Q.1 Evaluate: (4 + 5) × (7 - 2) = ?

A. 35
B. 40
C. 45
D. 50

Answer: C

Sol: Given:
(4 + 5) × (7 - 2) = ?
Solution:
(4 + 5) × (7 - 2) = ?
9 × 5 = ?
? = **45**
Thus, correct option is (c).

Q.2 Which of the following addresses are identical?
1. Vill. Rampur, PO Rampur, Dist. Aligarh - 202001
2. Vill Rampur, PO Rampur, Dist Aligarh - 202001
3. Vill. Rampur, PO Rampur, Dist. Aligarh - 202010

A. 1 only
B. 2 only
C. 1 and 2 only
D. All three

Answer: C

Sol: Given:
1. Vill. Rampur, PO Rampur, Dist. Aligarh - 202001
2. Vill Rampur, PO Rampur, Dist Aligarh - 202001
3. Vill. Rampur, PO Rampur, Dist. Aligarh - 202010
Address 1
Vill. Rampur, PO Rampur, Dist. Aligarh – 202001
Address 2
Vill Rampur, PO Rampur, Dist Aligarh – 202001
Differences like "Vill." vs "Vill" and "Dist." vs "Dist" are only abbreviations.
The place name, post office, district, and PIN code (202001) are exactly the same.
Therefore, Address 1 and Address 2 are identical.
Address 3
Vill. Rampur, PO Rampur, Dist. Aligarh – 202010
The PIN code is different (202010 ≠ 202001).
Hence, it is **not** identical to the first two.
So, **1 and 2** only are identical.
Thus, correct option is (c).

Q.3 "Science advances rapidly with innovation." If the 2nd letter of every 2nd word is written in order, what word is formed?

A. ae
B. di
C. ai
D. nr

Answer: B

Sol: Given:
"Science advances rapidly with innovation." If the 2nd letter of every 2nd word is written in order.
Solution:
Science advances rapidly with innovation.
Now take every 2nd word:
2nd word: advances → 2nd letter = d

4th word: with → 2nd letter = i
Word formed = **di**
So, **di** word is formed.
Thus, correct option is (b).

Q.4 A shopkeeper buys 5 pens at ₹12 each and 3 pencils at ₹8 each. What is the total cost?

   A. ₹84
   B. ₹88
   C. ₹90
   D. ₹96

Answer: A

Sol: Given:
A shopkeeper buys 5 pens at ₹12 each and 3 pencils at ₹8 each.
Solution:
Cost of 5 pens = 5 × ₹12 = ₹60
Cost of 3 pencils = 3 × ₹8 = ₹24
Total cost = ₹60 + ₹24 = **₹84**
So, **₹84** is the total cost.
Thus, correct option is (a).

Q.5 Rani said, "The man in the photo is my mother's brother." How is the man related to Rani?
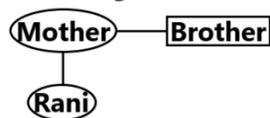
   A. Uncle
   B. Father
   C. Cousin
   D. Grandfather

Answer: A

Sol: Given:
Rani said, "The man in the photo is my mother's brother."

Symbol in Diagram	Meaning
-/ O	Female
+/ □	Male
=	Married Couple
—	Siblings
|	Difference Of Generation

From the given information blood relation diagram will be.

(Mother)——[Brother]
(Rani)

So, the man is the **uncle** of Rani.
Thus, correct option is (a).

Q.6 If # = +, @ = ×, % = -, then find the value of: (6 @ 3) % 4 # 5?

   A. 17
   B. 18
   C. 19
   D. 20

Answer: C

Sol: Given: (6 @ 3) % 4 # 5?

Given Symbol#@%

New Sign   + × -

Using **BODMAS** rule.

Operation preference wise	Symbol
Brackets	$[], , ()$
Orders, of	$(power), \sqrt{}(root), of$
Division	$\div$
Multiplication	$\times$
Addition	$+$
Subtraction	$-$

New equation: (6 × 3) - 4 + 5 = ?

18 - 4 + 5 = ?

23 - 4 = ?

? = **19**

Thus, correct option is (c).

Q.7 What will come at the place of question mark (?)

1, 2, 6, 21, 88, ?

A. 440
B. 441
C. 442
D. 445

Answer: D

Sol: **Given**: 1, 2, 6, 21, 88, ?

Logic: Numbers are multiply by natural number and add natural number from 1.

1 × 1 + 1 = 2

2 × 2 + 2 = 6

6 × 3 + 3 = 21

21 × 4 + 4 = 88

88 × 5 + 5 = 445

So, the missing term is **445**.

Thus, correct option is (d).

Q.8 Identify the assumptions that must hold true.

Statement:

Online education has expanded access to learning worldwide.

Assumptions:

I. Internet access is widely available.

II. Learners are willing to adapt to digital platforms.

A. Only I
B. Only II
C. Both I and II
D. Neither I nor II

Answer: C

Sol: **Statement**:

Online education has expanded access to learning worldwide.

Assumptions:

I. Internet access is widely available.

Without internet availability, online education cannot reach learners globally.

II. Learners are willing to adapt to digital platforms.

Even if internet access exists, expansion is not possible unless learners are ready to use online modes of learning.

So, **both I and II** are implicit.

Thus, correct option is (c).

Q.9 Select the letter-cluster that can replace (?)

HLPT, HOUA, HRZH, ?

A. HUEO
B. HUFO

C. HVEO

D. HUEP

Answer: A

Sol: Given: HLPT, HOUA, HRZH, ?

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: 1st letter same, 2nd letter + 3, 3rd letter + 5 and 4th letter + 7 place.

For, 1st letter

H is same.

For, 2nd letter

L + 3 = O, O + 3 = R, R + 3 = U

For, 3rd letter

P + 5 = U, U + 5 = Z, Z + 5 = E

For, 4th letter

T + 7 = A, A + 7 = H, H + 7 = O

So, the missing term is **HUEO**.

Thus, correct option is (a).

Q.10 Find the odd one out.

A. Lok Sabha

B. Rajya Sabha

C. Vidhan Sabha

D. Supreme Court

Answer: D

Sol: Lok Sabha, **Rajya Sabha** and **Vidhan Sabha** are legislative bodies.

Supreme Court is a judicial body, not a legislature.

Hence, **Supreme Court** is the odd one out.

Thus, correct option is (d).

Q.11 Which term is wrong in the series?

3, 6, 13, 18, 27, 38

A. 6

B. 13

C. 27

D. 38

Answer: B

Sol: Given: 3, 6, 13, 18, 27, 38

Logic: Numbers are increasing consecutive odd numbers from 3.

3 + 3 = 6

6 + 5 = 11 $\neq$ 13

11 + 7 = 18

18 + 9 = 27

27 + 11 = 38

So, the missing term is **13**.

Thus, correct option is (b).

Q.12 If 6 # 3 = 18 and 8 # 4 = 32, then 10 # 5 = ?

A. 40

B. 45

C. 50

D. 55

Answer: C

Sol: **Given**: If 6 # 3 = 18 and 8 # 4 = 32
Logic: 1st number × 2nd number = 3rd number
For, 6 # 3 = 18
6 × 3 = 18
For, 8 # 4 = 32
8 × 4 = 32
Similarly,
10 # 5 = ?
10 × 5 = **50**
Thus, correct option is (c).

Q.13 How many meaningful four-letter English words can be formed using the first, second, third and fourth letters of the word "PLANT", using each letter once?

A. One
B. Two
C. Three
D. Four

Answer: A

Sol: **Given**: PLANT
Letters given (first four of PLANT): P, L, A, N
All possible meaningful 4-letter English words using each letter once: PLAN **(meaningful)**
No other meaningful English word can be formed from these four letters.
So, **One** words can be formed using the first, second, third and fourth letters of the word.
Thus, correct option is (a).

Q.14 If '×' means '-', '-' means '+', '+' means '÷' and '÷' means '×', which of the following is correct?

A. 12 × 4 - 2 = 10
B. 15 - 3 + 6 = 18
C. 10 + 5 ÷ 3 = 4
D. 8 ÷ 4 × 2 = 6

Answer: A

Sol: **Given**:

Given Sign × - + ÷

New Sign - + ÷ ×

Using **BODMAS** rule.

Operation preference wise	Symbol
Brackets	$[], , ()$
Orders, of	$(power), \sqrt{}(root), of$
Division	$\div$
Multiplication	$\times$
Addition	$+$
Subtraction	$-$

Now, we check each options.
Option (a): 12 × 4 - 2 = 10
New equation: 12 - 4 + 2 = 10
14 - 4 = 10
10 = 10
Option (b): 15 - 3 + 6 = 18
New equation: 15 + 3 ÷ 6 = 18
18 ÷ 6 = 18
$3 \neq 18$
Option (c): 10 + 5 ÷ 3 = 4
New equation: 10 ÷ 5 × 3 = 4
2 × 3 = 4
$6 \neq 4$
Option (d): 8 ÷ 4 × 2 = 6
New equation: 8 × 4 - 2 = 6

32 - 2 = 6
30 ≠ 6
So, **12 × 4 - 2 = 10** is correct.
Thus, correct option is (a).

Q.15   In the following question, a pair of letters is given with its product of alphabetical positions. Identify the correct product. CD : 12 :: EF : ?

A. 30
B. 36
C. 42
D. 48

Answer: A

Sol: **Given**: CD : 12 :: EF : ?

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: Place value of 1st letter × 2nd number letter = Number
For, CD : 12
3 × 4 = 12
Similarly,
EF : ?
5 × 6 = 30
So, EF : **30**
Thus, correct option is (a).

Q.16   If "APPLE" is coded as "CRRNG", how is "GRAPE" written?

A. ISCRG
B. ITCRG
C. ITCSG
D. HSBRF

Answer: B

Sol: Given:
If "APPLE" is coded as "CRRNG".

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: Letters are increasing + 2 place.
For, APPLE - CRRNG
A + 2 = C, P + 2 = R, R + 2 = R, L + 2 = N, E + 2 = G
Similarly,
GRAPE - ?
G + 2 = I, R + 2 = T, A + 2 = C, P + 2 = R, E + 2 = G
So, GRAPE is coded as **ITCRG**.
Thus, correct option is (b).

Q.17   If '+' means '×', '-' means '÷', '×' means '+' and '÷' means '-', find the value of: 16 + 4 - 2 × 3

A. 25
B. 30
C. 40
D. 35

Answer: D

Sol: Given: 16 + 4 - 2 × 3?

Given Sign + - × ÷

New Sign × ÷ + -

Using BODMAS rule.

Operation preference wise	Symbol
Brackets	$[], , ()$
Orders, of	$(power), \sqrt{}(root), of$
Division	$\div$
Multiplication	$\times$
Addition	$+$
Subtraction	$-$

New equation: 16 × 4 ÷ 2 + 3 = ?

16 × 2 + 3 = ?

32 + 3 = ?

? = **35**

Thus, correct option is (d).

Q.18 If '+' means '÷', '-' means '×', '×' means '+' and '÷' means '-', then find the value of: 8 + 4 - 2 × 3 ÷ 1?

A. 5

B. 6

C. 7

D. 8

Answer: B

Sol: Given: 8 + 4 - 2 × 3 ÷ 1?

Given Sign + - × ÷

New Sign ÷ × + -

Using **BODMAS** rule.

Operation preference wise	Symbol
Brackets	$[], , ()$
Orders, of	$(power), \sqrt{}(root), of$
Division	$\div$
Multiplication	$\times$
Addition	$+$
Subtraction	$-$

New equation: 8 ÷ 4 × 2 + 3 - 1 = ?

2 × 2 + 3 - 1 = ?

