as the "Lion of Manipur".

**Surya Sen (Master Da) =**

- Leader of the Chittagong Armoury Raid (1930).
- Surya Sen often stated, "Humanism is a Special virtue of a revolutionary".
- Known as "Master Da," he also worked as a teacher and admired poets like Tagore and Qazi Nazrul Islam
- He joined Anushilan Samiti.
- Indian Republican Army founded by Surya Sen

<p><b>Q. 89</b></p>	<p><b>Who among the following is the author of the book 'India After Gandhi: The History of the World's Largest Democracy' ?</b></p> <p>a) Ramchandra Guha </p> <p>b) Anuja Chauhan </p> <p>c) Ravinder Singh </p> <p>d) Sandhya Menon </p>
<p><b>Explanation:</b></p>	<p>Correct answer = Option 1 (Ramchandra Guha)</p> <p><b>Notable Works:</b></p> <ul style="list-style-type: none"> <li>• <b>Ramachandra Guha =</b> <ul style="list-style-type: none"> <li>◦ India After Gandhi: The History of the World's Largest Democracy (2007)</li> <li>◦ Gandhi Before India and Gandhi: The Years That Changed the World</li> <li>◦ The Penguin History of Modern India: 1857 to the 21st Century</li> <li>◦ Environmentalism: A Global History</li> </ul> </li> <li>• <b>Anuja Chauhan =</b> <ul style="list-style-type: none"> <li>◦ The Zoya Factor (2008)</li> <li>◦ Battle for Bittora (2010)</li> <li>◦ Those Pricey Thakur Girls (2013)</li> <li>◦ Baaz (2017)</li> </ul> </li> <li>• <b>Ravinder Singh =</b> <ul style="list-style-type: none"> <li>◦ I Too Had a Love Story (2008)</li> <li>◦ Can Love Happen Twice? (2011)</li> <li>◦ Like it Happened Yesterday (2014)</li> <li>◦ Your Dreams are Mine Now (2015)</li> </ul> </li> <li>• <b>Sandhya Menon =</b> <ul style="list-style-type: none"> <li>◦ When Dimple Met Rishi (2017)</li> <li>◦ From Twinkle, with Love (2018)</li> <li>◦ There's Something About Sweetie (2021)</li> </ul> </li> </ul>

Q. 90

What is the primary characteristic of the Thar Desert's soil?

- a) Rocky soil 
- b) Wet and marshy soil 
- c) Sandy and dry soil 
- d) Fertile and black soil 

Explanation:

Correct answer = Option 3 (Sandy and dry soil)

**Types of Soil:**

- **Sandy Soil =**

- Sandy soil consists of large particles and is formed by the weathering of rocks like granite and quartz.
- Large particle size.
- Poor water retention.
- Good drainage.

- **Silt Soil =**

- Silt soil has smaller particles than sand and is smoother to the touch. It retains water better and is more fertile, making it suitable for agriculture.
- Smooth texture.
- Retains water better than sandy soil.
- Highly fertile.

- **Loamy Soil =**

- Loamy soil is a balanced mixture of sand, silt, and clay, with added organic matter like humus.
- Retains water and nutrients effectively.
- Well-drained.
- High fertility.

- **Alluvial Soil =**

- Alluvial soil is formed by the deposition of silt and sand carried by rivers.
- Rich in potash & poor in phosphorus.
- Suitable for agriculture.
- Common in river plains.
- Colour is light grey to ash grey.

- **Red Soil =**

- Red soil gets its colour from the presence of iron oxide. It is found in regions with a warm and humid climate.
- Changes colour to yellow on hydration.
- Low fertility but can be improved.
- Drain well.

