

Parmar SSC Mega Live Mock 30

Q. 1

Parts of the following sentence have been given as options. Select the option that contains an adverb-usage error.

Mr. Daniel, the police officer, commented, 'The fire clumsily spread through the building'.

a) 'The fire clumsily spread' ✓

b) Mr. Daniel, the police officer, ✗

c) through the building'. ✗

d) commented, ✗

Explanation:

Correct Answer: Option A. 'The fire clumsily spread'

- The adverb "clumsily" means in an awkward or ungraceful way, usually used to describe the actions of a person or animal. A fire is an inanimate force and does not spread "clumsily." Adverbs like "rapidly," "quickly," "fiercely," or "uncontrollably" would be appropriate to describe how a fire spreads.

Q. 2

Fill in the blank with most appropriate word.

The air ____ has gone up significantly.

a) charge ✗

b) fare ✓

c) cost ✗

d) rent ✗

Explanation:

Correct Answer: Option B. fare

- Fare is the specific term used for the money paid for a journey on public transport, including airplanes (hence "airfare")
- Charge means a general fee, Cost is also a general term for an expense , Rent relates to property.

Q. 3

Select the most appropriate option to substitute sentence. If there is no need to substitute it, the underlined segment in the given select 'No substitution'.

How long have you being seating on this bench?

- a) being sat X
- b) been sitting ✓
- c) No substitution X
- d) been seating X

Correct Answer: Option B. been sitting

Explanation:

- **been sitting** is the correct form for the present perfect continuous tense, which is used to talk about an action that started in the past and is continuing up to the present.
- **have/has + been + verb-ing → been sitting**

Q. 4

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

He has not committed the crime.

- a) The crime has not been committed by him. ✓
- b) The crime have not been committed by him. X
- c) The crime was not committed by him. X
- d) The crime have not being committed by him. X

Explanation:

Correct Answer: Option A. The crime has not been committed by him.

Active Voice: He (subject) + has not committed (present perfect tense) + the crime (object)

Passive Voice: The crime (new subject) + has not been committed (passive present perfect) + by him (agent)

Q. 5

Parts of the following sentence have been underlined and given as options. Select the option that contains a spelling error.

If more is desired than the instantanious impact on the mind, the advertising value of the poster falls sharply, within limits of outdoor publicity, however it is at present unchallenged.

- a) unchallenged
- b) instantanious
- c) advertising
- d) desired

Explanation:

The correct answer is: Option B) instantanious

- Correct spelling: **instantaneous** (meaning: happening or done immediately)
Other words:
- **desired** – (meaning: wanted or wished for)
- **advertising** – (relating to promoting products or services)
- **unchallenged** – (not disputed or questioned)

Q. 6

Select the correct indirect form of the given sentence.

Mother said, "All the guests will arrive tonight."

- a) Mother told that all the guests would arrive tonight.
- b) Mother said that all the guests would arrive that night.
- c) Mother said that all the guests will arrive tonight.
- d) Mother said that all the guests will arrive that night.

Explanation:

The correct answer is: B) Mother said that all the guests would arrive that night.

- Direct: *will arrive* → Indirect: *would arrive*
(Because the reporting verb "**said**" is in the past tense.)
- *tonight* → *that night*
(As per rules of converting time expressions in reported speech.)

Q. 7

Select the most appropriate meaning of the given idiom.

Bide one's time

- a) To join a popular trend or activity
- b) To face a difficult situation with courage and determination
- c) To wait patiently for an opportunity
- d) To accidentally reveal a secret

Explanation:

The correct answer is: C) To wait patiently for an opportunity

Idiom: *Bide one's time*

Meaning: To wait calmly and patiently for the right moment or opportunity to act.

Q. 8

Select the INCORRECTLY spelt word.

- a) Plump
- b) Rinckle
- c) Muscle
- d) Gnaw

Explanation:

The correct answer is: B) Rinckle

The correct spelling is Wrinkle. **Wrinkle** (a small fold or line on a surface, especially the skin)

Other words:

- **Plump** – (meaning: chubby or well-rounded)
- **Muscle** – (tissue in the body that produces movement)
- **Gnaw** – (to bite or chew something persistently)

Q. 9

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'.

Unless someone makes a complaint, they will not clear the garbage from the street.

- a) Without someone makes a complaint
- b) Despite someone makes a complaint
- c) No substitution required
- d) Except someone makes a complaint

Explanation:

The correct answer is: C) No substitution required

- "Unless someone makes a complaint, they will not clear the garbage from the street" uses "unless" correctly to introduce a condition (if not).

Q. 10

Select the most appropriate meaning of the given idiom.

Rank and file

- a) The manager of a personnel department
- b) A very well-organised company
- c) Financial activities in a firm
- d) Ordinary workers in a company

Explanation:

The correct answer is: D) Ordinary workers in a company

- **Rank and file** Meaning: The ordinary members of an organization or group, especially the regular employees or workers, not the leaders or managers.

Q. 11

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. First, a new article comes into our offices.
B. Every article in the Encyclopedia goes through a rigorous editorial process to make sure it's clear, accurate, objective and fair.
C. The article is first reviewed by a fact checker, who uses a variety of sources to make sure the article is accurate and the facts are correct.
D. The author may be an editor at the Encyclopedia who knows that subject or a prominent scholar with specialised expertise in that field.

a) CDAB

b) BCAD

c) BADC

d) CADB

Explanation:

- Correct answer Option C : BADC
- B. (This sentence introduces the main topic: the editorial process for Encyclopedia articles.)
 - A. (This follows B by describing the initial step of the process – an article arriving.)
 - D. (This sentence provides important context about the "new article" mentioned in A, specifically who writes it, before detailing the review process.)
 - C. (This details the first actual step of the "rigorous editorial process" once the article is in the office and its authorship is understood.)

Q. 12

The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options. If you don't find any error, mark 'No error' as your answer.

Vidya put on her mask, / sanitise her hands / and walked into the shop.

a) and walked into the shop

b) Vidya put on her mask

c) No error

d) sanitise her hands

Explanation:

Correct answer option: D. sanitise her hands

- The sentence describes a sequence of actions that happened in the **past**: "Vidya put on her mask" and "and walked into the shop." For consistency, the verb "sanitise" should also be in the past tense.
- So, the corrected sentence : "Vidya put on her mask, sanitised her hands, and walked into the shop."

Q. 13

Select the most appropriate word to fill in the blank.

In the past month, the price of oil has _____ several times.

a) faltered

b) fumbled

c) fluctuated

d) failed

Explanation:

Correct answer option C. fluctuated

Fluctuated means to rise and fall irregularly in number or amount. This correctly describes how a price might change up and down "several times" over a period.

Other words:

- **Faltered** means to lose strength or momentum, or to hesitate. **Fumbled** means to handle clumsily or make a mistake.
- **Failed** means to be unsuccessful.

Q. 14

Select the most appropriate synonym of the given word.

Emerge

- a) Enforce X
- b) Close X
- c) Erase X
- d) Appear ✓

Explanation:

Correct answer: (D) Appear

- **Emerge** means *to come into view or become visible*.
- **Appear** also means *to come into sight or become visible* → **Synonym**
- **Enforce** means *to make people obey a rule or law*.
- **Close** means *to shut or make something not open*.
- **Erase** means *to remove or wipe out*.

Q. 15

Select the option that expresses the given sentence in reported speech.

My mother said to me, "Aravind, the baby has been crying all day."

- a) My mother said Aravind that the baby has been crying all the day. X
- b) Aravind told my mother that the baby had been crying all day. X
- c) My mother told me that the baby had been crying all day. ✓
- d) My mother told to Aravind why the baby has been crying all day. X

Explanation:

Correct answer: (C) My mother told me that the baby had been crying all day.

Conversion to reported speech:

- **Reporting verb** → "said to me" changes to "told me".
- **Quotation part** is in **present perfect continuous** ("has been crying") → Change to **past perfect continuous** ("had been crying").
- "**All day**" remains unchanged (time expressions like "today", "now" would change, but "all day" doesn't).

Q. 16

Select the most appropriate ANTONYM of the given word.

Lucid

a) Confusing ✓

b) Clear ✗

c) Obvious ✗

d) Acidic ✗

Explanation:

Correct answer: (A) Confusing

Lucid means: *Clear, easy to understand, or mentally sound* (स्पष्ट, साफ़-सुथरा)

- (A) Confusing — *Not clear or hard to understand* → Antonym of lucid
- (C) Obvious — *Easily seen or understood*, similar to lucid

Q. 17

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'.

This is the student which won the first prize in the recitation.

a) No substitution required ✗

b) whose won ✗

c) whom won ✗

d) who won ✓

Explanation:

Correct answer: (D) who won

- Use "who" for people
- Use "which" for things
- Use "whom" for objects of a verb/preposition
- Use "whose" to show possession

Since "student" is a person, the correct relative pronoun is "who".

Q. 18

Select the most appropriate ANTONYM of the given word.

Infallible

- a) Dependable X
- b) Reliable X
- c) Faulty ✓
- d) Unfailing X

Explanation:

Correct answer: C. Faulty

Meaning of "Infallible": Incapable of making mistakes or being wrong; always correct or reliable.

Faulty – having faults or imperfections, prone to errors. Opposite of infallible.

- **Dependable** – trustworthy, reliable.
- **Reliable** – can be relied on, trustworthy.
- **Unfailing** – always reliable or constant.

Q. 19

Given below are four jumbled sentences. Out of the given options, select the one that gives their correct order.

- A. According to sources, one of the degrees will have to be in the regular mode and the other either in open and distance learning or online mode.
- B. In a move to improve students' career prospects, the University Grants Commission has approved the proposal to allow them to pursue two degree programmes at the same time.
- C. A committee formed under the UGC vice chairperson worked on the proposal based on feedback from the public.
- D. Once the guidelines are notified, a student studying in a university will be able to pursue another degree programme simultaneously.

- a) ABDC
- b) CBAD
- c) BCDA
- d) DBAC

Correct answer: C. BCDA

- *B. UGC has approved the proposal to allow students to pursue two degree programmes at the same time.*

This is the **starting point** – introduces the main idea.

- *C. A committee formed under the UGC vice chairperson worked on the proposal...*

This provides **background** – how the proposal came about.

- *D. Once the guidelines are notified, a student... will be able to pursue another degree...*

This talks about **future implications** of the approved proposal.

- *A. One of the degrees will have to be in regular mode...*

This gives **specific conditions** or rules for the implementation.

Explanation:

Q. 20

Select the word which means the same as the group of words given.

A place where a dead person's body is burnt.

- a) dungeon
- b) basement
- c) graveyard
- d) crematorium

Explanation:

Correct answer: D. crematorium

- **Dungeon** – a dark underground prison.
- **Basement** – the lowest floor of a building.
- **Graveyard** – a place where dead bodies are **buried**.
- **Crematorium** – a place where dead bodies are **cremated (burnt)**.

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.

Adopting sustainable practices in daily life (1) _____ to environmental conservation. Small actions, (2) _____ reducing single-use plastics, conserving energy, planting trees, using water sparingly and reducing the use of electronic gadgets, (3)_____ make a significant impact. Research shows that communities (4)_____ sustainable living not only reduce their carbon footprint but also create a healthier environment (5)_____ future generations.

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

- a) sacrifice
- b) contribute
- c) addition
- d) supplies

Correct answer: (B) contribute

Explanation:

- We need a **verb** that fits the subject and completes the meaning.
- "contribute to" means to help cause or bring about something. Adopting sustainable practices directly helps or aids in environmental conservation.