4 + 3 - 1 = ?

7 - 1 = ?

? = **6**

Thus, correct option is (b).

Q.19 If FLOWER is written as GMPXFS, how is GARDEN written in the same code?

A. HBSEFO

B. HBTGFO

C. HBSDFO

D. HCTEFO

Answer: A

Sol: Given:

If FLOWER is written as GMPXFS.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: Letters are increasing + 1 place.

For, FLOWER - GMPXFS

F + 1 = G, L + 1 = M, O + 1 = P, W + 1 = X, E + 1 = F, R + 1 = S
Similarly,
GARDEN - ?
G + 1 = H, A + 1 = B, R + 1 = S, D + 1 = E, E + 1 = F, N + 1 = O
So, GARDEN is written as **HBSEFO**.
Thus, correct option is (a).

Q.20 Select the letter-cluster that can replace (?)
GEA, LIH, QMO, ?

A. QVV
B. VQU
C. UQV
D. VQV

Answer: D

Sol: Given: GEA, LIH, QMO, ?

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

Logic: 1st letter + 5, 2nd letter + 4 and 3rd letter + 7 place.
For, 1st letter
G + 5 = L, L + 5 = Q, Q + 5 = V
For, 2nd letter
E + 4 = I, I + 4 = M, M + 4 = Q
For, 3rd letter
A + 7 = H, H + 7 = O, O + 7 = V
So, the missing term is **VQV**.
Thus, correct option is (d).

Q.21 Read the statement and identify the conclusion.
Statement:
The company doubled its profits this year.
Conclusions:
I. The company performed better than last year.
II. Profits were lower in previous years.

A. Only I follows
B. Only II follows
C. Both follow
D. Neither follows

Answer: A

Sol: Statement:
The company doubled its profits this year.
Conclusions:
I. The company performed better than last year.
If profits have doubled, performance is clearly better compared to the previous year.
This conclusion definitely **follows**.
II. Profits were lower in previous years.
The statement compares only this year with last year, not with all previous years.
This conclusion does **not** necessarily follow.
So, **Only I follows**.
Thus, correct option is (a).

Q.22 A is the brother of B. C is the father of A. D is the son of C. How is D related to B?

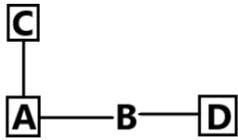A. Cousin
B. Brother
C. Uncle
D. Nephew

Answer: B

Sol: Given:

A is the brother of B.

C is the father of A.

D is the son of C.

Symbol in Diagram	Meaning
- / O	Female
+ / □	Male
=	Married Couple
—	Siblings
		Difference Of Generation

From the given information blood relation diagram will be.

So, D is the **brother** of B.

Thus, correct option is (b).

Q.23 If '#' means addition, '@' means subtraction, '$' means multiplication and '%' means division, then find the value of: 5 # 3 $ 2 @ 4 % 2?

A. 6

B. 7

C. 8

D. 9

Answer: D

Sol: Given: 5 # 3 $ 2 @ 4 % 2?

Given Symbol # @ $ %

New Sign   + - × ÷

Using **BODMAS** rule.

Operation preference wise	Symbol
Brackets	$[], , ()$
Orders, of	$(power), \sqrt{}(root), of$
Division	$\div$
Multiplication	$\times$
Addition	$+$
Subtraction	$-$

New equation: 5 + 3 × 2 - 4 ÷ 2 = ?

5 + 3 × 2 - 2 = ?

5 + 6 - 2 = ?

11 - 2 = ?

? = **9**

Thus, correct option is (d).

Q.24 If a geometric progression starts at 4 and the common ratio is 2, what is the 4th term?

A. 16

B. 24

C. 32

D. 64

Answer: C

Sol: Given:

First term (a = 4)

Common ratio (r = 2)

A geometric progression (GP) has the form:

$a, ar, ar^2, ar^3,....$

The 4th term is:
$ar^3 = 4 \times 2^3 = 4 \times 8 = \mathbf{32}$
So, **32** is the 4th term.
Thus, correct option is (c).

Q.25 **Statements**:
1. No cats are dogs.
2. Some dogs are animals.
Conclusions:
I. Some animals are not cats.
II. No dog is a cat.

A. Only I follows
B. Only II follows
C. Both follow
D. Neither follows

Answer: C

Sol: **Statements**:
1. No cats are dogs.
2. Some dogs are animals.
From the given statements possible diagram will be.

Conclusions:
I. Some animals are not cats. (**True**, no cats are dogs and some dogs are animals, so that means some animals are not cats).
II. No dog is a cat. (**True**, no cats are dogs, so that means no dog is a cat).
So, **Both follows.**
Thus, correct option is (c).

Q.26 Arrange the following Mughal rulers chronologically from earliest to latest: 1. Jahangir 2. Babur 3. Shah Jahan 4. Humayun

A. 2-4-1-3
B. 4-2-1-3
C. 2-1-4-3
D. 1-2-4-3

Answer: A

Sol: The correct answer is **(A) 2-4-1-3**

Explanation:
• **Babur (2):** Founded the Mughal Empire in 1526 after the First Battle of Panipat. (Reigned 1526–1530).
• **Humayun (4):** The son of Babur. His reign was interrupted by Sher Shah Suri. (Reigned 1530–1540 and 1555–1556).
• **Akbar:** (Not in list) The son of Humayun, who expanded the empire significantly.
• **Jahangir (1):** The son of Akbar. (Reigned 1605–1627).
• **Shah Jahan (3):** The son of Jahangir, famous for building the Taj Mahal. (Reigned 1628–1658).

Information Booster:
• **Mnemonic:** A common way to remember the Great Mughals is 'B-H-A-J-S-O' (Babur, Humayun, Akbar, Jahangir, Shah Jahan, Aurangzeb).
• **Aurangzeb:** He was the last of the powerful Mughal rulers (Reigned 1658–1707).
• **Interregnum:** The 15-year period between 1540 and 1555 saw the rule of the Suri Dynasty after Humayun was defeated at the Battle of Kannauj.

Additional Knowledge:
• **Baburnama:** The autobiography of Babur, written in Chagatai Turkic.
• **Golden Age:** Shah Jahan's reign is often considered the 'Golden Age' of Mughal architecture.
• **Din-i-Ilahi:** The syncretic religion/philosophical system introduced by Akbar (who fits between Humayun and Jahangir).

Q.27 Which Constitutional Amendment introduced the Goods and Services Tax (GST)?

A. 101st Amendment
B. 97th Amendment
C. 86th Amendment
D. 44th Amendment

Answer: A

Sol: The correct answer is **(A) 101st Amendment**

Explanation:
• The 101st Constitutional Amendment Act, 2016, paved the way for the implementation of the Goods and Services Tax (GST) in India.
• GST is an indirect tax that replaced many central and state taxes like excise duty, VAT, and service tax.
• It was launched on the midnight of 1 July 2017.
• This amendment inserted Article 246A, which gave both Parliament and State Legislatures the power to make laws with respect to GST.

Information Booster:
• **GST Council:** Provided for under Article 279A, it is the governing body that decides on tax rates and exemptions, chaired by the Union Finance Minister.
• **Dual GST:** India follows a dual GST model (CGST and SGST/UTGST) and an Integrated GST (IGST) for interstate trade.
• **One Nation, One Tax:** The primary slogan for GST, aimed at creating a common national market by removing tax barriers between states.

Additional Knowledge:
• **97th Amendment (Option B):** Deals with the promotion of Co-operative Societies.
• **86th Amendment (Option C):** Made education a Fundamental Right (Article 21A) for children aged 6-14.
• **44th Amendment (Option D):** Enacted in 1978 to undo many changes of the 42nd Amendment and strengthen democratic safeguards post-Emergency.

Q.28 In cricket, what does the term 'maiden over' mean?

A. Over with a wicket
B. Over with no runs conceded
C. Over with six balls bowled fast
D. Over ending a spell

Answer: B

Sol: The correct answer is **(B) Over with no runs conceded**

Explanation:
• A 'maiden over' occurs when a bowler bowls all six balls of an over without the batting side scoring any runs (runs from wides or no-balls would invalidate the maiden).
• It is a sign of disciplined bowling and significant pressure on the batsman.
• If a bowler takes a wicket in a maiden over, it is called a 'wicket maiden'.
• Leg-byes and byes do not count against the bowler's figures, so an over can still be a maiden if such extras occur.

Information Booster:
• **Economy Rate:** Maiden overs are the most effective way for a bowler to keep their economy rate low.
• **Records:** Bapu Nadkarni holds the record for the most consecutive maiden overs in a Test match (21 maidens, or 131 consecutive dot balls).
• **Dot Ball:** Each individual ball in which no run is scored is called a dot ball.

Additional Knowledge:
• **Wicket Over (Option A):** While taking a wicket is great, it's only a 'wicket maiden' if zero runs are also conceded.
• **Fast Bowling (Option C):** The speed of the balls is irrelevant to whether an over is a maiden.
• **Ending a Spell (Option D):** Any over could be the last in a spell, but 'maiden' specifically refers to the scoring.

Q.29 How is urban India aiming to reduce vehicular pollution?

A. Promoting diesel cars
B. Expanding electric mobility
C. Removing emission norms
D. Encouraging old vehicles

Answer: B

Sol: The correct answer is **(B) Expanding electric mobility**

Explanation:
• To combat deteriorating air quality in cities, the Indian government is aggressively promoting Electric Vehicles (EVs) through schemes like FAME (Faster Adoption and Manufacturing of Electric Vehicles).
• EVs produce zero tailpipe emissions, significantly reducing the concentration of Particulate Matter (PM) and Nitrogen Oxides (NO_{x}) in urban areas.
• Urban centers are also expanding public transport through Metro Rail and electric bus fleets to reduce the number of private internal combustion

engine (ICE) vehicles on the road.

Information Booster:
• **BS-VI Norms:** India skipped BS-V and moved directly to BS-VI emission standards in 2020 to align with global standards.
• **Scrappage Policy:** The Vehicle Scrappage Policy aims to phase out old, polluting vehicles (over 15-20 years old) to encourage the purchase of newer, cleaner models.
• **CAFE Norms:** Corporate Average Fuel Efficiency norms require manufacturers to improve the average fuel economy of their vehicle fleet.

Additional Knowledge:
• **Diesel (Option A):** Diesel vehicles are being restricted (e.g., the 10-year ban in Delhi-NCR) due to higher particulate emissions.
• **Emission Norms (Option C):** These are being made stricter, not removed.
• **Old Vehicles (Option D):** These are the primary targets for removal from the road under the National Clean Air Programme (NCAP).

Q.30   Assertion (A): GDP does not fully reflect income distribution. Reason (R): GDP measures total output, not equality.

A. Both A and R are true and R explains A
B. Both A and R are true but R does not explain A
C. A is true but R is false
D. A is false but R is true

Answer: A

Sol: The correct answer is **(A) Both A and R are true and R explains A**

Explanation:
• GDP (Gross Domestic Product) is the market value of all final goods and services produced within a country in a specific period.
• Because it is an aggregate measure, it sums up all production but does not show how the resulting income is distributed among the population.
• For example, a country could have a high GDP growth rate while the majority of that wealth goes to a small percentage of the population, leaving others in poverty.
• Reason R correctly identifies that GDP's definition and calculation focus on 'output' rather than 'distribution' or 'equity', thus explaining Assertion A.

Information Booster:
• **Gini Coefficient:** This is a standard measure used by economists to represent the income or wealth distribution of a nation's residents.
• **GDP per capita:** While slightly better, it is still an average and can be skewed by extreme wealth at the top.
• **Human Development Index (HDI):** Provides a broader view of a country's status by including life expectancy and education along with income.