**Q. 91****Which one of the following is not a bottom relief of the Indian Ocean?****a) Chagos Ridge** **b) Amsterdam - St. Paul Ridge** **c) Somali Basin** **d) Philippine Trench** 





Correct answer = Option 4 (Philippine Trench)

**Bottom Reliefs =**

- The bottom relief of the ocean is the variation in elevation present on the seafloor.
- It can be caused by a variety of factors, including tectonic activity, sedimentation, and erosion.
- **Some common bottom relief features include:**
  - **Mid-ocean ridges:** Underwater mountain ranges that are formed by plate tectonics.
  - **Seamounts:** Isolated volcanic mountains that rise from the seafloor.
  - **Trenches:** Deep, elongated depressions in the seafloor.
  - **Guyots:** Flat-topped seamounts that have been eroded over time.
  - **Volcanic mountains:** Formed by volcanic activity.
  - **Reefs:** Formed by the growth of marine organisms, such as coral.
  - **Sandbanks:** Shallow areas of the seafloor that are covered in sand.
  - **Atolls:** Ring-shaped reefs typically formed around a volcanic island.
- **Bottom Reliefs of the Indian Ocean =**
  - The Indian Ocean is smaller than the Pacific and Atlantic Ocean in a real extent and is bounded by, on all of its sides, Asia in the north, Africa in the west, Asia in the east, Australia in the south-east and Antarctica in the south.
  - The average depth of the ocean is 4000m.
  - **Continental Shelf:**
    - The continental shelves are very wide (640 km) in the west whereas these are narrow (160 km) along the coast of Java and Sumatra.
  - **Mid-Oceanic Ridge:**
    - The ridge further extends southward and widens near equator. It is called Chagos- St. Paul Ridge between equator and 30°S latitude where the average width becomes 320 km.
  - **Branches of the Central Ridge:**
    - Socotra-Chagos Ridge
    - Seychelles – Mauritius
    - Madagascar Ridge
    - S.W. Indian Ridge.
    - Ninety East Ridge
  - **Ocean Basins:**
    - Oman basin
    - Arabian basin
    - Somali basin
    - Mauritius basin
    - Mascarene basin
    - Agulhas-Natal basin
    - Atlantic- Indian – Antarctic basin
    - Eastern Indian-Antarctic basin
    - West Australian basin
    - Mid-Indian basin





**Explanation:**



Q. 92	<p>Vishnushastri Chiplunkar started a monthly Marathi magazine _____, in 1874 for the cause of social reform.</p> <p>a) Prabhakar </p> <p>b) Kesari </p> <p>c) Nibandhmala </p> <p>d) Pudhari </p>
Explanation:	<p>Correct answer = option 3 (Nibandhmala)</p> <p><b>Newspaper with their publisher:</b></p> <ul style="list-style-type: none"> <li>• Bengal Gazette (English newspaper) = James Augustus Hicky (1780)</li> <li>• Samvad Kaumudi (Bengali Weekly newspaper) = Ram Mohan Roy (1819)</li> <li>• Mirat-ul-Akhbar (Persian language journal) = Raja Ram Mohan Roy (1822)</li> <li>• Hindoo Patriot (English Weekly) = Madhusudan Roy (1853)</li> <li>• Rast Goftar (Gujarati Newspaper) = Dadabhai Naoroji (1854)</li> <li>• Som Prakash (Weekly Newspaper) = Ishwar Chandra Vidyasagar (1858)</li> <li>• Indian Mirror (English Newspaper) = Devendra Nath Tagore (1862)</li> <li>• Kesari (Marathi Newspaper) = B.G. Tilak (1881)</li> <li>• Sudhakar (Newspaper) = Gopal Ganesh Agarkar (1888)</li> <li>• Udbodhana (Magazine) = Swami Vivekananda (1899)</li> <li>• Prabhakar (Marathi literary magazine) = Vaman Malhar Joshi (1890)</li> <li>• Indian Opinion (Newspaper) = Mahatma Gandhi (1903)</li> <li>• Bande Mataram (English Language Newspaper) = Aurobindo Ghosh (1909)</li> <li>• Young India (Weekly Journal) = Mahatma Gandhi (1919)</li> <li>• Mook Nayak (Marathi Weekly) = B.R. Ambedkar (1920)</li> <li>• Pudhari (Marathi daily newspaper) = Dr. R. S. Jog</li> <li>• Nav Jeevan (Weekly Newspaper) = Mahatma Gandhi (1929)</li> <li>• Harijan (Weekly Journal) = Mahatma Gandhi (1932)</li> </ul>