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.

Adopting sustainable practices in daily life (1) _____ to environmental conservation. Small actions, (2)_____ reducing single-use plastics, conserving energy, planting trees, using water sparingly and reducing the use of electronic gadgets, (3)_____ make a significant impact. Research shows that communities (4)_____ sustainable living not only reduce their carbon footprint but also create a healthier environment (5)_____ future generations.

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

- a) dislike 
- b) such as 
- c) instance 
- d) likes 

Correct answer: (B) such as

Explanation:

- "such as" is used to introduce examples or illustrations of something that has just been mentioned. In this sentence, it introduces a list of specific "small actions" (reducing single-use plastics, conserving energy, etc.) that fall under the category of adopting sustainable practices.

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.

Adopting sustainable practices in daily life (1) _____ to environmental conservation. Small actions, (2) _____ reducing single-use plastics, conserving energy, planting trees, using water sparingly and reducing the use of electronic gadgets, (3) _____ make a significant impact. Research shows that communities (4) _____ sustainable living not only reduce their carbon footprint but also create a healthier environment (5) _____ future generations.

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

a) additionally 

b) sparingly 

c) collectively 

d) frequently 

Explanation:

Correct answer: (C) collectively

- The sentence talks about a list of "small actions." For these small, individual actions to "make a significant impact," it implies that their combined effect, or doing them as a group, is what leads to the large impact.
- **Collectively** means "**as a group; all together.**" This suggesting that these individual small actions, when done by many or accumulated, lead to a significant impact.

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.

Adopting sustainable practices in daily life (1) _____ to environmental conservation. Small actions, (2) _____ reducing single-use plastics, conserving energy, planting trees, using water sparingly and reducing the use of electronic gadgets, (3) _____ make a significant impact. Research shows that communities (4) _____ sustainable living not only reduce their carbon footprint but also create a healthier environment (5) _____ future generations.

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

- a) enfold X
- b) embracing ✓
- c) squeeze X
- d) clutch X

Correct answer: (B) embracing

Explanation:

- "embracing" means to accept or adopt (a belief, idea, or way of life) willingly and enthusiastically. When communities "embrace sustainable living," it means they are actively adopting and practicing it.

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.

Adopting sustainable practices in daily life (1) _____ to environmental conservation. Small actions, (2) _____ reducing single-use plastics, conserving energy, planting trees, using water sparingly and reducing the use of electronic gadgets, (3) _____ make a significant impact. Research shows that communities (4) _____ sustainable living not only reduce their carbon footprint but also create a healthier environment (5) _____ future generations.

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

- a) of X
- b) against X
- c) for ✓
- d) towards X

Explanation:

Correct answer: (C) for

- We need a preposition that correctly links "**healthier environment**" with "**future generations**" — meaning the environment is **intended to benefit** future generations.
- **(C) for** – Correct. "A healthier environment **for** future generations" means **intended to benefit** them.

Q. 26

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

MAKE : NCJC :: FOLD : GQKB :: VIEW : ?

- a) WKEV X
- b) WKDU ✓
- c) WJEV X
- d) XKDV X

Option 2 is correct.

M A K E
 $+1 \downarrow$ $+2 \downarrow$ $-1 \downarrow$ $-2 \downarrow$
N C J C

F O L D
 $+1 \downarrow$ $+2 \downarrow$ $-1 \downarrow$ $-2 \downarrow$
G Q K B

Explanation:

V I E W
 $+1 \downarrow$ $+2 \downarrow$ $-1 \downarrow$ $-2 \downarrow$
W K D U

Q. 27

Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

L _ _ L _ M _ L _ _ M _

- a) MLMLMLL X
- b) MMLMLML ✓
- c) LLMMMLMM X
- d) LMLMLMM X

Explanation:

Option 2 is correct.

L M M L L M M L L M M L

Q. 28

Choose the option that represents the correct sequence of the following event.

1. Zygote
2. Gamete formation
3. Fertilization
4. Embryo

- a) 1, 4, 2, 3 X
- b) 2, 3, 1, 4 ✓
- c) 3, 1, 2, 4, X
- d) 1, 3, 2, 4, X

Explanation:

Option 2 is correct.
2.Gamete Formation >3. Fertilization >1. Zygote >4. Embryo

Q. 29

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

27, 16, 125, ?, 343, 64

- a) 216 X
- b) 64 X
- c) 36 ✓
- d) 512 X

Option 3 is correct

Explanation:

$\frac{3}{3}$	4^2	$\frac{3}{5}$	6^2	$\frac{3}{7}$	8^2
27	16	125	36	343	64

Q. 30

- 100 is related to 18 following a certain logic. Following the same logic, 90 is related to 16. Which of the following is related to 12 using the same logic?
- a) 60
 - b) 80
 - c) 65
 - d) 70

Option 4 is correct.

$$(18+2) \times 5 = 100$$

Explanation:

$$(16+2) \times 5 = 90$$

$$(12+2) \times 5 = 70$$

Q. 31

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

Based on the above information, how is S related to U if

'P + Q ÷ R × S - T ÷ U'?

- a) Father's mother
- b) Father's sister
- c) Father's father
- d) Father's brother

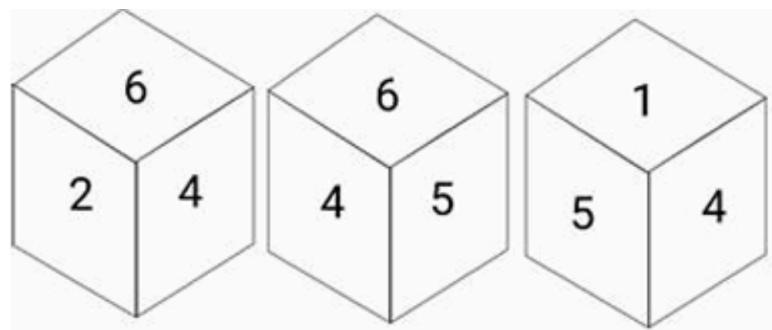
Option 4 is correct.

Explanation:

P^-
 \downarrow
 Q^+
 \downarrow
 $R^- = S^+ - T^+$
 uncle
 or
 Father's brother

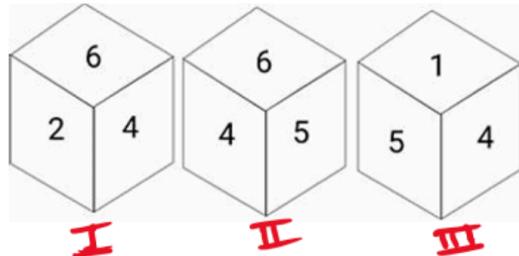
Q. 32

Six numbers 1, 2, 3, 4, 5 and 6 are written on different faces of a dice. Three different positions of the same dice are shown. Select the number on the face opposite to the one having 1.



- a) 4 X
- b) 6 ✓
- c) 5 X
- d) 3 X

Option 2 is correct.



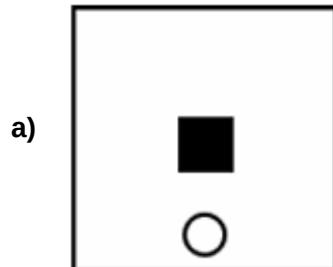
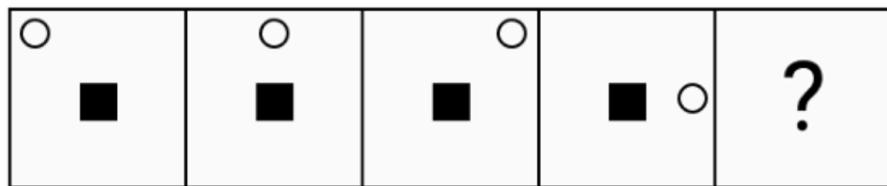
Explanation:

From Figure I & III

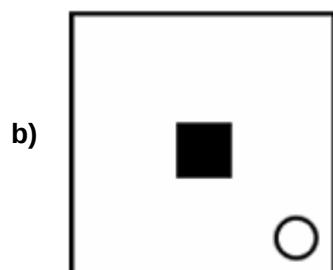
4 ↔ 5 - 2 - 6 *1 & 6 are opposite*

Q. 33

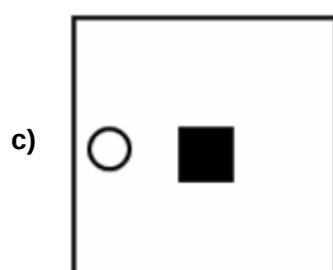
Identify the figure which when put in place of the question mark (?) will logically complete the series.



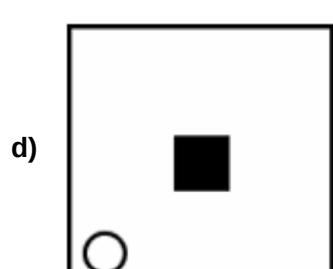
X



✓



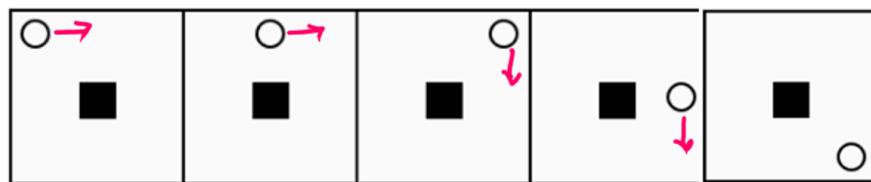
X



X

Option 2 is correct.

Explanation:



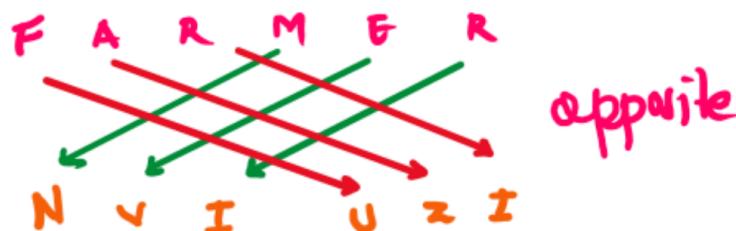
Q. 34

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

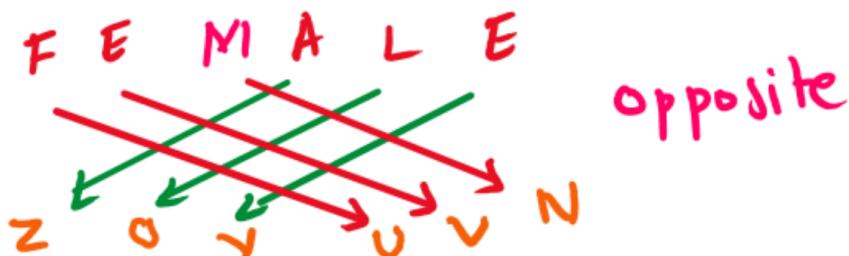
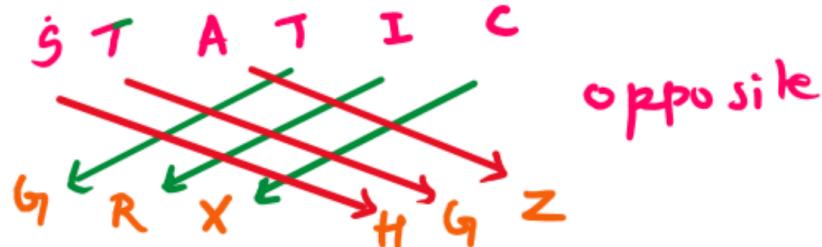
FARMER : NVIIZU :: STATIC : GRXHGZ :: FEMALE : ?