Additional Knowledge:
• **Nominal vs. Real GDP:** Nominal GDP is calculated at current prices, whereas Real GDP is adjusted for inflation.
• **Lorenz Curve:** A graphical representation of the distribution of income or of wealth.

Q.31   Which of the following best represents the key feature of the Hornbill Festival of Nagaland?

A. Exclusive religious rituals inside monasteries
B. Display of tribal culture, dance, and traditional sports
C. A harvest-only farming fair
D. A coastal boat race festival

Answer: B

Sol: The correct answer is **(B) Display of tribal culture, dance, and traditional sports**

Explanation:
• The Hornbill Festival is often called the 'Festival of Festivals' and is organized by the State Government of Nagaland to promote inter-tribal interaction.
• It takes place annually from December 1st to 10th at Kisama Heritage Village, near Kohima.
• The festival showcases the traditional arts, dances, folk songs, and indigenous games of all the major tribes of Nagaland (around 17 tribes).
• It aims to revive and protect the rich culture of Nagaland and display its extravaganza and traditions.

Information Booster:
• **The Bird:** The festival is named after the Indian Hornbill, a bird that is deeply respected and featured in the folklore of most of the state's tribes.
• **Attractions:** Major highlights include the Naga chilly eating competition, stone pulling ceremonies, and traditional Naga wrestling.
• **Tourism:** It is the largest cultural tourism event in Northeast India, attracting thousands of international and domestic tourists.

Additional Knowledge:
• **Monastery Rituals (Option A):** This is more characteristic of festivals like Losar or Hemis in Ladakh/Sikkim.
• **Harvest Fair (Option C):** While many Naga festivals are harvest-based (like Moatsu or Sekrenyi), Hornbill is a comprehensive cultural showcase.
• **Boat Race (Option D):** This refers to events like 'Vallam Kali' (Snake Boat Race) in Kerala.

Q.32 Assertion (A): The Green Revolution increased wheat production.
Reason (R): High-yield variety seeds and irrigation were introduced.

A. Both A and R are true and R explains A
B. Both true but R not explanation
C. A true R false
D. A false R true

Answer: A

Sol: The correct answer is **(A) Both A and R are true and R explains A**

Explanation:
• The Green Revolution in India (started in the mid-1960s) led to a massive increase in the production of food grains, especially wheat and rice.
• This transformation was primarily driven by the 'Package Technology' which included High-Yielding Variety (HYV) seeds (like the semi-dwarf wheat varieties developed by Norman Borlaug).
• These seeds required assured irrigation, chemical fertilizers, and pesticides to achieve their full potential.
• The implementation of these inputs (Reason R) was the direct cause of the surplus production (Assertion A).

Information Booster:
• **Father of Green Revolution:** M.S. Swaminathan is known as the Father of the Green Revolution in India, while Norman Borlaug is the Father of the Green Revolution globally.
• **Primary States:** The benefits were initially concentrated in Punjab, Haryana, and Western Uttar Pradesh.
• **Impact:** India shifted from being a 'begging bowl' (dependent on food aid like PL-480) to being self-sufficient in food grains.

Additional Knowledge:
• **Second Green Revolution:** Current efforts focus on sustainable agriculture, organic farming, and increasing productivity in Eastern India.
• **Negative Impacts:** Long-term consequences include groundwater depletion, soil salinity, and loss of biodiversity due to monocropping.

Q.33 Navigation satellites under India's NavIC system are primarily placed in:

A. Polar orbit
B. Low Earth Orbit
C. Geostationary/Geosynchronous orbit
D. Sun-synchronous orbit

Answer: C

Sol: The correct answer is **(C) Geostationary/Geosynchronous orbit**

Explanation:
• NavIC (Navigation with Indian Constellation), also known as IRNSS, consists of a constellation of seven satellites.
• Out of these seven, three are in Geostationary Orbit (GEO) and four are in Geosynchronous Orbit (GSO).
• GEO satellites stay fixed over a single point on the equator, while GSO satellites have an orbital period that matches Earth's rotation, moving in an '8' shape pattern over a specific region.
• This configuration ensures that at least four satellites are always visible from any point in India to provide accurate positioning.

Information Booster:
• **Coverage:** It covers the Indian mainland and a region extending up to 1,500 km around its borders.
• **Services:** It provides two services: Standard Positioning Service (SPS) for all users and Restricted Service (RS) for authorized (military) users.
• **Global vs. Regional:** While GPS (USA) is a global system with 24+ satellites in Medium Earth Orbit (MEO), NavIC is a regional system specifically optimized for India.

Additional Knowledge:
• **Polar Orbit (Option A):** These satellites pass over the poles; used mainly for weather monitoring and mapping.
• **Low Earth Orbit (LEO) (Option B):** Satellites like Starlink or the ISS orbit here; they move very fast relative to the ground.
• **Sun-synchronous Orbit (Option D):** A type of polar orbit where the satellite passes over any given point of the Earth's surface at the same local solar time.

Q.34 Why does food cook faster in a pressure cooker?

A. Lower temperature inside cooker
B. Increased boiling point of water
C. Reduced heat transfer

D. More evaporation

Answer: B

Sol: The correct answer is **(B) Increased boiling point of water**

Explanation:
• In an open vessel, water boils at $100^\circ C$ (at sea level) because the vapor pressure equals the atmospheric pressure.
• Inside a pressure cooker, the steam is trapped, which increases the internal pressure significantly.
• According to the laws of physics, as pressure increases, the boiling point of the liquid also increases. In a typical cooker, water can reach temperatures of about $120^\circ C$ before boiling.
• This higher temperature speeds up the chemical and physical changes in the food (like breaking down fibers), resulting in faster cooking times.

Information Booster:
• **Energy Efficiency:** Because food cooks faster and less steam escapes, pressure cookers use significantly less energy than traditional boiling or steaming.
• **High Altitudes:** Pressure cookers are essential in mountain regions because low atmospheric pressure there makes water boil at lower temperatures $(e.g., 90^\circ C)$, making it hard to cook food properly.
• **Safety:** Modern cookers have multiple safety features like a pressure regulator (whistle), a safety valve, and a gasket release system.

Additional Knowledge:
• **Evaporation (Option D):** Pressure cookers actually minimize evaporation, which is why they require less water than open-pot cooking.
• **Heat Transfer (Option C):** Heat transfer is actually very efficient in a pressure cooker due to the high-temperature steam penetrating the food.
• **Vapor Pressure:** The principle is based on the relationship between pressure and the phase change temperature of water.

Q.35 Why are modern tennis rackets commonly made with graphite composites?

A. They are heavier for powerful shots
B. They reduce vibration and improve control
C. They are cheaper than wood
D. They do not bend at all

Answer: B

Sol: The correct answer is **(B) They reduce vibration and improve control**

Explanation:
• Graphite (a form of carbon) is used because it provides a high 'stiffness-to-weight' ratio.
• Unlike wood, which can warp or be inconsistent, graphite composites are highly engineered to absorb shock and vibration during a hit.
• This reduction in vibration helps prevent injuries like 'tennis elbow' and provides the player with much better control and 'feel' for the ball.
• Graphite is incredibly strong yet lightweight, allowing players to swing faster without losing structural integrity.

Information Booster:
• **Evolution:** Tennis rackets evolved from wood to steel and aluminum, before settling on carbon fiber (graphite) composites in the 1980s.
• **Stiffness:** Manufacturers can vary the stiffness of different parts of the frame to optimize power in the head and comfort in the handle.
• **Materials:** Other modern materials used in conjunction with graphite include Kevlar, Titanium, and Tungsten to further enhance durability and dampening.

Additional Knowledge:
• **Weight (Option A):** Graphite rackets are actually much lighter than old wooden ones, allowing for higher head speeds.
• **Cost (Option C):** High-end graphite composites are generally much more expensive to produce and purchase than wooden or aluminum frames.
• **Flexibility (Option D):** Rackets actually *do* need to bend slightly to return energy to the ball; a completely rigid racket would be uncomfortable and inefficient.

Q.36 In ancient Indian administration, the term 'Nagaraka' referred to:

A. Village headman
B. City superintendent
C. Military commander
D. Chief priest

Answer: B

Sol: The correct answer is **(B) City superintendent**

Explanation:
• In the Mauryan administration, as described in Kautilya's Arthashastra, the 'Nagaraka' was the officer in charge of city administration.
• His duties included maintaining law and order, keeping records of births and deaths, monitoring foreign visitors, and ensuring fire safety in the city.

• He was assisted by subordinate officers called 'Gopa' (who managed a group of households) and 'Sthanika' (who managed sectors of the city).
• The Nagaraka was essentially the equivalent of a modern-day Municipal Commissioner or City Mayor with police powers.

Information Booster:
• **Arthashastra:** This ancient Indian treatise on statecraft and economic policy is the primary source for understanding Mauryan administration.
• **Megasthenes:** The Greek ambassador Megasthenes also wrote about city administration, mentioning a committee of 30 members divided into six boards of five each.
• **Cleanliness:** The Nagaraka was also responsible for the cleanliness of the city and public health.

Additional Knowledge:
• **Village Headman (Option A):** Usually referred to as 'Gramika' or 'Gramani' in ancient texts.
• **Military Commander (Option C):** Known as 'Senapati' or 'Nayaka' in the Mauryan hierarchy.
• **Chief Priest (Option D):** Referred to as 'Purohita', who held a position of great influence in the king's council.

Q.37 India's population is approximately what percentage of the world's population?

A. 10%
B. 14%
C. 18%
D. 22%

Answer: C

Sol: The correct answer is **(C) 18%**

Explanation:
• As of 2024-2026 data, India's population is roughly 1.43 to 1.45 billion people.
• With the global population surpassing 8 billion, India accounts for approximately 17.5% to 18% of the world's total inhabitants.
• Interestingly, India occupies only about 2.4% of the world's total land area, highlighting the immense population density.
• India recently surpassed China to become the most populous country in the world.

Information Booster:
• **Demographic Dividend:** India has one of the youngest populations globally, with a median age around 28-29 years.
• **NFHS-5:** The National Family Health Survey-5 showed that India's Total Fertility Rate (TFR) has fallen below the replacement level of 2.1.
• **Density:** According to the last official census, the population density was 382 persons per sq km, but this has increased significantly since.

Additional Knowledge:
• **14% (Option B):** This was closer to India's share in the mid-20th century.
• **China:** Following India, China's share is also around 17-18% but is currently on a declining trend.
• **Projection:** The UN projects that India's population will peak around the 2060s before starting to decline.

Q.38 Statement 1: CoWIN portal was used for vaccination management.
Statement 2: Aarogya Setu provided health risk alerts.

A. Only Statement 1
B. Only Statement 2
C. Both 1 and 2
D. Neither 1 nor 2

Answer: C

Sol: The correct answer is **(C) Both 1 and 2**

Explanation:
• **Statement 1 is correct:** CoWIN (Winning over COVID) is a platform owned by the Ministry of Health and Family Welfare, India, used for registration, appointment scheduling, and issuing digital vaccine certificates.
• **Statement 2 is correct:** Aarogya Setu is a contact tracing app that used Bluetooth and GPS to alert users if they had been in close proximity to someone who tested positive for COVID-19.
• Both digital tools were pillars of India's response to the COVID-19 pandemic, leveraging technology to manage a massive public health crisis.

Information Booster:
• **Global Impact:** The CoWIN technology has been offered by India as a 'Global Public Good' to other countries for their vaccination programs.
• **Privacy:** Aarogya Setu faced significant debate regarding data privacy, leading the government to open-source the app's code for transparency.
• **Integration:** Eventually, the functions of Aarogya Setu and CoWIN were integrated to provide a seamless user experience for health status and vaccine records.