**Q. 93**

**What was the primary economic focus of India's development since the 1991 reforms, as highlighted by Dr. Manmohan Singh?**

- a) Achieving significant growth in services and manufacturing sectors** 
- b) Maintaining an agrarian economy with limited industrial growth** 
- c) Reducing dependency on the information technology sector** 
- d) Eliminating foreign trade to boost domestic production** 

Correct answer = Option 1 (Achieving significant growth in services and manufacturing sectors)





**Economic Policy 1991 =**

- A comprehensive set of economic reforms initiated by the Indian government under former Prime Minister P.V. Narasimha Rao and former Finance Minister Dr. Manmohan Singh.
- These reforms were known as the “LPG (Liberalization, Privatization, and Globalization) Reforms”
- **Objectives =**
  - Stabilise the Economy
  - Integrate with Global Economy
  - Boost Private Sector Role
  - Attract Foreign Investment
  - Enhance Efficiency
- **Liberalisation =**
  - Liberalisation involves the relaxation of government regulations and restrictions in the economy to encourage private enterprise and increase efficiency.
  - **Abolition of Industrial Licensing:** Except for 18 industries (reduced later to 6), licensing requirements were eliminated, ending the “License Raj”.
  - **Freedom to Expand/Produce:** Businesses no longer needed government approval to expand capacity or diversify products.
  - **De-reservation of Public Sector:** Sectors earlier reserved for public enterprises (like telecom, civil aviation) were opened for private players.
  - **Financial Sector Reforms:** Interest rates were deregulated; CRR and SLR were gradually reduced. Entry of private banks (e.g., ICICI Bank, HDFC Bank) was allowed.
  - **Trade Liberalisation:** Quantitative restrictions were removed; import licensing was abolished for most goods.
  - **Tax Reforms:** Rationalisation of direct taxes and introduction of MODVAT (predecessor to GST) to improve compliance.
- **Privatisation =**
  - Privatisation entails transferring ownership and management of public sector enterprises to private entities
  - **Methods =**
    - Disinvestment of PSUs
    - Strategic Sale
    - Autonomy to Profitable PSUs
    - Reduction in Reserved Sectors
    - Public-Private Partnerships (PPP)
- **Globalisation =**
  - Globalisation refers to integrating the domestic economy with the global economy through increased trade, investment, and technology transfers
  - **Measures =**
    - Currency Convertibility
    - Trade Liberalisation
    - Foreign Direct Investment (FDI)
    - Promotion of Exports
    - Joining WTO (World Trade Organisation)

**Explanation:**

Q. 94

DNA is a molecule that holds the genetic information in the cells of living organisms. DNA stands for \_\_\_\_\_.





- a) Disulphate Nitric Acid 
- b) Deoxyribonucleic Acid 
- c) Dinitric Acid 
- d) Dioxide Nitrogen Acetate 

Explanation:

Correct answer = Option 2 (Deoxyribonucleic Acid)