- a) ZOUVNV X
- b) ZOVUVN ✓
- c) OZVUNV X
- d) ZOVVNU X

Option 2 is correct.



Explanation:



Q. 35

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

Statements:

Some rings are gold.

All gold is hot.

Some hot are red.

Conclusions:

- I. Some gold are rings.
- II. Some hot are gold.
- III. Some red are hot.

a) All the conclusions follow. ✓

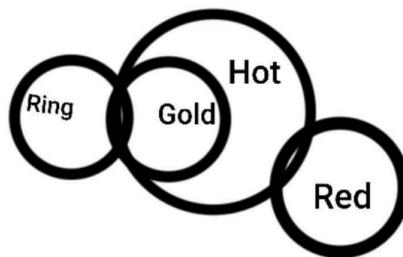
b) Only conclusion III follows. ✗

c) Only conclusion I follows. ✗

d) Only conclusion II follows ✗

Option 1 is correct.

Explanation:



- I. Some gold are rings. TRUE (Clearly mentioned in first statement).
- II. Some hot are gold. TRUE (As all gold are hot some hot are definitely gold).
- III. Some red are hot. TRUE (Clearly mentioned in the third statement).

Q. 36

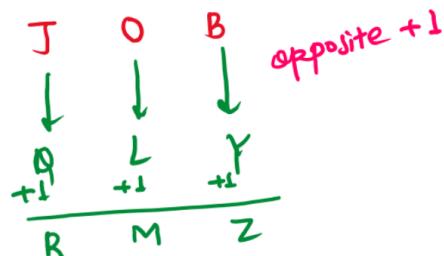
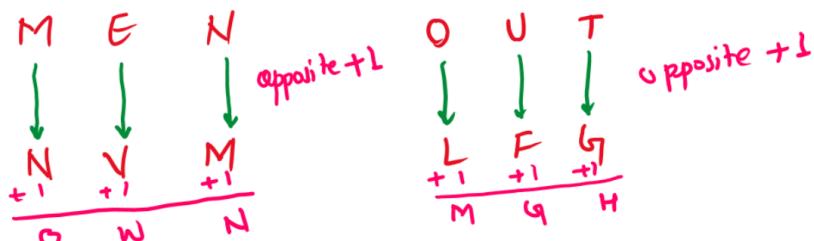
Select the option that is related to the fifth letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter-cluster is related to the third letter-cluster.

MEN : OWN :: OUT : MGH :: JOB : ?

- a) RJY X
- b) RKX X
- c) QKW X
- d) RMZ ✓

Option 4 is correct.

Explanation:



Q. 37

Which day of the week was on 'International Yoga day' 2015 ?

- a) Sunday ✓
- b) Tuesday ✗
- c) Friday ✗
- d) Monday ✗

Option 1 is correct.

Every year International Yoga day is celebrated on 21 June.

Day Code												
Sun	Mon	Tue	Wed	Thru	Fri	Sat						
0	1	2	3	4	5	6						
Month Code												
Month	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Normal Year	0	3	3	6	1	4	6	2	5	0	3	5
Leap Year	6	2	3	6	1	4	6	2	5	0	3	5
Century Code												
1600	1700	1800	1900	2000	2100	2200	2300					
6	4	2	0	6	4	2	0					

Explanation:

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

Remainder = _____

7

Date - 21 June 2015

$$\text{Remainder} = \frac{21 + 4 + 6 + 15 + 3}{7}$$

$$\Rightarrow \frac{49}{7} \Rightarrow 0 \text{ (Remainder)}$$

'0' → Sunday

Q. 38

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

Statements:

All calculators are dustbins.

All complexes are dustbins.

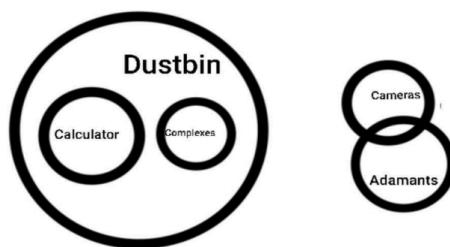
Some adamants are cameras.

Conclusions:

- I. Some calculators are complexes.
- II. Some dustbins are calculators.
- III. Some dustbins are adamants

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

Option 3 is correct.



Explanation:

- I. Some calculators are complexes. FALSE (It is a possibility not a definite statement.)
- II. Some dustbins are calculators. TRUE (As all calculators are dustbins it means some dustbins are calculators.)
- III. Some dustbins are adamants. FALSE (No relation between dustbin and adamant is mentioned.)

Q. 39

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

$$16 \div 6 + 12 \times 3 - 6 = ?$$

- a) 94
- b) 98
- c) 92
- d) 96

Option 2 is correct.

Explanation:

$$16 \times 6 - 12 \div 3 + 6$$

$$96 - 4 + 6 \\ = 98$$

Q. 40

Ayush told Neha, "Though I am the son of your father, you are not my brother". How is Neha related to Ayush?

- a) Daughter
- b) Step-daughter
- c) Sister
- d) Cousin

Option 3 is correct.

Explanation:

Diagram illustrating the relationship between Ayush and Neha based on the given statement:

Ayush is the son of Neha's father (the 'Father' mentioned in the statement).

Neha is not Ayush's brother.

Q. 41

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

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

Cow : Calf :: Butterfly : ?

a) Caterpillar

b) Duckling

c) Kitten

d) Foal

Explanation:

Option 1 is correct.

Young cow is Calf.

Similarly, Young Butterflies are Caterpillars.

Q. 42

In a certain code language, 'TAIL' is coded as '7614' and 'TALE' is coded as '1749'.

What is the code for 'I' in the given language?

a) 9

b) 6

c) 1

d) 7

Explanation:

Option 2 is correct.

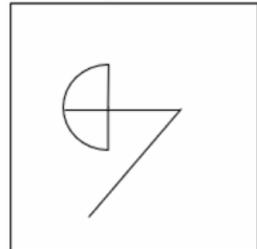
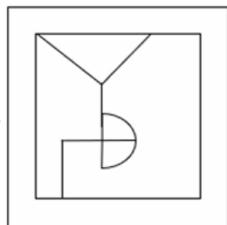
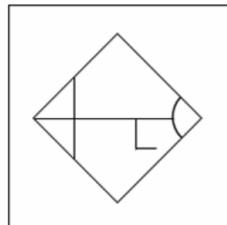
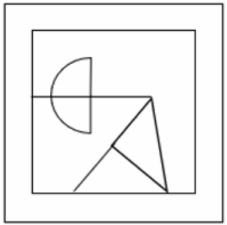
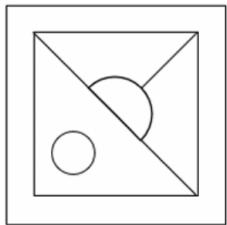
TAIL : 7 6 1 4

TALE : 1 7 4 9

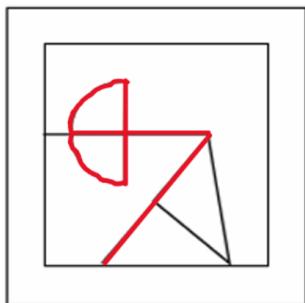
It is clear that the code for 'I' is 6.

Q. 43

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

**a)****b)****c)****d)**

Option 3 is correct.

Explanation:

Q. 44

Three of the following four options are alike in a certain way and thus form a group.

Which is the one that does NOT belong to that group ?

- a) 5 : 23 X
- b) 4 : 19 X
- c) 2 : 11 X
- d) 7 : 32 ✓

Option 4 is correct.

$$\boxed{5} \times 4 + 5 = 25$$

$$\boxed{4} \times 4 + 5 = 19$$

$$\boxed{2} \times 4 + 5 = 11$$

$$\boxed{7} \times 4 + 5 = 31$$

Explanation:**Q. 45**

Select the option that represents the correct order of the given words as they would appear in an English dictionary.

1. Decision
2. Deference
3. Decorative
4. Decide
5. Defeat

- a) 3, 2, 1, 5, 4 X
- b) 4, 1, 2, 5, 3 X
- c) 4, 1, 3, 5, 2 ✓
- d) 3, 1, 2, 5, 2 X

Explanation:

Option 3 is correct.

4. Decide >1. Decision >3. Decorative >5. Defeat >2. Deference

Q. 46

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



- a)  ✗
- b)  ✗
- c)  ✓
- d)  ✗

Option 3 is correct.

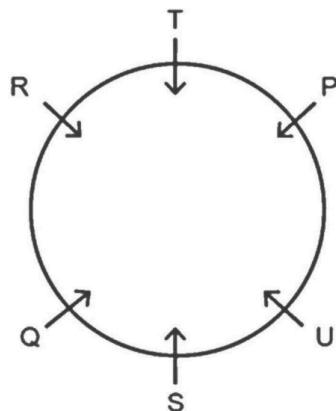
Explanation:

Q. 47

Six persons are sitting around the circular table facing towards the center. P sits second to the right of S. U sits opposite to R; R is not adjacent to S. T sits adjacent to P. If Q sits adjacent to S then who sits second to the right of P?

- a) R ✓
- b) T ✗
- c) Q ✗
- d) S ✗

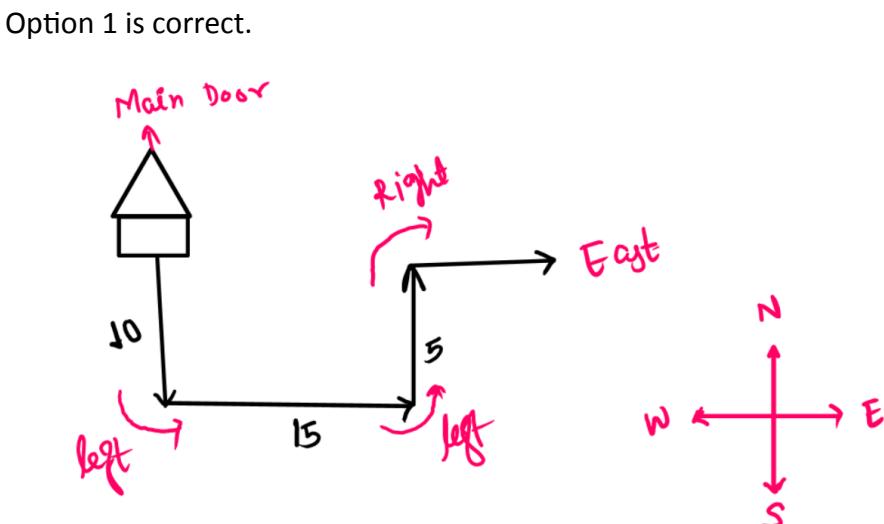
Option 1 is correct.

Explanation:

Q. 48

Sakshi started from the backdoors of her house, walked for 10 meters then turned to left, after walking 15 meters she again turned to left, after walking 5 meters she turned to right, Now Sakshi is facing East direction. The front gate of Sakshi's house is in which direction ?

- a) North ✓
- b) South - East ✗
- c) West ✗
- d) North-West ✗

Explanation:**Q. 49**

In a row of 17 students facing north, Amit is 5th from left and Radhika is 16th from right. How many minimum students are between them ?