Additional Knowledge:

• **Digital India:** These apps are considered prime examples of India's digital public infrastructure (DPI).
• **Vikas:** Post-pandemic, the infrastructure of CoWIN is being repurposed for the Universal Immunization Program (U-WIN) to track all vaccinations for children and pregnant women.

Q.39 Assertion (A): A relay team was disqualified despite finishing first.
Reason (R): One runner crossed into another lane during baton exchange.

A. Both A and R are true and R explains A
B. Both A and R are true but R does not explain A
C. A is true but R is false
D. A is false but R is true

Answer: A

Sol: The correct answer is **(A) Both A and R are true and R explains A**

Explanation:
• In athletics, specifically relay races, strict rules govern lane discipline and the 'exchange zone'.
• If a runner impedes another team or leaves their assigned lane (especially in rounds where lanes must be maintained), it is grounds for immediate disqualification (DQ).
• Crossing into another lane during a baton exchange is a common violation because runners are focused on the handoff and may lose spatial awareness.
• Therefore, the reason (crossing lanes) directly explains why the consequence (disqualification) occurred, despite the team's speed.

Information Booster:
• **Exchange Zone:** The baton must be passed within a 20-meter or 30-meter (depending on the event) 'takeover zone'. Passes outside this zone lead to DQ.
• **Baton Drop:** Dropping the baton is not an automatic DQ as long as the athlete who dropped it recovers it without interfering with other runners.
• **Rule 163.3:** This is the specific World Athletics rule regarding lane infringement.

Additional Knowledge:
• **Stepping on Line:** Even stepping on the inside lane line during a curve can lead to disqualification in many track events.
• **Interference:** If a runner jostles or obstructs another athlete, the referee has the power to disqualify the offending runner or team.

Q.40 Statements about Bihu dance:
1. It is associated with Assam.

2. It celebrates the harvest season.

A. Only 1 correct
B. Only 2 correct
C. Both 1 & 2 correct
D. Neither 1 nor 2 correct

Answer: C

Sol: The correct answer is **(C) Both 1 & 2 correct**

Explanation:
• **Statement 1 is correct:** Bihu is the most popular folk dance of Assam, performed by both men and women.
• **Statement 2 is correct:** It is intrinsically linked to the Bihu festival, which celebrates various stages of the agricultural cycle, particularly the harvest.
• The dance is characterized by brisk steps, rapid hand movements, and rhythmic swaying of the hips.
• Traditional attire for Bihu includes the 'Muga Silk' Mekhela Chador for women and 'Gamosa' for men.

Information Booster:
• **Three Types of Bihu:** There are three Bihu festivals in Assam: 'Rongali' or 'Bohag Bihu' (Spring/New Year), 'Kongali' or 'Kati Bihu' (Autumn), and 'Bhogali' or 'Magh Bihu' (Harvest).
• **Instruments:** Common instruments used include the Dhol (drum), Tal (cymbals), Pepa (horn made of buffalo horn), and Gogona (bamboo instrument).
• **Guinness World Record:** In 2023, Assam created a world record by having over 11,000 Bihu dancers and drummers perform together at a single venue.

Additional Knowledge:
• **Sattriya:** While Bihu is a folk dance, Sattriya is the Classical dance form of Assam, introduced by the saint Srimanta Sankardev.
• **Other Harvest Dances:** Examples include Bhangra (Punjab), Pongal (Tamil Nadu celebrations), and Onam (Kerala), each having its own unique cultural identity.

Q.41 Who received the Padma Shri for promoting traditional Puppetry art in Rajasthan?

A. Ram Chandra Bhatt
B. Mahipat Kavi
C. Shankar Lal Meghwal
D. Devendra Sharma

Answer: A

Sol: The correct answer is **(A) Ram Chandra Bhatt**

Explanation:
• Ram Chandra Bhatt is a renowned puppeteer from Jaipur, Rajasthan, who was awarded the Padma Shri for his significant contributions to the field of traditional arts.
• He belongs to a family that has been practicing the 'Kathputli' (string puppet) art for generations.
• He has been instrumental in taking Rajasthani puppetry to international stages, performing in numerous countries.
• His work focuses on preserving the traditional stories while incorporating modern themes to keep the art relevant for contemporary audiences.

Information Booster:
• **Kathputli:** It is a string puppet theater, native to Rajasthan, and is the most popular form of Indian puppetry. The word 'Kath' means wood and 'Putli' means a doll.
• **Bhatt Community:** The traditional puppeteers of Rajasthan belong to the Bhatt community, who claim divine origin for their craft.
• **Padma Awards:** These are among the highest civilian honors in India, announced annually on Republic Day.

Additional Knowledge:
• **Mahipat Kavi (Option B):** A noted puppeteer from Gujarat, known for 'Shadow Puppetry' or Ravanchhaya, but not specifically the Rajasthan Padma Shri recipient in this context.
• **Devendra Sharma (Option D):** Awarded Padma Shri for his contribution to 'Nautanki' (folk theater), not puppetry.
• **Shankar Lal Meghwal (Option C):** Often associated with folk music or local crafts, but Bhatt is the primary name associated with the recent recognition of Rajasthani puppetry at the Padma level.

Q.42 The President of India promulgates ordinances under:

A. Article 110
B. Article 123
C. Article 356
D. Article 368

Answer: B

Sol: The correct answer is **(B) Article 123**

Explanation:
• Article 123 of the Indian Constitution grants the President the power to promulgate ordinances during the recess of Parliament.
• These ordinances have the same force and effect as an Act of Parliament but are temporary in nature.
• The President can only issue an ordinance when both Houses of Parliament are not in session and if he is satisfied that circumstances exist which render it necessary for him to take immediate action.
• Every ordinance must be laid before both Houses of Parliament when they reassemble and ceases to operate after six weeks from the reassembly

unless approved earlier.

Information Booster:
• **Maximum Life:** The maximum life of an ordinance can be six months and six weeks (as the maximum gap between two sessions of Parliament is six months).
• **Governor's Power:** Under Article 213, the Governor of a state has similar powers to promulgate ordinances when the state legislature is not in session.
• **Judicial Review:** The satisfaction of the President while issuing an ordinance can be challenged in court if it is proved to be mala fide.

Additional Knowledge:
• **Article 110 (Option A):** Defines 'Money Bills' and the special procedure regarding them in Parliament.
• **Article 356 (Option C):** Deals with 'President's Rule' in a state in case of the failure of constitutional machinery.
• **Article 368 (Option D):** Grants Parliament the power to amend the Constitution and specifies the procedure for it.

Q.43 Match the feature with boundary: 1. Rift valley 2. Island arc 3. Strike-slip fault

A. 1-Divergent, 2-Convergent, 3-Transform
B. 1-Convergent, 2-Transform, 3-Divergent
C. 1-Transform, 2-Divergent, 3-Convergent
D. 1-Divergent, 2-Transform, 3-Convergent

Answer: A

Sol: The correct answer is **(A) 1-Divergent, 2-Convergent, 3-Transform**

Explanation:
• **Divergent Boundary (1):** Occurs where plates pull apart. This stretching of the crust creates Rift Valleys (e.g., East African Rift) and mid-ocean ridges.
• **Convergent Boundary (2):** Occurs where plates collide. When two oceanic plates or an oceanic and continental plate converge, subduction occurs, leading to the formation of volcanic Island Arcs (e.g., Japan or Aleutian Islands).
• **Transform Boundary (3):** Occurs where plates slide past each other horizontally. This movement creates Strike-slip faults (e.g., the San Andreas Fault).

Information Booster:
• **Plate Tectonics:** This theory describes the large-scale motion of seven large plates and the movements of a larger number of smaller plates of Earth's lithosphere.
• **Asthenosphere:** The lithospheric plates float on the semi-fluid layer below them called the asthenosphere.
• **Seismicity:** Transform boundaries are famous for shallow-focus earthquakes, while subduction zones (convergent) can produce the deepest and most powerful earthquakes.

Additional Knowledge:
• **Fold Mountains:** Formed at continental-continental convergent boundaries (e.g., the Himalayas).
• **Sea-floor Spreading:** A process that occurs at divergent boundaries in the ocean, creating new oceanic crust.

Q.44 Consider the statements: 1. Finance Commission is constituted every five years. 2. It is mentioned under Article 280.

A. Only 1
B. Only 2
C. Both 1 and 2
D. Neither 1 nor 2

Answer: C

Sol: The correct answer is **(C) Both 1 and 2**

Explanation:
• **Statement 1 is correct:** The Finance Commission is a constitutional body that is usually constituted by the President of India every five years or at such earlier time as the President considers necessary.
• **Statement 2 is correct:** Article 280 of the Indian Constitution provides for a Finance Commission to recommend the distribution of financial resources between the Union and the States.
• Its recommendations are advisory in nature and not binding on the government.
• The commission consists of a chairman and four other members appointed by the President.

Information Booster:
• **16th Finance Commission:** Recently, the government constituted the 16th Finance Commission with Arvind Panagariya as its Chairman.
• **Core Function:** The main job is to define the vertical and horizontal tax devolution (how much money goes to states and how it's divided among them).
• **Qualifications:** The Constitution authorizes Parliament to determine the qualifications of members of the commission and the manner of their selection.

Additional Knowledge:
• **Article 281:** Requires the President to lay the recommendations of the Finance Commission before each House of Parliament.
• **State Finance Commission:** Under Articles 243-I and 243-Y, the Governor of a state constitutes a State Finance Commission every five years to review the financial position of Panchayats and Municipalities.

Q.45 Which of the following is a classical percussion instrument strongly associated with Andhra Pradesh?

A. Ghatam
B. Santoor
C. Rabab
D. Algoza

Answer: A

Sol: The correct answer is **(A) Ghatam**

Explanation:
• The Ghatam is one of the most ancient percussion instruments of India, essentially a clay pot with a narrow mouth.
• It is a staple in Carnatic music performances, which is the classical music tradition predominant in South Indian states including Andhra Pradesh, Telangana, Tamil Nadu, and Karnataka.
• The player uses the fingers, thumbs, palms, and heels of the hands to strike the outer surface of the pot.
• While it is used across South India, it has deep roots and famous exponents from the Telugu-speaking regions and Tamil Nadu.

Information Booster:
• **Material:** A Ghatam is not an ordinary pot; it is made of special clay baked with iron filings to give it a sharp, metallic ring.
• **Adi Tala:** It is often used to provide rhythmic accompaniment alongside the Mridangam.
• **Famous Players:** T.H. 'Vikku' Vinayakram is perhaps the most world-renowned Ghatam player.

Additional Knowledge:
• **Santoor (Option B):** A stringed instrument associated with the folk music of Jammu and Kashmir.
• **Rabab (Option C):** A stringed instrument (lute) popular in Afghanistan and North-Western India (Punjab/Kashmir).
• **Algoza (Option D):** A double flute used in Punjabi and Sindhi folk music, not a percussion instrument.

Q.46 How many storeys are there in the main vimana (tower) of the Brihadeeswara Temple at Thanjavur?

A. 9
B. 11
C. 13
D. 15

Answer: C

Sol: The correct answer is **(C) 13**

Explanation:
• The Brihadeeswara Temple, also known as Rajarajeswaram, features a massive pyramidal tower known as the 'Vimana'.
• This Vimana rises to a height of about 66 meters (216 feet) and consists of 13 tapering storeys (talas).
• At the top of the tower sits a single block of granite stone called the 'Kumbam' or 'Shikhara', which is estimated to weigh around 80 tons.
• Built by Raja Raja Chola I between 1003 and 1010 AD, it is a masterpiece of Dravidian architecture.