**DNA (Deoxyribonucleic Acid) =**

- DNA, organic chemical of complex molecular structure that is found in all prokaryotic and eukaryotic cells and in many viruses.
- a macromolecule that carries genetic information in all living organisms, from the tiniest microorganisms to the most complex multicellular humans.
- **Friedrich Miescher (1869)** — First Discovery of DNA
- **James Watson & Francis Crick (1953)** — Proposed Double Helix Model based on X-ray images from Rosalind Franklin.
- **Founded =**
  - **In eukaryotes (like humans):** DNA is located in the nucleus.
  - **In prokaryotes (like bacteria):** DNA is found in the cytoplasm (no true nucleus).
  - Also found in mitochondria (called mtDNA) and chloroplasts in plants.
- Each strand of DNA is made up of repeating units called **nucleotides**.
- Each nucleotide has 3 parts:
  - **Deoxyribose sugar** – a 5-carbon sugar
  - **Phosphate group** – links the sugars together
  - **Nitrogenous base** – the part that carries genetic information
- **Nitrogenous Bases and Base Pairing =**
  - There are four types of nitrogenous bases in DNA:
    - Adenine (A) – Thymine (T) = Purine
    - Thymine (T) – Adenine (A) = Pyrimidine
    - Cytosine (C) – Guanine (G) = Pyrimidine
    - Guanine (G) – Cytosine (C) = Purine
  - A–T pairs with 2 hydrogen bonds
  - C–G pairs with 3 hydrogen bonds
  - The sequence of bases (A, T, C, G) determines genes, which are instructions for making proteins.
- **Triple helical structure of collagen** was discovered by G.N Ramachandran.

<p><b>Q. 95</b></p>	<p><b>Which of the following committees was constituted to study the issues and concerns in the Micro Finance Institution in 2010?</b></p> <p>a) Ghosh Committee </p> <p>b) Sivaraman Committee </p> <p>c) Malegam Committee </p> <p>d) Khan Committee </p>
<p><b>Explanation:</b></p>	<p>Correct answer = Option 3 (Malegam Committee)</p> <p><b>Ghosh Committee (1985) =</b></p> <ul style="list-style-type: none"> <li>• <b>Chairperson:</b> Dr. A. Ghosh</li> <li>• <b>Constituted by:</b> RBI</li> <li>• Formed to enhance customer service standards in Indian commercial banks.</li> <li>• Suggested model customer service codes</li> <li>• Recommended steps to address bank frauds</li> <li>• Proposed mechanisms for better grievance redressal</li> </ul> <p><b>Sivaraman Committee =</b></p> <ul style="list-style-type: none"> <li>• <b>Chairperson:</b> B. Sivaraman</li> <li>• Committee's recommendations led to the formation of NABARD .</li> </ul> <p><b>Malegam Committee (2010) =</b></p> <ul style="list-style-type: none"> <li>• Chairperson: Y.H. Malegam</li> <li>• Constituted by: Reserve Bank of India (RBI)</li> <li>• Formed in response to a microfinance crisis in Andhra Pradesh in 2010, where aggressive loan recovery methods allegedly led to borrower distress and suicides.</li> <li>• Define a special category: NBFC-MFIs (Non-Banking Financial Companies - Micro Finance Institutions)</li> <li>• Cap on interest rates and profit margins (e.g., margin cap at 10-12%)</li> <li>• Set loan limits and ensure transparency in charges</li> <li>• Ban coercive recovery practices</li> <li>• Recommend a Credit Information Bureau specifically for microfinance borrowers</li> </ul> <p><b>Khan Committee (2004) =</b></p> <ul style="list-style-type: none"> <li>• Chairperson: H.R. Khan (RBI Deputy Governor)</li> <li>• Created to explore ways to extend banking services to rural and unbanked areas.</li> <li>• Recommended the use of <b>Business Correspondents (BCs)</b> and <b>Business Facilitators (BFs)</b> to expand banking outreach.</li> <li>• Encouraged the use of technology in financial inclusion (e.g., mobile banking, biometric verification).</li> <li>• Helped lay the foundation for later initiatives like <b>PM Jan Dhan Yojana</b>.</li> </ul>

Q. 96

Which among the following was not a member of the Adhishthana Adhikarana of Kotivarsha in the Gupta period?

a) Sarthavaha



b) Mahattara



c) Prathama-kayastha



d) Prathama-kulika







Explanation:

Correct answer = Option 1 (Sarthavaha)