- a) 3 ✗
- b) 4 ✗
- c) 2 ✓
- d) 1 ✗

Explanation:

Option 3 is correct.

$$\text{Radhika's Position from left} = 17 - 16 + 1 = 2$$

$$\text{Amit's position from left} = 5$$

$$\text{Number of students between them} = 5 - 2 - 1 = 2$$

Q. 50

In a certain code language, 'we live here' is coded as 'pa tu nk' and 'here was tree' is coded as 'rp nk fu'. How is 'here' coded in the given language?

- a) fu X
- b) rp X
- c) pa X
- d) nk ✓

Option 4 is correct.

We live **here** → pa ty **nk**

Explanation:

here was tree → rp **nk** **fu**

Q. 51

The price of a motorcycle was 750 last year. The price increased by 20% this year. What is the price of the motorcycle this year?

- a) 600 X
- b) 750 X
- c) 900 ✓
- d) 790 X

1. Price of motorcycle last year = ₹ 750
 Increase in Price = 20%.

New Price = $(100+20)\% \times 750$

$$= \frac{120}{100} \times 750$$

$$= ₹ 900$$

Explanation:

Q. 52

The given table represents the percentage marks of three students in three subjects (out of 100). Study the table and answer the question.

Student \ subject	Geography	History	Economics
Student			
Rohan	78	77	74
Sohan	84	80	82
Mohan	87	83	86

The average marks obtained by Sohan in all three subjects is equal to:

- a) 78 X
- b) 82 ✓
- c) 80 X
- d) 84 X

Explanation:

2. Avg. Marks scored by Sohan = $\frac{84+80+82}{3}$

$$= \frac{246}{3}$$

$$= 82$$

Q. 53

- If the selling price of 100 pens is equal to the cost price of 140 pens, find the profit percentage.
- 30%
 - 36%
 - 45%
 - 40%

$$\begin{aligned} 3 \text{ AlA, } 100SP &= 140CP \\ 5SP &= 7CP \\ \Rightarrow SP &= \frac{7}{5}CP \end{aligned}$$

$$\text{Profit \%} = \frac{SP - CP}{CP} \times 100\%$$

Explanation:

$$\begin{aligned} &= \frac{\frac{7}{5}CP - CP}{CP} \times 100\% \\ &= \frac{\frac{2}{5}CP}{CP} \times 100\% \\ &= 40\% \end{aligned}$$

Q. 54

Simplify the following:

$$12 \div 4 \text{ of } 3 \times 6 + 8 \div 16 \text{ of } 4 \times 8 - 4 \div 6 \times 9$$

a) 1 ✓

b) -1 ✗

c) 13 ✗

d) 17 ✗

Explanation:

$$\begin{aligned}
 & 12 \div 4 \text{ of } 3 \times 6 + 8 \div 16 \text{ of } 4 \times 8 - 4 \div 6 \times 9 \\
 &= 12 \div 12 \times 6 + 8 \div 64 \times 8 - 4 \div 6 \times 9 \\
 &= 1 \times 6 + \frac{8}{64} \times 8 - \frac{4^2}{63} \times 9 \\
 &= 6 + 1 - 6 \\
 &= 1
 \end{aligned}$$

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

Q. 55

The average monthly expenditure of a family was 2500 during the first 4 months, 2750 during the next 5 months and 3550 during the last 3 months of a year. If the total saving during the year was 5500, what was the average monthly income of the family?

- a) 5790
- b) 7355
- c) 4375
- d) 3325

$$\begin{aligned}
 5 \text{ Total Expenditure of family} &= 2500 \times 4 + 2750 \times 5 + 3550 \times 3 \\
 &= 10,000 + 13,750 + 10,650 \\
 &= 34,400
 \end{aligned}$$

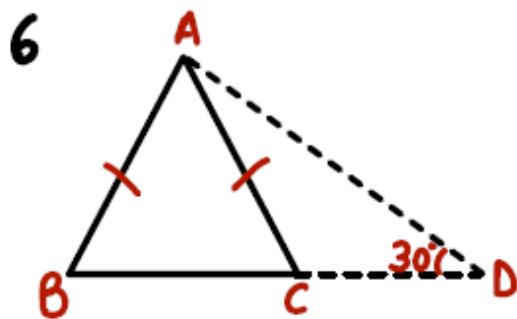
Explanation:

$$\begin{aligned}
 \text{Total Savings} &= 5500 \\
 \text{Total Income} &= \text{Total Exp.} + \text{Savings} \\
 &= 34,400 + 5,500 \\
 &= 39,900
 \end{aligned}$$

$$\therefore \text{Avg. Monthly Income} = \frac{39,900}{12} = 3325$$

Q. 56

- In a triangle ABC, AB = AC. BC is extended to D such that CD = AB and the angle ADC is 30° . What are the angles of triangle ABC?
- a) $60^\circ, 60^\circ, 60^\circ$ 
 - b) $30^\circ, 60^\circ, 90^\circ$ 
 - c) $50^\circ, 60^\circ, 70^\circ$ 
 - d) $60^\circ, 45^\circ, 75^\circ$ 



In $\triangle ACD$,

$$AC = CD$$

$$\Rightarrow \angle CDA = \angle CAD = 30^\circ$$

[angles opposite to equal sides are equal].

In $\triangle ACD$

$$\angle ACD + \angle CDA + \angle DAC = 180^\circ$$

[angle sum property of \triangle]

$$\Rightarrow \angle ACD + 30^\circ + 30^\circ = 180^\circ$$

$$\Rightarrow \angle ACD = 120^\circ$$

$\therefore \angle ACB + \angle ACD = 180^\circ$ [straight line]

$$\Rightarrow \angle ACB = 180^\circ - 120^\circ$$

$$\Rightarrow \angle ACB = 60^\circ$$

In $\triangle ABC$, $AB = AC$

$$\Rightarrow \angle ACB = \angle ABC = 60^\circ$$

[Angle opposite to equal sides are equal].

Since two angles of \triangle are 60° ,
The third angle will also be 60° .

Explanation:

Q. 57

- A two-digit number is 12 more than five times the sum of its digits. The number formed by reversing the digits is 9 less than the original number. The number is:
- 87 ✓
 - 69 ✗
 - 96 ✗
 - 78 ✗

7 let the unit digit = 'b' and ten's digit = a
 $A/Q, 10a+b = 12 + 5(a+b)$
 $\Rightarrow 10a+b = 12+5a+5b$
 $\Rightarrow 5a = 12+4b \text{ --- (i)}$

Reverse no. = 'ba'

$A/Q, 10b+a+9 = 10a+b$
 $\Rightarrow 9a - 9b = 9$
 $\Rightarrow a - b = 1$
 $\Rightarrow a = 1+b \text{ --- (ii)}$

Putting eqⁿ (ii) in (i)

$$5(1+b) = 12+4b$$

$$5+5b = 12+4b$$

$$b = 7$$

$$a = 8$$

∴ Original no. = 87

Explanation:

Q. 58

R can finish a work in 6 days if he works 10 hours a day. S can finish it in 5 days if he works 8 hours a day. If both start a work and work daily for 6 hours, the work will be finished in _____ days.

- a) 5 X
- b) 6 X
- c) 4 ✓
- d) 3 X

$$\begin{aligned} R &= 6 \times 10 = 60 \text{ hours} \\ S &= 5 \times 8 = 40 \text{ hours} \end{aligned}$$

let work will be finished in 'D' days

$$\frac{1}{R} + \frac{1}{S} = \frac{1}{T}$$

$$\Rightarrow \frac{1}{60} + \frac{1}{40} = \frac{1}{6 \cdot D}$$

$$\Rightarrow \frac{\cancel{100}}{\cancel{60} \cdot 40} = \frac{1}{6 \cdot D}$$

$$\Rightarrow D = 4 \text{ days}$$

Explanation:

Q. 59

In an election between two candidates, A gets 63% of the total valid votes. If the total votes polled were 8,750, what is the number of valid votes that the other candidate B gets, if 20% of the total votes were declared invalid?

- a) 6450
- b) 4410
- c) 2590
- d) 3560

$$9 \text{ Total votes} = 8750$$

$$\text{Invalid votes} = 20\% \text{ of Total votes}$$

$$\text{valid votes} = 80\% \text{ of total votes}$$

$$= \frac{80}{100} \times 8750$$

Explanation: 'A' gets 63% of total valid votes

\therefore B gets $(100-63)\% = 37\%$ of total valid votes

$$= \frac{37}{100} \times \frac{2}{100} \times 8750$$

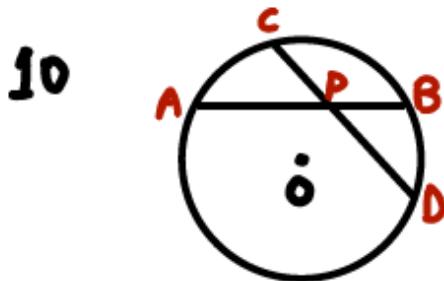
$$= 37 \times 2 \times 35$$

$$= 2590$$

Q. 60

O is the centre of the circle. Its two chords AB and CD intersect each other at the point P (internally) within the circle. If AB = 22 cm, PB = 14 cm, CP = 8 cm, then find the value of the PD.

- a) 11 cm X
- b) 14 cm ✓
- c) 12 cm X
- d) 22 cm X



$$AB = 22 \text{ cm}$$

$$PB = 14 \text{ cm}$$

$$AP = AB - PB = 22 - 14 = 8 \text{ cm}$$

Explanation:

If 2 chords intersect internally within the circle then ,

$$AP \times PB = CP \times PD$$

$$8 \times 14 = 8 \times PD$$

$$\Rightarrow PD = 14 \text{ cm}$$

Q. 61

An amount of ₹8,000 was invested for 2 years, partly in scheme 1 at the rate of 5% simple interest per annum and the rest in scheme 2 at the rate of 4% simple interest per annum. The total interest received at the end was ₹720. The amount of money invested in scheme 1 is:

- a) 4400 X
- b) 3640 X
- c) 4000 ✓
- d) 7200 X

11 let Amount invested in Scheme 1 be 'A'
let Amount invested in Scheme 2 be $(8000 - A)$

Total Interest = 720

Explanation:

$$\begin{aligned} \Rightarrow & \frac{A \times 5 \times 2}{100} + \frac{(8000 - A) \times 4 \times 2}{100} = 720 \\ \Rightarrow & 10A + 64000 - 8A = 72000 \\ \Rightarrow & 2A = 8000 \\ \Rightarrow & A = 4000 \end{aligned}$$

Q. 62

A robber steals a bag from a man at 5 p.m. and starts running at 10km/h. A policeman is informed about the robber at 5:12 p.m. and he chases him on a cycle at 15km/h. At what time is the robber caught by the policeman?

- a) 5:12 p.m.
- b) 5:48 p.m.
- c) 5:36 p.m.
- d) 5:40 p.m.

12 Distance covered by robbers from 5pm to 5:12pm

$$= \frac{12}{60} \times 10 = 2 \text{ km}$$

Relative speed of Robber & Police = $15 - 10 = 5 \text{ km/hr}$

Explanation:

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

$$5 \text{ km/hr} = \frac{2 \text{ km}}{\text{Time}}$$

$$\begin{aligned} \text{Time} &= \frac{2}{5} \text{ hr} = 0.4 \text{ hr} \\ &= 0.4 \times 60 \\ &= 24 \text{ min.} \end{aligned}$$

$$\begin{aligned} \therefore \text{Robber catch by police} &= 24 \text{ min} + 5:12 \text{ pm} \\ &= 5:36 \text{ pm} \end{aligned}$$

Q. 63

What is the maximum value of $7 \cos A + 24 \sin A + 32$?