Information Booster:
• **UNESCO World Heritage Site:** It is part of the 'Great Living Chola Temples' UNESCO site.
• **Shadow Mystery:** A popular claim is that the Vimana does not cast a shadow on the ground at noon during any part of the year, though this is a subject of much debate and observation.
• **Nandi:** The temple also features one of the largest monolithic statues of Nandi (the sacred bull) in India at the entrance.

Additional Knowledge:
• **Dravidian Style:** Characteristic features include the Vimana (main tower), Gopurams (gateways), and large temple tanks.
• **Material:** The temple is made entirely of granite, which was not locally available and had to be transported from at least 60 km away.
• **Inscriptions:** The walls are covered with detailed inscriptions recording the gifts given to the temple and the administrative details of the Chola empire.

Q.47 Who is the author of the novel 'The Guide'?

A. R.K. Narayan

B. Khushwant Singh

C. Chetan Bhagat

D. Vikram Seth

Answer: A

Sol: The correct answer is **(A) R.K. Narayan**

Explanation:

• 'The Guide' is a 1958 novel written in English by the legendary Indian author R.K. Narayan.

• Set in the fictional town of Malgudi, the story revolves around Raju, a tour guide who undergoes a spiritual transformation to become a spiritual guru and eventually a martyr.

• The novel brought R.K. Narayan the Sahitya Akademi Award in 1960, making it the first English work to receive this prestigious honor.

• It was later adapted into a highly successful 1965 film starring Dev Anand and Waheeda Rehman.

Information Booster:

• **Malgudi:** This fictional South Indian town is the setting for almost all of Narayan's works, symbolizing the simplicity and complexity of Indian life.

• **Sahitya Akademi:** Narayan was one of the earliest Indian writers in English to gain international fame, alongside Raja Rao and Mulk Raj Anand.

• **Style:** His writing is known for its irony, humor, and keen observation of the middle-class social structure.

Additional Knowledge:

• **Khushwant Singh (Option B):** Best known for his novel 'Train to Pakistan', which depicts the partition of India in 1947.

• **Chetan Bhagat (Option C):** A contemporary author known for commercial fiction like 'Five Point Someone' and '2 States'.

• **Vikram Seth (Option D):** Famous for his massive novel 'A Suitable Boy', one of the longest novels ever published in a single volume in English.

Q.48 What is the main objective of the International Solar Alliance?

A. Promote nuclear energy

B. Encourage solar energy adoption globally

C. Regulate oil prices

D. Fund coal projects

Answer: B

Sol: The correct answer is **(B) Encourage solar energy adoption globally**

Explanation:

• The International Solar Alliance (ISA) is an action-oriented, member-driven, collaborative platform for increased deployment of solar energy technologies.

• Its primary goal is to help developing countries reduce their carbon footprint and increase energy access by making solar energy affordable and scalable.

• It focuses on mobilizing more than $1,000 billion of investment needed by 2030 for the massive deployment of solar energy.

• It aims to reduce the cost of finance and the cost of solar technology through collective demand aggregation.

Information Booster:

• **Origin:** Launched by the Prime Minister of India and the President of France on 30 November 2015 at the COP21 in Paris.

• **Headquarters:** The ISA is headquartered in Gurugram, Haryana, India, making it the first international intergovernmental organization headquartered in India.

• **Membership:** Initially launched for 'Suryaputra' countries (located between the Tropics), membership is now open to all UN member states.

Additional Knowledge:

• **Nuclear Energy (Option A):** This is promoted by organizations like the International Atomic Energy Agency (IAEA), not the ISA.

• **Oil Prices (Option C):** Regulating oil prices and production is the primary function of OPEC (Organization of the Petroleum Exporting Countries).

• **Coal Projects (Option D):** Global climate goals are currently focused on phasing out coal rather than funding new projects, which is opposite to the ISA's mission.

Q.49 Which biomolecule forms the basic structure of enzymes?

A. Lipids

B. Proteins

C. Carbohydrates

D. Nucleic acids

Answer: B

Sol: The correct answer is **(B) Proteins**

Explanation:
• Enzymes are biological catalysts that speed up chemical reactions in living organisms without being consumed in the process.
• Almost all enzymes are made of proteins, which are long chains of amino acids folded into specific three-dimensional shapes.
• The 'active site' of an enzyme is a specific region where substrate molecules bind and undergo a chemical reaction.
• The shape of an enzyme is crucial; if it is denatured (unfolded) by heat or pH changes, it loses its catalytic activity.

Information Booster:
• **Ribozymes:** While most enzymes are proteins, some RNA molecules also act as catalysts; these are called ribozymes.
• **Specificity:** Enzymes are highly specific, meaning each enzyme typically catalyzes only one particular reaction (Lock and Key hypothesis).
• **Cofactors:** Some enzymes require non-protein components called cofactors (like metal ions) or coenzymes (like vitamins) to function.

Additional Knowledge:
• **Lipids (Option A):** These include fats and oils and are primarily used for energy storage and forming cell membranes.
• **Carbohydrates (Option C):** These are sugars and starches used for immediate energy (glucose) and structural support in plants (cellulose).
• **Nucleic acids (Option D):** DNA and RNA are nucleic acids responsible for storing and transferring genetic information.

Q.50 Which district–state pair is correctly matched for bauxite reserves?

A. Koraput – Odisha
B. Gaya – Bihar
C. Jalgaon – Maharashtra
D. Hisar – Haryana

Answer: A

Sol: The correct answer is **(A) Koraput – Odisha**

Explanation:
• Odisha is the leading producer of Bauxite in India, accounting for over 50% of the country's total production.
• The Koraput district, specifically the Panchpatmali deposits, is home to one of the largest bauxite mines in Asia (operated by NALCO).
• Bauxite is the primary ore used to produce Aluminum.
• Other major bauxite-producing areas in Odisha include Rayagada, Kalahandi, and Sambalpur.

Information Booster:
• **Bauxite Formation:** It is formed by the decomposition of a wide variety of rocks rich in aluminum silicates under tropical climatic conditions.
• **States:** After Odisha, other major producers are Gujarat (Jamnagar/Kutch), Jharkhand (Lohardaga), and Chhattisgarh (Amarkantak plateau).
• **NALCO:** National Aluminium Company Limited (NALCO) has its massive refinery and smelter operations centered around the Odisha bauxite belt.

Additional Knowledge:
• **Gaya (Option B):** Known for mica and some agricultural limestone, but not a major bauxite hub.
• **Jalgaon (Option C):** Famous for bananas and gold trade, not bauxite mining.
• **Hisar (Option D):** An industrial and agricultural hub in Haryana, which lacks significant metallic mineral reserves like bauxite.

Q.51 The average height of 15 students is 160 cm. If two students leave, the new average becomes 159 cm. What is the average height of the two students who left?

A. 164.5 cm
B. 166.5 cm
C. 168.5 cm
D. 170.5 cm

Answer: B

Sol: Given:

Average height of 15 students $= 160$

Number of students $= 15$

New average height $= 159$

Remaining students $= 13$

Formula Used:

Total $=$ Average $\times$ Number

Solution:

$15 \times 160 = 2400$

$13 \times 159 = 2067$

$2400 - 2067 = 333$

Average of two students $= \dfrac{333}{2} = 166.5$

Final Answer:

166.5 cm

Q.52 If P : Q = 5 : 3, Q : R = 4 : 7, and R : S = 2 : 3, find the ratio P : S.

A. 20 : 63
B. 40 : 63
C. 35 : 72
D. 15 : 28

Answer: B

Sol: **Given:**

$P : Q = 5 : 3, Q : R = 4 : 7, R : S = 2 : 3$

Formula Used:

$A : B = x : y, B : C = m : n => A : C = xm : yn$

Solution:

$P : Q = 5 : 3 => 20 : 12$

$Q : R = 4 : 7 => 12 : 21$

$\therefore P : R = 20 : 21$

$R : S = 2 : 3 => 42 : 63$

$P : R = 40 : 42$

$\therefore P : S = 40 : 63$

Final Answer:

$P : S = 40 : 63$

Q.53 Simplify: $\left(2.5 + \dfrac{5}{8} \right)^2 - \left(\dfrac{7}{4} \times 2.4 \right)$

A. 5.5656
B. 6.2225
C. 7.0625
D. 8.0625

Answer: A

Sol: **Given:**

$\left(2.5 + \dfrac{5}{8} \right)^2 - \left(\dfrac{7}{4} \times 2.4 \right)$

Solution:

$$\left(\frac{5}{2} + \frac{5}{8}\right)^2 - \left(\frac{7}{4} \times \frac{12}{5}\right)$$

$$= \left(\frac{20}{8} + \frac{5}{8}\right)^2 - \left(\frac{84}{20}\right)$$

$$= \left(\frac{25}{8}\right)^2 - \frac{21}{5}$$

$$= \frac{625}{64} - \frac{21}{5}$$

$$= \frac{3125}{320} - \frac{1344}{320}$$

$$= \frac{1781}{320}$$

$$= 5.565625$$

Q.54 Table: Quarterly Revenue.

Item	Q1	Q2	Q3	Q4
Product A	45	55	50	60
Product B	70	72	68	75

What is the average quarterly revenue of Product B?

A. Rs. 71.25 lakhs
B. Rs. 71.5 lakhs
C. Rs. 72 lakhs
D. Rs. 72.5 lakhs

Answer: A

Sol: Given:

$Q1 = 70, Q2 = 72, Q3 = 68, Q4 = 75$

Formula Used:

$$\text{Average} = \frac{\text{Sum of observations}}{\text{Number of observations}}$$

Solution:

$70 + 72 + 68 + 75 = 285$

Number of quarters $= 4$

$$\text{Average} = \frac{285}{4} = 71.25$$

Final Answer:

71.25

Q.55 Simplify: $\left(\frac{9}{4} \div \frac{18}{7}\right) \times \left(\frac{8}{3} \div \frac{4}{9}\right)$

A. 21/4
B. 7/2
C. 9/2
D. 4/3

Answer: A

Sol: **Given:**

$$\left(\frac{9}{4} \div \frac{18}{7}\right) \times \left(\frac{8}{3} \div \frac{4}{9}\right)$$

Solution:

$$\left(\frac{9}{4} \div \frac{18}{7}\right) \times \left(\frac{8}{3} \div \frac{4}{9}\right)$$

$$= \left(\frac{9}{4} \times \frac{7}{18}\right) \times \left(\frac{8}{3} \div \frac{4}{9}\right)$$

$$= \frac{63}{72} \times \left(\frac{8}{3} \div \frac{4}{9}\right)$$

$$= \frac{7}{8} \times \left(\frac{8}{3} \times \frac{9}{4}\right)$$

$$= \frac{7}{8} \times \frac{72}{12}$$

$$= \frac{7}{8} \times 6$$

$$= \frac{42}{8}$$

$$= \frac{21}{4}$$

Q.56 A circular disc of radius 6 cm is inscribed in a square. What is the approximate area of the remaining portion of the square?

A. 28.30 cm²
B. 45.75 cm²
C. 30.96 cm²
D. 72.50 cm²

Answer: C

Sol: **Given:**

$r = 6$

Formula Used:

Side of square $= 2r$

Area of square $= a^2$

Area of circle $= \pi r^2$

Solution:

$a = 2 \times 6 = 12$

Area of square $= 12^2 = 144$

Area of circle $= \pi \times 6^2 = 36\pi$

$36 \times 3.14 = 113.04$

Remaining area $= 144 - 113.04 = 30.96$

Final Answer:

30.96 cm^2

Q.57 A manufacturer offers a product to a retailer at a 25% discount on the marked price. An additional shipping charge of 8% is applied. The retailer sells for Rs. 2400 more, earning a 35% profit. What was the original marked price?