**Adhishthāna Adhikaraṇa =**

- The Adhishthāna Adhikaraṇa was an urban administrative body or municipal board during ancient India
- It functioned in cities and towns like Kotivarsha (in modern-day West Bengal) and helped manage local governance, taxation, and economic affairs.
- The term "Adhishthāna" means settlement or city, and "Adhikaraṇa" means council or administrative body.
- **Functions =**
  - **Urban Planning:** Managed city infrastructure, roads, markets, and water supply.
  - **Revenue Collection:** Oversaw local taxes, market fees, and trade levies.
  - **Judicial Work:** Settled disputes, especially those involving trade, land, and guild matters.
  - **Record Keeping:** Maintained official registers of land, tax, property, and civic rules.
  - **Guild Regulation:** Managed and coordinated with artisan and trader guilds.
- **Members =**
  - **Mahattara =**
    - "Elder" or "respected man"
    - Likely a senior community representative, similar to a council elder.
  - **Prathama-kayastha =**
    - "First" or "Chief" Kayastha (scribe or record keeper)
    - Maintained official documents, tax rolls, and property records.
    - Played a key role in administration through writing and documentation.
  - **Prathama-kulika =**
    - Chief of the Kulikas (artisan class or manufacturing guilds)
    - Represented craftsmen, blacksmiths, potters, etc.
- **Sarthavaha =**
  - Sarthavāha means leader of a merchant caravan or trading guild.
  - They were influential in long-distance trade, often moving goods across regions

<p><b>Q. 97</b></p>	<p><b>'Police and Public Order' are State subjects under the _____ Schedule of the Constitution of India.</b></p> <p>a) 5th </p> <p>b) 9th </p> <p>c) 7th </p> <p>d) 12th </p>
<p><b>Explanation:</b></p>	<p>Correct answer = Option 3 (7th)</p> <p><b>7<sup>th</sup> Schedule =</b></p> <ul style="list-style-type: none"> <li>• The Seventh Schedule of the Constitution of India, 1950 (COI) provides for three lists.</li> <li>• <b>Union List (List I):</b> <ul style="list-style-type: none"> <li>◦ It contains 100 subjects (originally 97) and comprises the subjects which are of national importance and admit of uniform laws for the whole of the country.</li> <li>◦ Only Parliament can legislate with respect to these matters e.g. Defence, Foreign Affairs, Banking, Currency, Union Taxes, Insurance, Inter-state trade and commerce , extraditions , regulation of labour and mines , census , taxes on services(88<sup>th</sup> C.A), taxes on income other than agricultural income etc .</li> </ul> </li> <li>• <b>State List (List II):</b> <ul style="list-style-type: none"> <li>◦ It contains 61 subjects (originally 66) and comprises subjects of local or State interest.</li> <li>◦ It lies within the legislative competence of the State Legislatures, viz. Public Order and Police, Health, Agriculture, betting and gambling , pilgrimage , liquor , fisheries , toll , sanitation , taxes on agricultural income etc.</li> </ul> </li> <li>• <b>Concurrent List (List III):</b> <ul style="list-style-type: none"> <li>◦ Contains 52 subjects (Originally 47) with respect to which; both Union Parliament and the State Legislature have concurrent power of legislation. The Concurrent List (not found in any federal Constitution) was to serve as a device to avoid excessive rigidity to a two-fold distribution.</li> <li>◦ It is a 'twilight zone', as for not so important matters, the States can take initiative, while for the important matters, the Parliament can do so.</li> <li>◦ Viz . price control, marriage and divorce , education , forest , adoption , succession , factories , bankruptcy and insolvency , labour dispute , population , code of civil procedure , electricity , trade union , administration of justice , weights and measures , protection of wild life and birds , etc .</li> </ul> </li> </ul>




Q. 98

Match the points under Column A with those under Column B. Which of the following is the correct match?