- a) 25 X
- b) 32 X
- c) 57 ✓
- d) 39 X

13 Max. value of $a \cos A + b \sin A = \sqrt{a^2 + b^2}$

$$\text{Max. value of } 7 \cos A + 24 \sin A = \sqrt{7^2 + 24^2}$$

$$= \sqrt{25^2}$$

$$= 25$$

Maximum value of $(7 \cos A + 24 \sin A + 32)$

$$= 25 + 32$$

$$= 57$$

Explanation:

Q. 64

If equation of line p is $x + y = 5$ and that of line q is $x - y = 3$, what are the coordinates of the point common to both the lines?

- a) (1, 4) X
- b) (2, 3) X
- c) (2, 1) X
- d) (4, 1) ✓

14 Point common to both lines = Intersection point

$$x+y=5 \quad \text{--- (1)}$$

$$x-y=3 \quad \text{--- (2)}$$

Explanation:

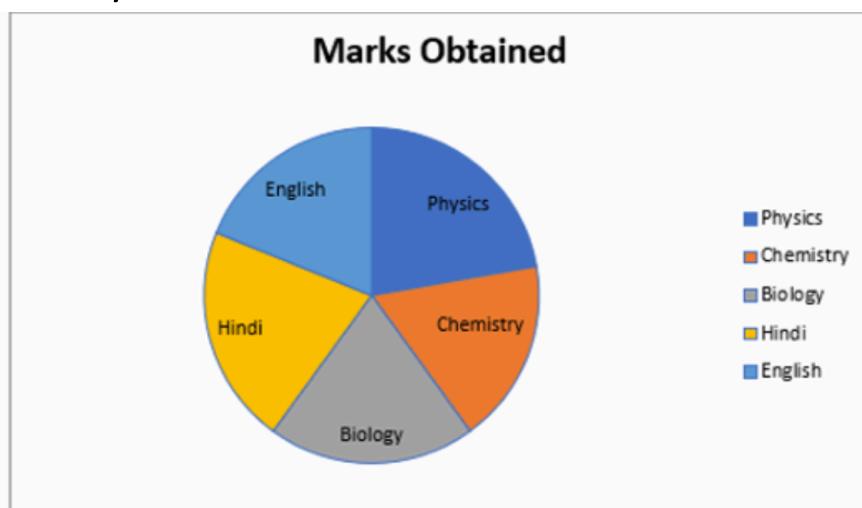
From (1) & (2) we get,

$$x=4, y=1$$

common point = $(x, y) = (4, 1)$

Q. 65

Study the following pie-chart carefully and answer the given question. The pie-chart represents the marks obtained by Sanya in different subjects in class 12. Total marks scored by her in class 12 was 450.



If the total central angles corresponding to the pair of subjects (Physics and Hindi), (Chemistry and Physics) and (Hindi and Chemistry) were 156° , 144° and 140° , respectively, then find the total marks obtained by her in (English and Biology).

- a) 160
- b) 190
- c) 180
- d) 175

$$\begin{aligned} \text{15 Physics + Hindi} &= 156^\circ \quad (1) \\ \text{chemistry + Physics} &= 144^\circ \quad (2) \\ \text{Hindi + chemistry} &= 140^\circ \quad (3) \end{aligned}$$

By Adding eqⁿ (1)(2)&(3) we get,

$$2(\text{Phy.} + \text{Hindi} + \text{chemistry}) = 440^\circ$$

Explanation:

$$\begin{aligned} \Rightarrow \text{Phy.} + \text{Hindi} + \text{chemistry} &= 220^\circ \\ \Rightarrow \text{English} + \text{Biology} + \text{Physics} + \text{Hindi} + \text{chemistry} &= 360^\circ \\ \Rightarrow \text{English} + \text{Biology} &= 360^\circ - 220^\circ = 140^\circ \end{aligned}$$

$$\therefore \text{Total marks scored in English \& Bio} = \frac{140^\circ}{360^\circ} \times 450 \\ = 175$$

Q. 66

A bus driver must complete a 240 km trip in 4 hours. If he averages 70 km an hour for the first 3 hours of his trip, how fast must he travel (in km/h) in the last/final hour?

- a) 30 ✓
- b) 50 ✗
- c) 35 ✗
- d) 60 ✗

Explanation:

$$16 \quad \text{Speed} = \frac{\text{distance}}{\text{Time}} = \frac{240}{4} = 60 \text{ km/hr (for 4 hr.)}$$

$$\text{Avg. speed for first 3 hr} = 70 \text{ km/hr}$$

$$60 = \frac{70 \times 3 + \text{Speed for final hour}}{4}$$
$$\Rightarrow \text{Speed for final hour} = 30 \text{ km/hr}$$

Q. 67

If a sum of ₹3,260 on simple interest amounts to ₹5,420 in 6 years, then what will this sum amount to in 4 years at the same rate of interest?

- a) 4700 ✓
- b) 3700 ✗
- c) 3900 ✗
- d) 4500 ✗

$$\text{It } P = 3260, A = 5420 \quad T = 6 \text{ yrs}$$

$$A = P + SI$$

$$5420 = 3260 + \frac{P \cdot R \cdot T}{100}$$

$$\Rightarrow \frac{360}{2160} = \frac{3260 \times R \times 6}{100}$$

Explanation:

$$\Rightarrow R = \frac{3600}{326}$$

$$A = P + SI \quad (4 \text{ yrs})$$

$$= 3260 + 3260 \times \frac{3600}{326} \times \frac{4}{100}$$

$$= 3260 + 1440$$

$$= 4700$$

Q. 68

- An article is of size $9 \text{ cm} \times 6 \text{ cm} \times 3 \text{ cm}$. The number of such articles that can be packed in a box measuring $63 \text{ cm} \times 42 \text{ cm} \times 21 \text{ cm}$ is:
- a) 343 ✓
 - b) 196 ✗
 - c) 243 ✗
 - d) 49 ✗

Explanation:

18 No. of Articles = $\frac{\text{Volume of Bigger Box}}{\text{volume of small Box}}$

$$= \frac{63 \times 42 \times 21}{9 \times 6 \times 3}$$
$$= 7^3$$
$$= 343$$

Q. 69

A mobile phone dealer buys a phone for 10000 and sells it for 12000. Later, he realizes that he could have sold it for 13000. What is the percentage loss that he incurs?

- a) 15%
- b) 10%
- c) 25%
- d) 20%

Explanation:

$$\begin{array}{ll}
 \text{Ques} & CP = ₹ 10,000 \\
 & SP = ₹ 12,000 \\
 & \text{Profit} = ₹ 2000 \\
 & \text{Potential SP} = ₹ 13000 \\
 & \text{Potential Profit} = ₹ 3000
 \end{array}$$

$$\begin{aligned}
 \% \text{ Loss} &= \frac{(3000 - 2000)}{10,000} \times 100\% \\
 &= 10\%
 \end{aligned}$$

Q. 70**Solve the following system of linear equations:**

$$x + y + z = 15,$$

$$2x - y + z = 12,$$

$$x - y - z = -1$$

a) $x = 2, y = 5, z = 3$

b) $x = 7, y = 5, z = 3$

c) $x = 7, y = 2, z = 3$

d) $x = 7, y = 5, z = 1$

20

$$\begin{aligned}x+y+z &= 15 \quad (1) \\2x-y+z &= 12 \quad (2) \\x-y-z &= -1 \quad (3)\end{aligned}$$

Adding eqⁿ (1) & (3)

$$x+y+z + x-y-z = 15-1$$

$$\Rightarrow 2x = 14$$

$$\Rightarrow x = 7$$

Putting 'x' = 7 in eqⁿ (1) & (2)

$$y+z = 8 \quad (4)$$

Explanation:

$$2x-y+z = 12$$

$$14-y+z = 12$$

$$z-y = -2 \quad (5)$$

From eqⁿ (4) & (5) we get

$$z = 3, y = 5$$

Q. 71

If $\cot A = \frac{5}{12}$, then find the value of $\frac{\sqrt{\sec A - \csc A}}{\sqrt{\sec A + \csc A}} - \sqrt{\frac{17}{7}}$.

- a) $\sqrt{\frac{576}{119}}$
- b) $-\sqrt{\frac{100}{119}}$
- c) $\sqrt{\frac{100}{119}}$
- d) $-\sqrt{\frac{576}{119}}$

$$21 \cot A = \frac{5}{12} = \frac{\text{base}}{\text{Perp.}}$$

$$(\text{Hypotenuse})^2 = (\text{Base})^2 + (\text{perpendicular})^2$$

$$(H)^2 = 5^2 + 12^2 \\ H = 13$$

$$\therefore \sec A = \frac{H}{B} = \frac{13}{5} \quad \therefore \cosec A = \frac{H}{P} = \frac{13}{12}$$

$$\text{Now, } \sqrt{\frac{\sec A - \cosec A}{\sec A + \cosec A}} = \sqrt{\frac{13/5 - 13/12}{13/5 + 13/12}}$$

Explanation:

$$= \sqrt{\frac{12-5}{12+5}}$$

$$= \sqrt{\frac{7}{17}}$$

$$\therefore \sqrt{\frac{\sec A - \cosec A}{\sec A + \cosec A}} - \sqrt{\frac{7}{17}}$$

$$= \sqrt{\frac{7}{17}} - \sqrt{\frac{17}{17}} = \frac{\sqrt{49} - \sqrt{289}}{\sqrt{17} \cdot \sqrt{7}}$$

$$= \frac{7 - 17}{\sqrt{119}}$$

$$= -\frac{10}{\sqrt{119}} = -\sqrt{\frac{100}{119}}$$

Q. 72

Susmita finishes a job in 12 hours working alone. If Susmita and Ruchika finish the same job in 8 hours working together at their respective constant rates, then, in how many hours can Ruchika do the job working alone?

- a) 20 X
- b) 24 ✓
- c) 16 X
- d) 18 X

22. $S \rightarrow$ time taken by Sushmita
 $R \rightarrow$ time taken by Ruchika

$$\frac{1}{S} + \frac{1}{R} = \frac{1}{T}$$

$$\Rightarrow \frac{1}{12} + \frac{1}{R} = \frac{1}{8}$$

$$\Rightarrow \frac{1}{R} = \frac{1}{8} - \frac{1}{12}$$

$$\Rightarrow \frac{1}{R} = \frac{12-8}{12 \times 8}$$

$$\frac{1}{R} = \frac{4}{12 \times 8}$$

Explanation:

$$\Rightarrow R = 24 \text{ hours}$$

Q. 73

If 35 is the mean proportional to 25 and x, then what is the value of x?

- a) 46 X
- b) 49 ✓
- c) 47 X
- d) 48 X

Explanation:

23 If 'b' is mean proportion, $b^2 = ac$

$$\Rightarrow (35)^2 = 25x$$
$$\Rightarrow x = \frac{35 \times 35}{25}$$
$$\Rightarrow x = 49$$

Q. 74

Simplify:

$$\{(3^3 + 2^3) \times \frac{22}{7}\} \times \{(6^2 + 3^2 - 4^2) \div (14\frac{1}{2})\}$$

- a) 220 ✓
- b) 198 ✗
- c) 145 ✗
- d) 110 ✗

Explanation:

$$\begin{aligned}
 & 24 \quad \left\{ (3^3 + 2^3) \times \frac{22}{7} \right\} \times \left\{ (6^2 + 3^2 - 4^2) \div (14\frac{1}{2}) \right\} \\
 &= \left\{ (27 + 8) \times \frac{22}{7} \right\} \times \left\{ (36 + 9 - 16) \div \frac{29}{2} \right\} \\
 &= \left\{ \cancel{35}^5 \times \frac{22}{\cancel{7}} \right\} \times \left\{ \cancel{29}^1 \times \frac{2}{\cancel{21}} \right\} \\
 &= 110 \times 2 \\
 &= 220
 \end{aligned}$$



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

Q. 75

The following table shows admitted students in an institute during the academic years 2015 to 2020 in different courses.