A. Rs. 8,465.60
B. Rs. 9,127.45
C. Rs. 10,050.76
D. Rs. 11,254.90

Answer: A

Sol: **Given:**

Discount $= 25\%$

Shipping charge $= 8\%$

Profit % $= 35\%$

Profit $= 2400$

Formula Used:

Discounted Price $= \text{MP}\left(1 - \dfrac{d}{100}\right)$

$\text{CP} = \text{Discounted Price}\left(1 + \dfrac{s}{100}\right)$

$\text{Profit} = \text{CP} \times \dfrac{\text{Profit \%}}{100}$

Solution:

Let MP $= M$

Discounted Price $= 0.75M$

$\text{CP} = 0.75M \times 1.08 = 0.81M$

$0.35 \times \text{CP} = 2400$

$\text{CP} = \dfrac{2400}{0.35} = 6857.14$

$0.81M = 6857.14$

$$M = \frac{6857.14}{0.81} = 8465.6$$

Final Answer:

Marked Price $= ₹8465.6$

Q.58 How many smaller hemispheres with radius 4 cm can be formed by melting a hemisphere with radius 16 cm?

A. 16
B. 32
C. 48
D. 64

Answer: D

Sol: Given:

$R = 16$

$r = 4$

Concept Used:

Volume remains constant during melting

Formula Used:

$V = \frac{2}{3}\pi r^3$

Solution:

$\frac{2}{3}\pi(16)^3 = n \times \frac{2}{3}\pi(4)^3$

$n = \left(\frac{16}{4}\right)^3$

$n = 4^3$

$n = 64$

Final Answer:

64

Q.59 A cone and a hemisphere have the same radius. Their combined height is 24 cm. If both have equal volumes, find the radius.

A. 8 cm
B. 9 cm
C. 10 cm
D. 12 cm

Answer: A

Sol: Given:

Cone and hemisphere have same radius r

Combined height $= 24$

Volumes are equal

Concept Used:

Volume of cone and hemisphere

Formula Used:

$V_c = \dfrac{1}{3}\pi r^2 h$

$V_h = \dfrac{2}{3}\pi r^3$

Solution:

$\dfrac{1}{3}\pi r^2 h = \dfrac{2}{3}\pi r^3$

$h = 2r$

$h + r = 24$

$2r + r = 24$

$3r = 24$

$r = 8$

Final Answer:

8 cm

Q.60 A trader buys 8 items for the price of 5 items. If he sells each item at a 5% discount on its marked price, what is his profit percentage?

A. 56%
B. 58%
C. 60%
D. 52%

Answer: D

Sol: **Given:**

8 items bought for the price of 5 items

Discount = 5%

Formula Used:

$\mathrm{SP} = \mathrm{MP}\left(1 - \dfrac{\text{Discount}}{100}\right)$

Solution:

Let MP of 1 item = 100

SP of 1 item = $100 \times \dfrac{95}{100} = 95$

CP of 8 items = $5 \times 100 = 500$

SP of 8 items = $8 \times 95 = 760$

Profit = $760 - 500 = 260$

Profit % = $\dfrac{260}{500} \times 100 = 52\%$

Final Answer:

52%

Q.61 A tank contains 120 liters of pure juice. 15 liters are drawn and replaced by water twice. What is the ratio of juice to water in the final mixture?

A. 49 : 15
B. 81 : 39
C. 73 : 47
D. 65 : 55

Answer: A

Sol: **Given:**

Total quantity $= 120$

Quantity replaced each time $= 15$

Number of operations $= 2$

Formula Used:

Final quantity $= V \left(1 - \dfrac{x}{V} \right)^n$

Solution:

$120 \left(1 - \dfrac{15}{120} \right) = 105$

$105 \left(1 - \dfrac{15}{120} \right) = \dfrac{11025}{120} = 91.875$

Water $= 120 - 91.875 = 28.125$

$91.875 : 28.125 = 49 : 15$

Final Answer:

$49 : 15$

Q.62 In how many years will Rs. 80,000 become Rs. 1,06,480 at 10% compound interest per annum?

A. 3
B. 4
C. 5
D. 7

Answer: A

Sol:
Given:

$P = 80000$

$A = 106480$

$R = 10\%$

Time $= n$ years

Formula Used:

$A = P \left(1 + \dfrac{R}{100} \right)^n$

Solution:

$106480 = 80000 \left(1 + \dfrac{10}{100} \right)^n$

$106480 = 80000(1.1)^n$

$$\frac{106480}{80000} = (1.1)^n$$

$$1.331 = (1.1)^n$$

$$1.1^3 = 1.331$$

$$n = 3$$

Final Answer:

3 years

Q.63 The ratio of profit to the cost price of an item is 3 : 8. What is the ratio of selling price to profit?

A. 11 : 3
B. 9 : 4
C. 7 : 5
D. 12 : 7

Answer: A

Sol: **Given:**

Profit : Cost Price $= 3 : 8$

Formula Used:

$SP = CP + P$

Solution:

Let Profit $= 3x$, Cost Price $= 8x$

Selling Price $= 8x + 3x = 11x$

SP : Profit $= 11x : 3x = 11 : 3$

Final Answer:

11 : 3

Q.64 Two circles have radii 14 cm and 6 cm. If the length of a direct common tangent is 24 cm, what is the distance between their centers?

A. $9\sqrt{10}$ cm
B. $8\sqrt{10}$ cm
C. $12\sqrt{10}$ cm
D. 8 cm

Answer: B

Sol: **Given:**

$R = 14$

$r = 6$

Length of direct common tangent $= 24$

Concept Used:

Direct common tangent of two circles

Formula Used:

$L^2 = d^2 - (R - r)^2$

Solution:

$24^2 = d^2 - (14 - 6)^2$

$576 = d^2 - 64$

$d^2 = 640$

$d = \sqrt{640} = 8\sqrt{10}$

Final Answer:

$8\sqrt{10}$ cm

Q.65 A cone has a base area of 78.5 cm² and height 12 cm. What is its volume? (Use π ≈ 3.14)

A. 314 cm³
B. 392 cm³
C. 471 cm³
D. 628 cm³

Answer: A

Sol: **Given:**

Base area $= 78.5$

$h = 12$

$\pi = 3.14$

Formula Used:

Volume of a cone $= \dfrac{1}{3} \times \text{Base Area} \times h$

Solution:

$V = \dfrac{1}{3} \times 78.5 \times 12$

$V = \dfrac{942}{3}$

$V = 314$

Final Answer:

314 cm^3

Q.66 In triangle PQR, medians PX, QY, and RZ intersect at the centroid O. What is the ratio of the area of triangle PQO to the area of triangle PQR?

A. 1 : 2
B. 1 : 3
C. 2 : 3
D. 1 : 4

Answer: B

Sol: **Given:**

$\triangle PQR$
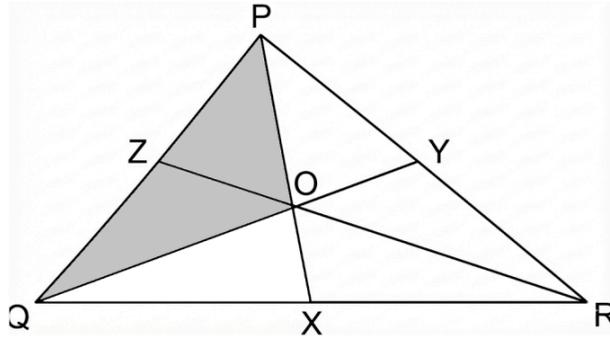
Medians intersect at centroid O

Concept Used:

Centroid divides median in the ratio 2 : 1

Formula Used:

Ratio of areas = Ratio of corresponding heights

Solution:

Distance of O from $PQ = \dfrac{1}{3}$ distance of R from PQ

Triangles PQO and PQR have same base PQ

$$\frac{\text{Area of } \triangle PQO}{\text{Area of } \triangle PQR} = \frac{1}{3}$$

Final Answer:

1 : 3

Q.67 A solid metal sphere of radius 15 cm is melted and recast into 27 identical smaller spheres. What is the ratio of the surface area of the original sphere to the total surface area of all 27 smaller spheres?

A. 1 : 3
B. 1 : 6
C. 1 : 9
D. 1 : 15

Answer: A

Sol: **Given:**

$R = 15$

Number of smaller spheres = 27

Concept Used:

Volume remains constant during melting

Formula Used:

$$V = \frac{4}{3}\pi r^3$$

$$S = 4\pi r^2$$

Solution:

$$\frac{4}{3}\pi(15)^3 = 27 \times \frac{4}{3}\pi r^3$$

$$15^3 = 27 r^3$$

$$r^3 = 125$$

$$r = 5$$

Surface area of original sphere $= 4\pi(15)^2 = 900\pi$

Surface area of one small sphere $= 4\pi(5)^2 = 100\pi$

Total surface area of 27 spheres $= 2700\pi$

$900\pi : 2700\pi = 1 : 3$

Final Answer:

$1 : 3$

Q.68   In ΔMNO, line segment LK is parallel to NO. If the ratio of area of ΔMLK to trapezoid LKNO is 9 : 40, what is the ratio of ML to LN?

  A. 3 : 4
  B. 3 : 7
  C. 4 : 5
  D. 4 : 9

Answer: A

Sol: **Given:**

$\triangle MNO$

$LK \parallel NO$

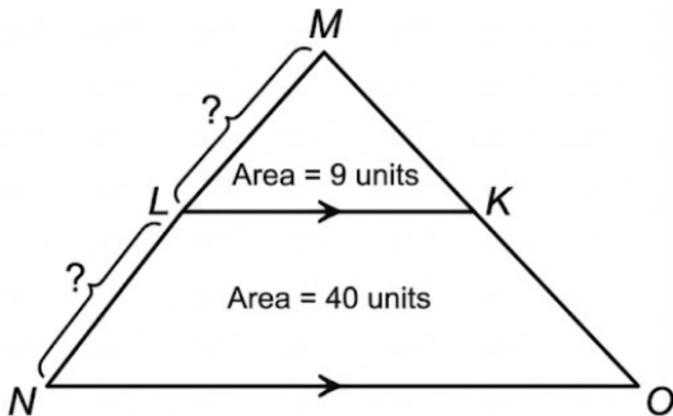Area of $\triangle MLK$: Area of trapezoid $LKNO = 9 : 40$

Concept Used:

Ratio of areas of similar triangles equals square of ratio of sides

Formula Used:

$$\frac{\text{Area of smaller triangle}}{\text{Area of whole triangle}} = \left(\frac{\text{Corresponding side}}{\text{Whole side}}\right)^2$$

Solution:

Let area of $\triangle MLK = 9x$

Area of trapezoid $LKNO = 40x$

Area of $\triangle MNO = 49x$

$$\frac{\text{Area of } \triangle MLK}{\text{Area of } \triangle MNO} = \frac{9}{49}$$

$$\left(\frac{ML}{MN}\right)^2 = \frac{9}{49}$$

$$\frac{ML}{MN} = \frac{3}{7}$$

$$LN = MN - ML$$

$$ML : LN = 3 : 4$$

Final Answer:

$3 : 4$

Q.69 A right triangle has sides 5, 12, and 13. A smaller similar triangle is inscribed with a perimeter of 10. What is its area?