Column A

Column B

- |                    |              |
|--------------------|--------------|
| 1. Annelida        | A. Tapeworm  |
| 2. Arthropoda      | B. Sea Star  |
| 3. Echinodermata   | C. Ant       |
| 4. Platyhelminthes | D. Earthworm |

a) i-d, ii-c, iii-b, iv-a b) i-a, ii-b, iii-c, iv-d c) i-a, ii-d, iii-c, iv-b d) i-c, ii-d, iii-b, iv-a 



Correct answer = Option 1(i-d, ii-c, iii-b, iv-a)

**Annelida → Earthworm**

- Annelids are segmented worms characterized by a body divided into repeating segments.
- They possess a true coelom (body cavity), a closed circulatory system, and a nervous system with a brain and ventral nerve cord.
- Movement is facilitated by longitudinal and circular muscles, and many species have bristle-like structures called setae.
- Examples include earthworms, leeches, and polychaetes, nereis

**Arthropoda → Ant**

- Arthropods are the largest and most diverse group of animals, including insects, arachnids, crustaceans, and myriapods.
- They have an exoskeleton made of chitin, segmented bodies, and jointed appendages.
- Growth occurs through molting (ecdysis), and they have an open circulatory system.
- Scorpions , spiders , tick – Arachnids
- Chelicerata includes Arachnids and Limulus
- Mosquito – hexapod
- Crabs , housefly , cenipede , prawn , cockroach , lice(parasite)
- Cray fish , silver fish – Insects
- Butterfly , caterpillar , honey bee
- Daphnia – Crustaceae
- Julus – Diplopoda / Myriapoda





**Explanation:**

**Echinodermata → Sea Star**





- Echinoderms are marine invertebrates with radial symmetry (usually pentaradial in adults), an internal calcareous skeleton, and a water vascular system.
- They possess tube feet for movement and feeding, and many have regenerative abilities.
- Echinoderms include sea stars, sea urchins, sea cucumbers, and brittle stars.

**Platyhelminthes → Tapeworm**

- Platyhelminthes, or flatworms, are bilaterally symmetrical, acoelomated animals.
- They lack a circulatory system and have a simple digestive system with one opening.
- Some are free-living, while others are parasitic.

Q. 99	<p>What is the primary objective of UNESCO's initiative "Imagine a World with More Women in Science"?</p> <p>a) To increase funding for private science institutions </p> <p>b) To promote gender equality and encourage more women to pursue careers in STEM fields </p> <p>c) To replace traditional science curricula with new experimental methods </p> <p>d) To reduce the number of students in science courses globally </p>
Explanation:	<p>Correct Answer= Option 2 (To promote gender equality and encourage more women to pursue careers in STEM fields)</p> <ul style="list-style-type: none"> <li>• UNESCO's initiative "<b>Imagine a World with More Women in Science</b>" aims to challenge gender stereotypes, support women scientists, and inspire girls to engage in <b>STEM</b> fields, where they are traditionally underrepresented.</li> <li>• STEM = science, technology, engineering, and mathematics</li> <li>• UNESCO Director-General = <b>Audrey Azoulay</b></li> <li>• <b>UNESCO-</b> <ul style="list-style-type: none"> <li>◦ <b>Founded</b> = 16 November 1945 (Constitution came into force in 1946).</li> </ul> </li> <li>• <b>Headquarters</b> = Paris, France.</li> </ul>

Q. 100	<p>Who is ranked first in the HSBC Hurun Global Indians List 2024, which highlights the top companies led by Indian-origin leaders?</p> <p>a) Sundar Pichai </p> <p>b) Satya Nadella </p> <p>c) Neal Mohan </p> <p>d) Leena Nair </p>
Explanation:	<p>Correct Answer= Option 2 (Satya Nadella)</p> <ul style="list-style-type: none"> <li>• <b>Satya Nadella</b>, the Chairman and CEO of Microsoft, topped the <b>HSBC Hurun Global Indians List 2024</b>.</li> <li>• This list features Indian-origin executives leading the world's top companies based on market value or valuation, emphasizing global Indian leadership across sectors.</li> <li>• <b>Sundar Pichai</b> = CEO of Alphabet Inc. and its subsidiary Google</li> <li>• <b>Neal Mohan</b> = CEO of YouTube</li> <li>• <b>Leena Nair</b> = Global CEO of Chanel</li> </ul>