Academic year	Engineering	Science	Arts	Management
2015	1200	850	450	240
2016	1362	821	525	275
2017	1351	870	624	286
2018	1409	921	615	293
2019	1421	931	795	300
2020	1400	950	750	320

Which course had the highest growth rate(in percentage) during the period from 2015 to 2020.

- a) Engineering X
- b) Science X
- c) Arts ✓
- d) Management X

25 Highest Growth Rate From 2015 to 2020

$$\text{Engineering} = \frac{1400 - 1200}{1200} \times 100\% = 16.6\%$$

$$\text{Science} = \frac{950 - 850}{850} \times 100\% = \frac{10}{85} \times 100\% = 11.76\%$$

$$\text{Arts} = \frac{750 - 450}{450} \times 100\% = \frac{300}{450} \times 100\% = 66.66\% \quad (\text{v}).$$

$$\text{Management} = \frac{320 - 240}{240} \times 100 = 33.33\%.$$

Explanation:

Q. 76

In the context of movement of cells, exocytosis is the process by which:

- a) cells absorb external material by engulfing it with the cell membrane X
- b) cell death is brought about through a heavily regulated sequence of events X
- c) cells move waste materials from within the cell into the extracellular fluid ✓
- d) a cell takes in the fluids along with dissolved small molecules X

Correct answer = Option 3 (cells move waste materials from within the cell into the extracellular fluid)

Exocytosis =

- The process by which a cell releases large amounts of material, such as waste products, hormones, or neurotransmitters, from inside the cell to the outside (extracellular fluid).
- **Functions of Exocytosis:**
 - Secretion of substances
 - Waste removal
 - Cell membrane growth and repair
 - Cell-to-cell communication
 - Immune response
- **Amoeba ,**
 - is an Unicellular organism,
 - Eukaryotic
 - (Protista kingdom) ,
 - Pseudopods (false feet)
 - Holozoic mode of nutrition

Explanation:

- It acquires food by a process called **ENDOCYTOSIS** in which cells absorb external material by engulfing it with the cell membrane.
- The steps of food absorption in Amoeba involves -
 - Ingestion
 - Digestion
 - Absorption
 - Assimilation
 - Egestion
- **Phagocytosis & Pinocytosis** are forms of Endocytosis .
- Sodium and Potassium pumps is an example of **ACTIVE TRANSPORT** .
- **Active Transport** takes place –
 - Against concentration gradient i.e(Low concentration to High concentration)
 - and requires **ENERGY(ATP)** .
 - example – RO
 - Phagocytosis and Pinocytosis are types of Active Transport.
- **TO DO-**
 - Recall about OSMOSIS
 - Recall about Hypertonic , Hypotonic , Isotonic solutions .

Q. 77

In the performance of _____ dance, on one side raasa dances are performed by women, whereas on the opposite side instrumentalist play the pung choloms (drums) and the karataala (cymbals).

- a) Kathakali
- b) Yakshagana
- c) Odissi
- d) Manipuri

Explanation:

Correct answer = Option 4 (Manipuri)

Kathakali = Kerala

- based on epics like the Mahabharata and Ramayana.
 - Use of elaborate facial makeup/ **5 Vesham**
 - o Thadi - beard
 - o Minukki – radiant
 - o Kari – black , forest dwellers
 - o Kathi - knife
 - o Pacha – green colour, symbol of strength
 - 5 forms of fine arts
 - Kathakali – **SKY** represent
 - Accompanied by percussion instruments like chenda, maddalam, and elathalam , edakka(Idakka)
 - **Kellikottu** – Drum performance
 - Among the 8 classical dance forms , The four aspects of abhinaya –
 - o **Angika** –body
 - o **Vachika**- Voice
 - o **Aharya**- costumes , makeup , scenery , jewellery
 - o **Satvika** – mental state
- And the
- **Nritta** – pure dance , taking towards
 - **Nritya** –dance +facial expressions
 - **Natya** - perfectly combined in Kathakali.

- **Sevakali session**
- **KALASAM** Term associated with Kathakali
- Dance is performed from night(dusk) to morning (dawn), it welcomes the dawn.
- Texts which mentions about Kathakali-
 - o **Balarama Bharatam**- by K.Sambasiv Sastri
 - o **Hastalakshana Deepika** – by KU Thempuran
- Kathakali took shape in southern India in the 17th century under the patronage of the Prince of Karnataka .
- Symbolises the victory of good over evil .
- Nalcharitam play
- **TO DO**
 - o LEARN the exponents of Kathakali .

Yakshagana = Karnataka

- Folk theater

Odissi = Odisha

- Devotional themes, especially dedicated to Lord Jagannath.

Manipuri = Manipur

- themes of Radha-Krishna, especially Raas Leela , spiritual and devotional dance , not theatrical .

- Men perform **Pung Cholom** — a drum dance that combines acrobatics and rhythm.
- Traditional singing –**NAT**
- Kartal or Manjira (cymbals)** are used for rhythm.
- Vaishnavite
- Introvert dance
- 2 traditions of Manipuri – **Sankeertana , Rasa**

Q. 78

There were several cities in the Mauryan empire. Which of the following cities was located on the southernmost side?

- a) Girnar
- b) Topra
- c) Brahmagiri
- d) Rupnath

Correct answer = Option 3 (Brahmagiri)

Girnar =

- Location = Junagadh district, **Gujarat**, Western India
- Girnar is the site of Ashoka's Major Rock Edicts.
- Junagarh rock inscription -
 - is written in **Sanskrit language**.
 - Is associated with **Rudradaman1 (Saka ruler)**
 - He repaired **Sudarshan lake**

Topra =

- Location = Haryana
- Famous for one of Ashoka's pillar edicts-also called **Delhi Topra Pillar edict**
- Only pillar that contains **7th major edict** .
- The painted illustration of the moving of the Ashokan Pillar at Topra is found in – **Sirat-i-Firuz Shahi**

Explanation:

Brahmagiri =

- Location = Karnataka

Rupnath =

- Location = Near Jabalpur, Madhya Pradesh

TO DO-

- Where is **Bhabru – Bairat pillar** located?
- Barabar hill cave** is dedicated to which religion ?
- Where is **Rumminidevi pillar inscription** located ?
- Where is **Nigali sagar pillar** located ?
- Kalinga war** – year batao ? & is mentioned in which major rock edict ?
- 1st major rock edict** mei kya mention hai ?

Q. 79

Which one of the following pairs of principal chemical constituents in water and their source is correct?

- a) Ca : Amphiboles, Feldspars, Gypsum ✓
- b) NO₃ : Apatite, Fluorite, Mica ✗
- c) CO₃ : Feldspars, Clay minerals ✗
- d) F : Dolomite, Gypsum, Anhydrite ✗

Correct answer = Option 1 (Ca : Amphiboles, Feldspars, Gypsum)

Amphiboles =

- Type of Metamorphic rock

Feldspars =

- Feldspar & Quartz are **MINERALS** found in Igneous & Sedimentary rocks .

Gypsum =

- Chemical formula: $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ (Calcium sulfate dihydrate)
- Very soluble in water
- POP ka formula batana ?

Mica =

- Non metallic mineral
- Used in **electrical industry**
- Koderma – Gaya –Hazaribagh belt of Jharkhand
- Ajmer – Rajasthan
- Nellore Mica belt of Andhra Pradesh

Dolomite ($\text{CaMg}(\text{CO}_3)_2$) =

- Type: Carbonate mineral

TO DO-

- FORMULA batana inka –
 - o Epsom salt
 - o Green vitriol
 - o White vitriol
 - o Blue vitriol
 - o Mohr Salt
 - o Borax
 - o Alum
 - o Washing soda
 - o Heavy water
 - o Hard water
 - o Baking powder
 - o Baking soda
 - o Bleaching powder
 - o Brine
 - o Quick lime
 - o Chalk/ Marble
 - o Lime water/ Slaked lime

Q. 80

Which one of the following pairs denoting various forms of 'Bhakti' is not correctly matched?

- a) Saguna : Belief in Gods with attributes X
- b) Nirguna : Belief in Gods without attributes X
- c) Alvars : Believed in devotion of Shakti ✓
- d) Nayanars : Believed in devotion of Shiva X

Correct answer = Option 3 (Alvars : Believed in devotion of Shakti)

Saguna : Belief in Gods with attributes =

- "Saguna" Bhakti refers to devotion toward a personal God with attributes and forms, such as:
 - o Rama- Tulsidas
 - o Krishna- Mirabai , Surdas
 - o Vishnu
 - o Shiva
- worships the form (murti) of the deity,

Nirguna: Belief in Gods without attributes =

- Nirguna Bhakti is devotion to a formless, attribute-less, all-pervading divine.
- Saints like Kabir , Guru Nanak , Dadu dayal

Explanation:

Alvars: Believed in devotion of Vishnu =

- 1st female Alvar - ANDAL

Nayanars: Believed in devotion of Shiva

LEARN –

- Advaita – Shankaracharya
- Vishistadvaita – Ramanujacharya
- Dvait- Madhavacharya
- Dvaitadvaita/ Bhedabhed- Nimbarkacharya
- Shuddhadvaita- Vallabhacharya
- Bhavartha dipika (commentary on Bhagvat Gita) –Jnanesvara/ Jnanadeva
- Annamacharya composed Sankirtana for God Venkateshwara

Q. 81**Consider the following statements:**

1. The Indian monsoon is divided into the Southwest Monsoon and Northeast Monsoon.
2. The retreating monsoon is associated with the development of cyclonic depressions in the Bay of Bengal.
3. The Western Disturbances are the primary cause of snowfall in the Himalayan region.
4. El Niño is known to have an enhancing effect on the monsoon rains in India.

Which of the statements above is/are correct?

- a) 1, 2, 3 and 4 
- b) 1, 2, and 3 only 
- c) 2, 3, and 4 only 
- d) 1, 3, and 4 only 

Correct answer = Option 2 (1, 2, and 3 only)

Statement I is correct = The Indian monsoon is divided into the Southwest Monsoon and Northeast Monsoon.

- **Southwest Monsoon (Summer Monsoon)**: This is the primary rainy season for most of India, occurring from June to September. Winds blow from the southwest, bringing moisture from the Arabian Sea and Bay of Bengal.
- **Northeast Monsoon (Winter Monsoon)**: Occurs from October to December, primarily affecting the southeastern coast of India (Tamil Nadu, parts of Andhra Pradesh, Kerala). Winds blow from the northeast, picking up moisture from the Bay of Bengal.

Statement II is correct = The retreating monsoon is associated with the development of cyclonic depressions in the Bay of Bengal.

- The "retreating monsoon" (also known as the Northeast Monsoon season) is a period of transition in October and November.
- During this time, low-pressure conditions over the Bay of Bengal often intensify into cyclonic depressions and even cyclones.

Explanation: **Statement III is correct** = The Western Disturbances are the primary cause of snowfall in the Himalayan region.