A. 2.5
B. 3.33
C. 5
D. 7.5

Answer: B

Sol: **Given:**

Sides of right triangle $= 5, 12, 13$

Perimeter of original triangle $= 30$

Perimeter of smaller triangle $= 10$

Concept Used:

Ratio of perimeters equals ratio of sides

Ratio of areas equals square of ratio of sides

Formula Used:

$$\frac{P_1}{P_2} = \frac{S_1}{S_2}$$

$$\frac{A_1}{A_2} = \left(\frac{S_1}{S_2}\right)^2$$

$$\text{Area} = \frac{1}{2}ab$$

Solution:

$$\frac{10}{30} = \frac{1}{3}$$

$$\text{Ratio of sides} = \frac{1}{3}$$

$$\text{Area of original triangle} = \frac{1}{2} \times 5 \times 12 = 30$$

$$\text{Ratio of areas} = \left(\frac{1}{3}\right)^2 = \frac{1}{9}$$

$$\text{Area of smaller triangle} = 30 \times \frac{1}{9} = \frac{10}{3}$$

Final Answer:

$$\frac{10}{3} = 3.33$$

Q.70 Simplify: $\left(\left(2.5 + \frac{3}{5}\right) \div \left(3.5 - \frac{1}{4}\right)\right) + 0.75$

A. 1.3714
B. 1.7038
C. 3.1429
D. 4.1429

Answer: B

Sol: **Given:**

$$\left(\left(2.5 + \frac{3}{5}\right) \div \left(3.5 - \frac{1}{4}\right)\right) + 0.75$$

Solution:

$$\left(\left(\frac{5}{2} + \frac{3}{5}\right) \div \left(\frac{7}{2} - \frac{1}{4}\right)\right) + \frac{3}{4}$$

$$= \left(\left(\frac{25}{10} + \frac{6}{10}\right) \div \left(\frac{14}{4} - \frac{1}{4}\right)\right) + \frac{3}{4}$$

$$= \left(\frac{31}{10} \div \frac{13}{4}\right) + \frac{3}{4}$$

$$= \left(\frac{31}{10} \times \frac{4}{13}\right) + \frac{3}{4}$$

$$= \frac{124}{130} + \frac{3}{4}$$

$$= \frac{62}{65} + \frac{3}{4}$$

$$= \frac{248}{260} + \frac{195}{260}$$

$$= \frac{443}{260}$$

$$\approx 1.7038$$

Q.71 A container holds three liquids X, Y, and Z in the ratio 3 : 4 : 5. If 8 liters of X, 10 liters of Y, and a certain amount of Z are added, the new ratio becomes 7 : 9 : 12 . Find the quantity (in liters) of Z added.

A. 11 liters
B. 14 liters
C. 16 liters
D. 18 liters

Answer: B

Sol: **Given:**

$X : Y : Z = 3 : 4 : 5$

$X = 8, Y = 10, Z = x$

New ratio $= 7 : 9 : 12$

Formula Used:

$a : b : c => ka : kb : kc$

Solution:

$X = 3k, Y = 4k, Z = 5k$

$3k + 8, 4k + 10, 5k + x$

$$\frac{3k + 8}{4k + 10} = \frac{7}{9}$$

$9(3k + 8) = 7(4k + 10)$

$27k + 72 = 28k + 70$

$k = 2$

$$\frac{3k + 8}{5k + x} = \frac{7}{12}$$

$$\frac{14}{10 + x} = \frac{7}{12}$$

$10 + x = 24$

$x = 14$

Final Answer:

$Z = 14$ liters

Q.72 Priya started a business with Rs. 75,000. Ravi joined 6 months later with Rs. 50,000. At what ratio will they share the profit after two years?

A. 2 : 5
B. 5 : 4
C. 2 : 1
D. 9 : 7

Answer: C

Sol: Given:

Priya's investment $= 75000$

Time $= 24$ months

Ravi's investment $= 50000$

Time $= 18$ months

Concept Used:

Profit is proportional to investment $\times$ time

Formula Used:

Profit Ratio $= I_1 T_1 : I_2 T_2$

Solution:

$75000 \times 24 = 1800000$

$50000 \times 18 = 900000$

$1800000 : 900000 = 2 : 1$

Final Answer:

$2 : 1$

Q.73 The distance between two circle centers is d. The lengths of direct and transverse common tangents are L and M respectively. If L² + M² = 320 and sum of squares of radii is 160, what is d?

A. 12
B. 8√5
C. 10√5
D. 14

Answer: B

Sol: Given:

$L^2 + M^2 = 320$

$r_1^2 + r_2^2 = 160$

Formula Used:

$L^2 = d^2 - (r_1 - r_2)^2$

$M^2 = d^2 - (r_1 + r_2)^2$

$L^2 + M^2 = 2d^2 - 2(r_1^2 + r_2^2)$

Solution:

$320 = 2d^2 - 2(160)$

$320 = 2d^2 - 320$

$2d^2 = 640$

$d^2 = 320$

$d = \sqrt{320} = 8\sqrt{5}$

Final Answer:

$8\sqrt{5}$

Q.74 Two parallel chords measuring 20 cm and 14 cm exist on the same side of center. The distance between them is 3 cm. What is the radius?

A. $\sqrt{143}$ cm
B. $\sqrt{140}$ cm
C. $\sqrt{149}$ cm
D. $\sqrt{134}$ cm

Answer: C

Sol: **Given:**

Lengths of chords $= 20, 14$

Distance between chords $= 3$

Concept Used:

Perpendicular from center bisects a chord

Formula Used:

$r^2 = d^2 + a^2$

Solution:

Let distance of 20 cm chord from center $= x$

Distance of 14 cm chord from center $= x + 3$

$\dfrac{20}{2} = 10, \dfrac{14}{2} = 7$

$r^2 = x^2 + 10^2$

$r^2 = (x+3)^2 + 7^2$

$x^2 + 100 = x^2 + 6x + 58$

$6x = 42$

$x = 7$

$r^2 = 49 + 100 = 149$

$r = \sqrt{149}$

Final Answer:

$\sqrt{149}$ cm

Q.75 What is the area of a segment formed by a chord in a circle of radius 10 cm, when the angle subtended at center is 120°?

A. $\dfrac{100\pi}{3} - 25\sqrt{3}$
B. $\dfrac{100\pi}{3} - 50\sqrt{3}$
C. 50π - 25√3
D. 50π - 50√3

Answer: A

Sol: **Given:**

$r = 10$

$\theta = 120°$

Concept Used:

Area of segment = Area of sector − Area of triangle

Formula Used:

Sector area $= \dfrac{\theta}{360°}\pi r^2$

Triangle area $= \dfrac{1}{2}r^2\sin\theta$

Solution:

Sector area $= \dfrac{120}{360}\pi \times 10^2 = \dfrac{100\pi}{3}$

$\sin 120° = \dfrac{\sqrt{3}}{2}$

Triangle area $= \dfrac{1}{2}\times 100 \times \dfrac{\sqrt{3}}{2} = 25\sqrt{3}$

Segment area $= \dfrac{100\pi}{3} - 25\sqrt{3}$

Final Answer:

$\dfrac{100\pi}{3} - 25\sqrt{3}$

Q.76 Choose the most suitable option to replace the highlighted part of the sentence:

She do not understand this concept properly.

A. do not understood
B. does not understand
C. did not understands
D. is not understand

Answer: B

Sol:

The correct option is (b).
Explanation: The subject of the sentence is **She**, which is a third person singular subject. In the simple present tense, when the subject is third person singular (he/she/it or a singular noun), the auxiliary verb used in negative sentences is **does not** (not **do not**). The main verb then remains in its **base form**.

Therefore, the correct replacement is: **does not understand**.

Grammatical rule used:

- Simple Present (Negative): **Subject (3rd person singular) + does not + base verb**
- Simple Present (Negative): **I/We/You/They + do not + base verb**

Example (rule based): He **does not** like noise.

Why other options are incorrect:

- **A:** "do not understood" is incorrect because after **do/does**, the verb must be in base form, not past form.
- **C:** "did not understands" is incorrect because with **did not**, the verb must be base form (**understand**), not **understands**.
- **D:** "is not understand" is incorrect because after **is**, we need **understanding** (continuous) or a correct structure; "is not understand" is ungrammatical.

So the correct answer is (b)

Q.77 Choose the correct one-word substitution for: 'The practice of spying to obtain secret information.'

A. Diplomacy

B. Espionage
C. Arbitration
D. Mediation

Answer: B

Sol:

The correct option is (b).
Explanation: The practice of spying to obtain secret information, especially for political or military purposes, is called **Espionage**. It involves covert observation, intelligence gathering, and secret operations.

Espionage (Hindi meaning: जासूसी) refers to spying activities conducted to collect confidential information.

Example: The agency arrested the officer for espionage and leaking classified files.

Meanings of the given other options:

- **A Diplomacy:** Managing international relations through negotiation (कूटनीति).
- **C Arbitration:** Settlement of a dispute by a neutral third party (मध्यस्थ निर्णय/पंचाट).
- **D Mediation:** Intervention to help settle a dispute (मध्यस्थता).

So the correct answer is (b)

Q.78 Select the most appropriate synonym of the given word: CALLOUS

A. Restless
B. Uneasy
C. Alarmed
D. Unconcerned

Answer: D

Sol:

The correct option is (d).
Explanation: The word **callous** means emotionally insensitive or showing no sympathy for others' suffering. A callous person appears indifferent and does not feel concerned about pain or hardship of others.

Given word: Callous (Hindi meaning: निर्दयी/भावनाहीन). It describes someone who is hard-hearted and lacks compassion.

Example: His callous remarks hurt the team members who were already stressed.

Correct answer word: Unconcerned (Hindi meaning: बेपरवाह/अचिंतित). It means not worried and not showing care or interest, which matches the sense of emotional indifference.

Example: She remained unconcerned about the criticism and continued her work calmly.

Synonyms: indifferent, insensitive, heartless, unfeeling.

Antonyms: compassionate, sensitive, caring, sympathetic.

Meanings of all the other given options:

- **A Restless:** Unable to rest; uneasy and constantly moving (बेचैन/अस्थिर).
- **B Uneasy:** Slightly worried or uncomfortable (असहज/चिंतित).
- **C Alarmed:** Suddenly frightened or worried (घबराया हुआ).

So the correct answer is (d)

Q.79 Choose the correct meaning of idiom: Hold at arm's length

A. To treat someone warmly
B. To keep someone at a distance
C. To imitate someone closely
D. To support someone openly

Answer: B

Sol:

The correct option is (b).
Explanation: The idiom **"hold at arm's length"** means to keep someone emotionally or socially distant, not allowing closeness or intimacy. It suggests a deliberate effort to avoid becoming too friendly or too involved with a person.

Given idiom: Hold at arm's length (Hindi meaning: दूरी बनाकर रखना / नज़दीक न आने देना).

Example: After the argument, she decided to **hold him at arm's length** and avoid personal conversations.

Other related idioms and their meanings:

- **Keep someone at bay:** To prevent someone from coming closer or interfering (किसी को पास न आने देना).
- **Give someone the cold shoulder:** To ignore someone deliberately (जानबूझकर अनदेखा करना).
- **Keep one's distance:** To stay away from someone (दूरी बनाए रखना).

So the correct answer is (b)

Q.80 Choose the correct one-word substitute for: 'Fear of closed spaces.'

A. Claustrophobia
B. Arachnophobia
C. Acrophobia
D. Hydrophobia

Answer: A

Sol:

The correct option is (a).
Explanation: The fear of closed or confined spaces is called **Claustrophobia**. A person with claustrophobia experiences anxiety in elevators, small rooms, crowded trains, or any tightly enclosed area.

Claustrophobia (Hindi meaning: बंद जगहों का डर) is a specific phobia related to confinement.

Example: Due to claustrophobia, he avoided travelling in crowded lifts.