- Western Disturbances are extratropical storms originating in the Mediterranean region.
- They travel eastward across Iran, Afghanistan, and Pakistan, bringing sudden winter rain and snowfall to the northwestern parts of the Indian subcontinent, including the Himalayan region.

Statement IV is incorrect = El Niño is known to have an enhancing effect on the monsoon rains in India.

- El Niño refers to warming of sea surface temperatures in the central and eastern Pacific Ocean.
- It is generally associated with a weakening of the Indian monsoon.
- It often leads to drought-like conditions in India.
- The enhancing effect on the Indian monsoon is more commonly associated with La Niña, not El Niño.

TO DO -

Recall about Pre – Monsoon showers .

Q. 82

Which of the following statements is correct?

- A) The Preamble of the Indian Constitution was based on the Objectives Resolution.
 - B) The Preamble of the Indian Constitution was adopted by the Constituent Assembly on January 22, 1947.
- a) Both A and B is true 
- b) Neither A nor B is true 
- c) Only B is true 
- d) Only A is true 

Correct answer = Option 4 (Only A is true)

The Preamble of the Indian Constitution =

- introduced by Jawaharlal Nehru on December 13, 1946, in the Constituent Assembly
- It was introduced through the Objective Resolution by Jawaharlal Nehru
- Objective resolution adopted on January 22, 1947.
- Preamble was adopted by the C.A on 26 November 1949.
- N.A. Palkhivala - '**Identity Card of the Constitution**'.
- K.M. Munshi - '**Political Horoscope of the Constitution**'.
- "**The Soul of the Constitution**" - Thakur Das Bhargava
- '**Key note of the Constitution**' – Ernst Barker
- **Key Words =**
 - We, the People of India
 - Sovereign
 - Socialist
 - Secular
 - Democratic
 - Republic
 - Justice
 - Liberty
 - Equality
 - Fraternity

Explanation:

- Words "Socialist" and "Secular" were added by the 42nd Amendment Act, 1976
- **Judgments Related to the Preamble =**
 - Berubari Union Case, 1960
 - Kesavananda Bharati Case, 1973
 - LIC of India Case, 1995
- The mind of the makers of the Constitution of India is reflected in – PREAMBLE
- Preamble was formulated after the entire Constitution was made .
- Preamble is **NOT Justiciable** .
- The Preamble is **NOT Enforceable in a court of law**.
- Preamble is neither a source of Power nor restriction to the government.
- SC has held that the Preamble **CAN BE considered as an aid to the legal interpretation of the Constitution where the language is ambiguous** .
- **Tell me guys Preamble has been borrowed from which nation ?**

Q. 83

Consider the following statements:

- 1.The Bhagavad Gita is part of the Mahabharata and is a dialogue between Krishna and Arjuna.
- 2.Shankaracharya is associated with the Advaita Vedanta school of Hindu philosophy.
- 3.The Rigveda is the oldest of the Vedas and contains hymns dedicated to various deities.
- 4.The Natya Shastra, attributed to sage Bharata, is an ancient Indian treatise on the performing arts and is closely related to the expression of Hindu spirituality.

Which of the statements above is/are correct?

- a) 1, 2, and 4 only
- b) 1, 2, 3, and 4
- c) 1, 3, and 4 only
- d) 2, 3, and 4 only

	<p>Correct answer = Option 2 (1, 2, 3, and 4)</p> <p>Statement I is correct = The Bhagavad Gita is part of the Mahabharata and is a dialogue between Krishna and Arjuna.</p> <ul style="list-style-type: none"> • SAGE VYAS is supposed to compile both the Puranas &the Mahabharata. • Mahabharata is a central epic of ancient India and consists of 1, 00, 000 verses in 18 parvas . • SHANTI PARVA is associated with the Sanskrit Mahabharata. <p>Statement II is correct = Shankaracharya is associated with the Advaita Vedanta school of Hindu philosophy.</p> <ul style="list-style-type: none"> • associated with Advaita Vedanta, meaning “non-dualism” <p>Statement III is correct = The Rigveda is the oldest of the Vedas and contains hymns dedicated to various deities.</p> <ul style="list-style-type: none"> • Composed around 1500–1200 BCE, it is part of Shruti literature (that which is heard). • Contains 1,028 hymns (suktas) in Vedic Sanskrit, divided into 10 Mandalas (books). • Deities Praised: <ul style="list-style-type: none"> ◦ Agni (fire) – the messenger of the gods ◦ Indra – the warrior god, slayer of Vritra (drought demon) ◦ Varuna – the cosmic order enforcer ◦ Soma – the deity of a sacred ritual drink • Recall what is mentioned in 3rd, 7th, 9th, 10th Mandal. • Aitareya Brahmana is associated with Rig Veda. • LEARN – In 2007 , 30 Rig Veda manuscripts dating from 800 to 1500BC included in the UNESCO Memory of the World Register . <p>Statement IV is correct = The Natya Shastra, attributed to sage Bharata, is an ancient Indian treatise on the performing arts and is closely related to the expression of Hindu spirituality.</p> <ul style="list-style-type: none"> • Recall about Trinity of Carnatic Music . • Queen of Carnatic Music ? • Father of Carnatic Music ?
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Q. 84

Which of the following pair of festival - state is correct?

- I. Modhera Dance festival - Gujarat
- II. Baneshwar Fair - Rajasthan

a) Only I

b) Both I and II

c) Neither I nor II

d) Only II

Correct answer = Option 2 (Both I and II)

Modhera Dance Festival - Gujarat =

- An annual classical dance festival held at the magnificent Sun Temple in Modhera, Gujarat.
- Built by King Bhima I of the Chalukya (Solanki) dynasty .

Baneshwar Fair – Rajasthan

Gujarat festivals-

- Madhavpur fair- Porbandar district
- Rann utsav
- Shalmaji melo
- Vauth mela
- Dang darbar
- Dhrang fair
- Bhavnath fair
- Chitra vichitra festival
- Uttarayan / International Kite Festival

Explanation:

Rajasthan festivals –

- Kolayat fair
- Bundi utsav
- Chandrabhaga fair
- Nagaur fair
- Udaipur – Mewar festival during Gangaur
- Desert fair
- Pushkar fair- camel fair , Ajmer
- Elephant festival
- Braj festival
- Urs fair

Q. 85**Members of which of the following phyla are commonly known as sea walnuts?****a) Arthropoda** **b) Mollusca** **c) Platyhelminthes** **d) Ctenophora** **Correct answer = Option 4 (Ctenophora)****Arthropoda =**

- largest phylum of Animalia – largest class is insects.
- organ-system level of organisation.
- bilaterally symmetrical, triploblastic, segmented and coelomate animals.
- chitinous exoskeleton.
- Open circulatory system
- Jointed legs
- Malpighian tubules for excretion
- **TRACHEA – is the network of air tubes for gas exchange in Insects.**

Mollusca =

- second largest animal phylum.
- bilaterally symmetrical, triploblastic and coelomate
- Ex:- Pila , Pinctada (Pearl oyster), (Cuttlefish), Squid , Octopus (Devil fish – 3 hearts), Snail , Unio , helix
- **LEARN – Snails are hermaphrodites , can change their gender during their lifespan.**

Explanation:**Platyhelminthes =**

- They have a dorso-ventrally flattened body, hence are called flatworms.
- bilaterally symmetrical, triploblastic and acelomate animals with organ level of organisation.
- Specialised cells called flame cells help in osmoregulation and excretion.
- Incomplete digestive system
- Ex:- Taenia (Tapeworm), Fasciola (Liver fluke-parasite), Planaria (free living),
- **FLATWORMS & ROUNDWORMS are endoparasite in human body.**

Ctenophora =

- Ctenophores, commonly known as sea walnuts or comb jellies are exclusively marine, radially symmetrical, diploblastic organisms with tissue level of organisation
- Bioluminescence (the property of a living organism to emit light) is well-marked in ctenophores.
- Ex:- Ctenoplana ,Comb jelly, Pleurobarchia

Q. 86

Which article of the Indian Constitution, under The Right of Children to Free and Compulsory Education Act or Right to Education Act (RTE), describes the modalities of the importance of free and compulsory education for children between 6 and 14 in India?

- a) Article 21A ✓
- b) Article 35A ✗
- c) Article 19B ✗
- d) Article 43A ✗

Correct answer = Option 1 (Article 21A)

Article 21A = Right to education

- The State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine.
- It was introduced by the 86th Amendment Act of 2002.
- To enforce Article 21A, The Right of Children to Free and Compulsory Education Act or Right to Education Act (RTE) was enacted in 2009

Article 35A =

- Article 35A gives the J&K Legislature a carte blanche/ complete freedom to decide who all are 'permanent residents' of the State.
 - o 'Permanent residents' included people who were hereditary State subjects as in 1927, when J&K was a princely state prior to its accession to the Indian Dominion in 1947.

- It was incorporated into the Constitution of India in 1954 by a Presidential Order, following the 1952 Delhi Agreement

Article 19 (1) = Article 19(1) lists six fundamental freedoms guaranteed to citizens:

TRICK - SAAMRO

- (a) Freedom of Speech and Expression
- (b) Freedom to Assemble Peaceably and Without Arms
- (c) Freedom to Form Associations or Unions or Co-operative Societies
- (d) Freedom to Move Freely Throughout the Territory of India
- (e) Freedom to Reside and Settle in any Part of the Territory of India
- (g) Freedom to Practice any Profession, or to Carry on any Occupation, Trade or Business.
- **Article 43A** = The State shall endeavour to secure the participation of workers in the management of undertakings, establishments or other organisations engaged in any industry.

Q. 87

In which of the following ways can 1 Volt be expressed?

- a) 1 Joule per Coulomb ✓
- b) 1 Joule Coulomb per second ✗
- c) 1 Joule Coulomb per second ✗
- d) 1 Joule-Coulomb ✗

Correct answer = Option 1 (1 Joule per Coulomb)

1 Volt =

- 1 Volt (V) is defined as the potential difference between two points when 1 Joule of work is done to move 1 Coulomb of electric charge from one point to the other.
- Therefore, the formula for voltage is:
 - o $V=Q/W$
- Where:
 - o V = Voltage (Volts)
 - o W = Work Done / Energy (Joules)
 - o Q = Charge (Coulombs)
- This is the standard definition of voltage (also called electric potential difference)
- **LEARN – Alessandro Volta** invented the voltaic pile , the forerunner of the modern battery in 1800.

Q. 88**Which among the following is the heaviest Gas?**

- a) Argon 
- b) Radon 
- c) Hydrogen 
- d) Helium 

Correct answer = Option 2 (Radon)**Hydrogen (H_2) =**

- Atomic Number = 1
- Atomic Mass = 2 u (molecular form H_2)
- Lightest gas in the universe
- Most abundant element in the universe.

Helium (He) =

- Atomic Number = 2
- Atomic Mass = 4 u
- Second lightest gas
- Pierre Jansen , Norman Lockyer
- Used in balloons

Argon (Ar) =

- Atomic Number = 18
- Atomic Mass = 40
- Used in double glazed windows between the panes, to fill the space in bulb

Explanation:
Radon (Rn) =

- Atomic Number: 86
- Atomic Mass: ~222 u
- Heaviest among the noble gases

In Periodic table , the highly electronegative halogens and highly electropositive alkali metals are separated by – NOBLE GASES.

- LEARN the atomic number of all Noble gases
- **Neon** – emits red light when electricity is passed , used in advertisement.
- **Krypton** – atomic mass 86 used to measure a standard unit of length.

Q. 89

In the context of Open economy, forex stands for which of the following?

- a) Formal Expenditure Ratio X
- b) Foreign Expenditure Ratio X
- c) Formal Exchange rate X
- d) Foreign Exchange rate ✓

Correct answer = Option 4 (Foreign Exchange rate)

FOREX = Foreign Exchange

- The global market where currencies are bought and sold
- The Foreign Exchange Rate, i.e., the value of one currency in terms of another.

FOREX Reserves consists of –

- FCA (Foreign Currency Assets) + G-Sec
- SDR(Special Drawing Rights)/ PAPER GOLD
 - o 5 Currency-
 - USA-\$
 - EU-Euro
 - Japan-Yen
 - China – Yuan
 - Britain –Pound
- Gold reserves
- RTP(Reserved Tranche Position)

Recall about 1990 Balance of Payment Crisis in India .

Q. 90

A river drains the water collected from a specific area, is known as?

- a) Catchment area ✓
- b) Watershed ✗
- c) Dendritic area ✗
- d) Drainage Basin ✗

Correct answer = Option 1 (Catchment area)

Catchment Area =

- The entire area from which a river or stream collects surface water, including rain, snowmelt, and groundwater flow.
- It includes tributaries, streams, lakes, and ponds feeding into the river

Watershed =

- The boundary line separating one drainage basin from the other is known as the Watershed.
- A Watershed is a natural geo hydrological unit of land , which collects water and drains it through a common point by a system of streams .

Explanation:

Dendritic Area =

- This refers to a drainage pattern,
- The term "dendritic" means tree-like.
- **GANGA RIVER**
- Rivers of northern plain.

Drainage Basin =

- A larger region drained by a river and all its tributaries
- Can contain multiple catchment areas (sub-basins).

Q. 91

- Which Amendment to the Constitution Act led to establishment of the National Judicial Appointments Commission in India?**
- a) 95th Amendment
 - b) 99th Amendment
 - c) 96th Amendment
 - d) 97th Amendment

Correct answer = Option 2 (99th Amendment)

99th Amendment (2014) =

- Established the National Judicial Appointments Commission (NJAC).
- Aimed to replace the Collegium system for the appointment of judges in the Supreme Court and High Courts.
- Introduced Articles 124A, 124B, and 124C into the Constitution.
- The NJAC was to consist of:
 - Chief Justice of India (Chairperson)
 - Two senior-most Supreme Court judges
 - Union Law Minister
 - Two eminent persons (nominated by a committee including PM, CJI, and Leader of Opposition)

95th Amendment (2009) =

- Related to the reservation of seats for Scheduled Castes (SCs), Scheduled Tribes (STs), and Anglo-Indians in the Lok Sabha and State Legislative Assemblies.
- Extended the reservation period for SCs, STs, and Anglo-Indians up to 2020 (originally it was until 1960, and extended multiple times).

96th Amendment (2011) =

- Amended the Eighth Schedule of the Constitution.
- Changed the name of the Oriya language to Odia.

97th Amendment (2011) =

- Related to co-operative societies.
- Added Part IXB to the Constitution, which deals with the co-operative societies.
- Inserted Article 43B in the Directive Principles of State Policy.
- Also amended Article 19(1)(c) to include the right to form co-operative societies as a fundamental right.

Explanation:

Q. 92**Twinkling of stars is related to the phenomenon of :**

- a) Interference of light
- b) Reflection of light
- c) Refraction of light
- d) Dispersion of light

Correct answer = Option 3 (Refraction of light)**Interference of light =**

- It is the phenomenon where two light waves superimpose to form a resultant wave of greater or lower amplitude.
- Ex:- Young's double-slit experiment

Reflection of light =

- Bouncing back of light from a surface (like a mirror).
- Ex:- Seeing your image in a mirror.

Refraction of light =

- Bending of light as it passes through mediums of different densities (like air layers in the atmosphere).
- Ex:- Twinkling of stars

Explanation:**o How it causes twinkling:**

- The light from a star bends (refracts) as it passes through Earth's turbulent atmosphere with varying air densities.
- These constant atmospheric changes change the light's path, making the star appear to change position and brightness rapidly — hence twinkling.

Dispersion of light =

- Splitting of light into its component colors.
- ISAAC NEWTON discovered the dispersion of white light through a prism in 1666.
- Ex:- Formation of a rainbow through a prism or raindrops.

Q. 93

What happens when quick lime reacts vigorously with water?

- a) Dissociation reaction
- b) Double displacement reaction
- c) Displacement reaction
- d) Exothermic reaction

Correct answer = Option 4 (Exothermic reaction)

Dissociation reaction =

- A single compound breaks down into two or more simpler substances (elements or compounds).
- Also called a decomposition reaction.
- **General Form:**
 - o $AB \rightarrow A+B$

Double Displacement Reaction =

- A chemical reaction in which two compounds exchange their ions or elements.
- **General Form:**
 - o $AB+CD \rightarrow AD+CB$

Explanation:

Displacement Reaction =

- A reaction in which an element replaces another element in a compound.
- **General Form:**
 - o $A+BC \rightarrow AC+B$

Exothermic reaction =

- A chemical reaction in which heat is released to the surroundings.
- Quick lime (CaO) reacts with water to form slaked lime ($Ca(OH)_2$).
- A large amount of heat is released → the reaction mixture becomes very hot, sometimes even steams or boils.

Electrolysis of water – William Nicholson, is an Indirect redox reaction.

Maillard reaction takes place during the cooking of meat.

Q. 94**Which of the following is not a Capital Expenditure ?**

- a) Grants ✓
- b) Loan Repayment ✗
- c) Developmental Expenditure ✗
- d) None of the above ✗

Explanation:**Correct answer = Option 1 (Grants)****Capital Expenditure =**

- Capital expenditure is defined by the Union government as money spent on the acquisition of assets such as buildings, land, machinery, and equipment, as well as stock investments.
- An expense that creates permanent assets and yields regular income for the government.
- It also increases labour participation, takes stock of the economy and raises its capacity to produce more in future.
- **Capital expenditure includes =**
 - Acquiring fixed and intangible assets
 - Upgrading an existing asset
 - Repairing an existing asset
 - Repayment of loan
- Capex has the maximum multiplier effect (change in rupee value of output with respect to a change in rupee value of expenditure).

Q. 95**Which of the following rivers rise from the Eastern Ghats?**

1. Hemavathi
2. Nagavali
3. Malaprabha
4. Vamsadhara

a) 3 and 4 Only**b) 1 and 3 only****c) 2 and 4 Only****d) 1 and 2 only****Explanation:**

Correct answer = Option 3 (2 and 4 Only)

Hemavathi River =

- **Origin:** Western Ghats (Karnataka)
- **Tributary of Kaveri River**

Nagavali River =

- **Origin:** Eastern Ghats near Odisha
- **Flows through Odisha and Andhra Pradesh**
- **Langulya** is another name for Nagavali River.

Malaprabha River =

- **Origin:** Western Ghats (Karnataka)
- **Tributary of Krishna River**

Vamsadhara River =

- **Origin:** Eastern Ghats in Kalahandi district, Odisha
- **Flows through Odisha and Andhra Pradesh**

Q. 96

Consider the following statements regarding Khardung La Pass.

1. It is the highest motorable pass in India
2. It is the gateway to the Nubra and Shyok Valleys
3. It is situated to the North of Mount Godwin-Austen.

Which of the statements given above is / are correct?

- a) Only 1 and 2
- b) Only 2 and 3
- c) Only 1
- d) Only 2

Correct answer = Option 4 - Only -2

Statement I is incorrect = Umling La or Umlung La is the highest paved road and mountain pass in the world, located in Ladakh, India, on the ridgeline between Koyul Lungpa and the Indus River near Demchok.

Statement II is correct = Khardung La serves as the main route from Leh to Nubra Valley and Shyok Valley, making it a crucial strategic and logistical route.

Statement III is incorrect = Mount Godwin-Austen is K2, located in the Gilgit-Baltistan region (in Pakistan-occupied Kashmir). Khardung La is located southeast of K2, so it is not north of Mount Godwin-Austen.

Mountain Passes in Leh-Ladakh =

- **Chang La**
- **Bara-Lacha La Pass =**
 - This Himalayan Zanskar Range pass connects Lahual and Ladakh and is regarded as the “Gateway to Ladakh.”
- **Imis La =**
 - It connects Ladakh with Tibet.
- **The Zoji La Pass =**
 - This pass, located in Dras, connects three areas:
 - Kashmir Valley in the west, Indus Valley in the east, and Suru Valley in the north-east
- **Tanglang La Pass =**
 - Tanglang La Pass is one of Ladakh’s most stunning high-altitude mountain routes,

Explanation:

Q. 97

Kailasanathar is the temple built by which dynasty and in which state?

- a) Chola, Tamil Nadu
- b) Pallava, Andhra Pradesh
- c) Chola, Andhra Pradesh
- d) Pallava, Tamil Nadu

Explanation:

Correct answer = Option 4 (Pallava, Tamil Nadu)

Temples Built by the Pallavas:

- Kailasanathar Temple, Kanchipuram =
 - o Built by Narasimhavarman II (Rajasimha)
 - o Dravidian-style temple
- Shore Temple, Mahabalipuram (Mamallapuram) =
 - o Built by: Narasimhavarman II (Rajasimha)
 - o UNESCO World Heritage Site
- Pancha Rathas, Mahabalipuram =
 - o Built by Narasimhavarman I (Mamalla)
 - o Type: Monolithic rock-cut temples
- Varaha Cave Temple, Mahabalipuram =
 - o Type: Rock-cut cave temple
 - o Dedicated to Lord Vishnu (in Varaha form)
 - o Features: Bas-reliefs and fine sculptures

Q. 98

Who won the Men's Singles title at the 2025 Italian Open?

- a) Novak Djokovic
- b) Jannik Sinner
- c) Carlos Alcaraz
- d) Daniil Medvedev

Explanation:

Correct answer = Option 3 (Carlos Alcaraz)

- Carlos Alcaraz won the 2025 Italian Open, Defeating world No 1 Jannik Sinner on his home turf in Rome.
- This marked Alcaraz's first Rome Masters 1000 title
- Jasmine Paolini (Italy) won Women's Singles by defeating Coco Gauff.
- Paolini became only the second Italian woman in the Open Era to win Rome, following Raffaella Reggi in 1985

Q. 99

Who was elected as the Pope of the Roman Catholic Church in 2025?

- a) Cardinal Pietro Parolin
- b) Cardinal Luis Antonio Tagle
- c) Cardinal Robert Francis Prevost
- d) Cardinal Marc Ouellet

Explanation:

Correct answer = Option 3 (Cardinal Robert Francis Prevost)

- Cardinal Robert Francis Prevost was elected as the 267th Pope of the Roman Catholic Church.
- He chose the papal name Leo XIV, becoming the first American-born pontiff in history.
- Pope Leo XIV is the first American-born pope in the Church's 2,000-plus-year history, born in Chicago in 1955

Q. 100

What was India's ranking in the 2025 World Press Freedom Index by Reporters Without Borders?

- a) 139th
- b) 149th
- c) 151st
- d) 159th

Explanation:

Correct answer 3 = Option 3 (151st)

- India was ranked 151st out of 180 countries in the 2025 World Press Freedom Index, as released by Reporters Without Borders (RSF).
- Norway- 1
- Estonia- 2
- Sri Lanka- 139
- Bangladesh- 149
- Pakistan - 158
- Afghanistan- 175
- China- 178
- Eritrea- 180 (Last)