Meanings of the given other options:

- **B Arachnophobia:** Fear of spiders (मकड़ियों का डर).
- **C Acrophobia:** Fear of heights (ऊँचाई का डर).
- **D Hydrophobia:** Fear of water; also associated with rabies symptoms (पानी का डर).

So the correct answer is (a)

Q.81 Which of the following best completes the analogy: Joy is to presence as sorrow is to —?
Read the following passage and answer the questions based on the passage:
To divide life into fixed opposites of happiness and grief is to misunderstand its deepest pattern. Human life does not move in a straight line of delight or misery; instead, it flows through a living exchange where one feeling gives depth and definition to the other. Victory feels most intense when it follows defeat, and the sting of losing something gains shape only because we once held it close. Thus, joy and sorrow are not enemies but partners in the same story. Across ages, thinkers have recognized this emotional duality. The Stoics viewed suffering as unavoidable and even useful in reaching calm, while Eastern paths such as Buddhism emphasize that all experiences pass and nothing remains permanent. In both views,

the search for lasting happiness requires accepting change. Without grief, joy would lose its sharpness and become plain—without contrast, it would carry little weight. This mutual dependence appears even in everyday life: spring seems brighter after a bitter winter, and quiet solitude matters only to someone who has felt the noise of crowds. Often, personal maturity is shaped in painful trials—loss and hardship carve depth into us, strengthening empathy, resilience, and thankfulness. Wanting uninterrupted happiness is like demanding a life in a single colour—smooth but lifeless. In this sense, joy and sorrow together create a chiaroscuro of the mind, a striking interplay of light and shadow that makes life more vivid and human.

A. Liberty
B. Expectation
C. Missingness
D. Stillness

Answer: C

Sol:

The correct option is (c).

Explanation: An analogy is based on a logical relationship. The passage clearly suggests that **joy** is strongly felt when something is **present** or possessed, while **sorrow** is deeply connected with **loss**, which is a sense of something being missing or absent.

Thus, just as **joy** relates to **presence**, **sorrow** relates to **missingness** (absence/loss). This matches the passage line: "the sting of losing something gains shape only because we once held it close."

Other options are incorrect because:

- **A Liberty:** Liberty is not the opposite relationship of presence; it relates to freedom.
- **B Expectation:** Expectation relates to hope or anticipation, not the absence/loss relationship discussed.
- **D Stillness:** Stillness refers to quietness; it is not the conceptual counterpart of presence here.

So the correct answer is (c)

Q.82 Based on the passage, which inference best reflects the writer's view of emotions?

Read the following passage and answer the questions based on the passage:

To divide life into fixed opposites of happiness and grief is to misunderstand its deepest pattern. Human life does not move in a straight line of delight or misery; instead, it flows through a living exchange where one feeling gives depth and definition to the other. Victory feels most intense when it follows defeat, and the sting of losing something gains shape only because we once held it close. Thus, joy and sorrow are not enemies but partners in the same story. Across ages, thinkers have recognized this emotional duality. The Stoics viewed suffering as unavoidable and even useful in reaching calm, while Eastern paths such as Buddhism emphasize that all experiences pass and nothing remains permanent. In both views, the search for lasting happiness requires accepting change. Without grief, joy would lose its sharpness and become plain—without contrast, it would carry little weight. This mutual dependence appears even in everyday life: spring seems brighter after a bitter winter, and quiet solitude matters only to someone who has felt the noise of crowds. Often, personal maturity is shaped in painful trials—loss and hardship carve depth into us, strengthening empathy, resilience, and thankfulness. Wanting uninterrupted happiness is like demanding a life in a single colour—smooth but lifeless. In this sense, joy and sorrow together create a chiaroscuro of the mind, a striking interplay of light and shadow that makes life more vivid and human.

A. A meaningful life must avoid suffering completely
B. Feelings should be separated into rigid opposites
C. Sadness intensifies how we value happiness
D. Happiness is only a social illusion

Answer: C

Sol:

The correct option is (c).

Explanation: The passage consistently argues that emotions are not rigid opposites; rather, they define each other. The author states that "without grief, joy would lose its sharpness" and gives multiple examples to show that sadness and hardship deepen appreciation, empathy, resilience, and thankfulness.

Hence, the best inference is that **sadness intensifies how we value happiness**. This is the central idea: sorrow is a partner to joy because it provides contrast and meaning.

Explanation of context of passage: The author connects philosophical viewpoints (Stoicism and Buddhism) to show that accepting suffering and impermanence is essential for lasting calm and mature happiness.

Other options are incorrect because:

- **A:** The passage never says suffering must be avoided; it says suffering is unavoidable and useful for maturity.
- **B:** The passage criticises rigid opposites, so it does not support separating feelings strictly.
- **D:** The passage does not claim happiness is a social illusion; it discusses emotional contrast as a life pattern.

So the correct answer is (c)

Q.83 What is the central aim of the passage?

Read the following passage and answer the questions based on the passage:

To divide life into fixed opposites of happiness and grief is to misunderstand its deepest pattern. Human life does not move in a straight line of delight or misery; instead, it flows through a living exchange where one feeling gives depth and definition to the other. Victory feels most intense when it follows defeat, and the sting of losing something gains shape only because we once held it close. Thus, joy and sorrow are not enemies but partners in the same story. Across ages, thinkers have recognized this emotional duality. The Stoics viewed suffering as unavoidable and even useful in reaching calm, while Eastern paths such as Buddhism emphasize that all experiences pass and nothing remains permanent. In both views, the search for lasting happiness requires accepting change. Without grief, joy would lose its sharpness and become plain—without contrast, it would carry little weight. This mutual dependence appears even in everyday life: spring seems brighter after a bitter winter, and quiet solitude matters only to someone who has felt the noise of crowds. Often, personal maturity is shaped in painful trials—loss and hardship carve depth into us, strengthening empathy, resilience, and thankfulness. Wanting uninterrupted happiness is like demanding a life in a single colour—smooth but lifeless. In this sense, joy and sorrow together create a chiaroscuro of the mind, a striking interplay of light and shadow that makes life more vivid and human.

A. To summarise major philosophical schools in history
B. To contend that sorrow is necessary for genuine joy and should be accepted
C. To mourn how easily happiness disappears
D. To criticise modern society for emotional numbness

Answer: B

Sol:

The correct option is (b).

Explanation: The main purpose of the passage is to argue that sorrow is not the enemy of joy; rather, it is necessary for joy to feel meaningful. The author repeatedly emphasizes that emotions gain "depth and definition" through contrast, and that lasting happiness requires acceptance of change and suffering as part of life.

Explanation of context of passage: The writer explains that victory feels intense after defeat, and joy becomes sharper only because grief exists. Philosophical examples from Stoicism and Buddhism support the same conclusion: suffering and impermanence are unavoidable, and maturity comes from accepting them.

Other options are incorrect because:

- **A:** The passage does not merely summarise philosophical schools; it uses them as support for a central argument.
- **C:** The passage is not mourning the loss of happiness; it is explaining why loss gives meaning to happiness.
- **D:** The passage does not mainly criticise modern society; it discusses a universal human emotional truth.

So the correct answer is (b)

Q.84 Which tone best describes the author's manner of expression in the passage?

Read the following passage and answer the questions based on the passage:

To divide life into fixed opposites of happiness and grief is to misunderstand its deepest pattern. Human life does not move in a straight line of delight or misery; instead, it flows through a living exchange where one feeling gives depth and definition to the other. Victory feels most intense when it follows defeat, and the sting of losing something gains shape only because we once held it close. Thus, joy and sorrow are not enemies but partners in the same story. Across ages, thinkers have recognized this emotional duality. The Stoics viewed suffering as unavoidable and even useful in reaching calm, while Eastern paths such as Buddhism emphasize that all experiences pass and nothing remains permanent. In both views, the search for lasting happiness requires accepting change. Without grief, joy would lose its sharpness and become plain—without contrast, it would carry little weight. This mutual dependence appears even in everyday life: spring seems brighter after a bitter winter, and quiet solitude matters only to someone who has felt the noise of crowds. Often, personal maturity is shaped in painful trials—loss and hardship carve depth into us, strengthening empathy, resilience, and thankfulness. Wanting uninterrupted happiness is like demanding a life in a single colour—smooth but lifeless. In this sense, joy and sorrow together create a chiaroscuro of the mind, a striking interplay of light and shadow that makes life more vivid and human.

A. Playful
B. Reflective
C. Mocking
D. Unmoved

Answer: B

Sol:

The correct option is (b).

Explanation: The passage is written in a thoughtful and philosophical manner. The author calmly analyses how joy and sorrow depend on each other and supports the idea using examples (victory/defeat, spring/winter, solitude/crowds) and references to philosophical traditions (Stoicism and Buddhism).

This style indicates a **reflective** tone because the author is not mocking or playful; instead, the author is contemplating life's emotional patterns and encouraging acceptance of change.

Explanation of context of passage: The writer argues that life cannot be divided into rigid opposites because emotional experiences gain meaning through contrast. Hence, the passage invites the reader to reflect on emotional maturity and the value of both happiness and grief.

Other options are incorrect because:

- **A Playful:** The passage is serious and philosophical, not light-hearted or humorous.
- **C Mocking:** There is no ridicule; the author is respectful and analytical.
- **D Unmoved:** The author shows emotional insight and involvement, not emotional detachment.

So the correct answer is (b)

Q.85 . In the passage, the word "chiaroscuro" most nearly means:

Read the following passage and answer the questions based on the passage:

To divide life into fixed opposites of happiness and grief is to misunderstand its deepest pattern. Human life does not move in a straight line of delight or misery; instead, it flows through a living exchange where one feeling gives depth and definition to the other. Victory feels most intense when it follows defeat, and the sting of losing something gains shape only because we once held it close. Thus, joy and sorrow are not enemies but partners in the same story. Across ages, thinkers have recognized this emotional duality. The Stoics viewed suffering as unavoidable and even useful in reaching calm, while Eastern paths such as Buddhism emphasize that all experiences pass and nothing remains permanent. In both views, the search for lasting happiness requires accepting change. Without grief, joy would lose its sharpness and become plain—without contrast, it would carry little weight. This mutual dependence appears even in everyday life: spring seems brighter after a bitter winter, and quiet solitude matters only to someone who has felt the noise of crowds. Often, personal maturity is shaped in painful trials—loss and hardship carve depth into us, strengthening empathy, resilience, and thankfulness. Wanting uninterrupted happiness is like demanding a life in a single colour—smooth but lifeless. In this sense, joy and sorrow together create a chiaroscuro of the mind, a striking interplay of light and shadow that makes life more vivid and human.

A. Emotional numbness
B. A contrast of light and dark
C. A musical fluctuation
D. A particular kind of sorrow

Answer: B

Sol:

The correct option is (b).

Explanation: In the passage, the author says: "joy and sorrow together create a chiaroscuro of the mind, a striking interplay of light and shadow." The word **chiaroscuro** is directly explained by the author through the phrase **"interplay of light and shadow"**.

Therefore, it most nearly means **a contrast of light and dark**, used metaphorically to describe how joy and sorrow together make life vivid.

Other options are incorrect because:

- **A Emotional numbness:** The passage describes richness of feeling, not numbness.
- **C A musical fluctuation:** The context is visual (light and shadow), not musical.
- **D A particular kind of sorrow:** Chiaroscuro is not a type of sorrow; it is a contrast technique/metaphor.

So the correct answer is (b)

Q.86 Spot the correct spelling of adjective 'relating to the nervous system'.

A. Neuroligical
B. Neurological
C. Neuroligecal
D. Neurolojjical

Answer: B

Sol:

The correct option is (b).

Explanation: The adjective that means "relating to the nervous system" is correctly spelled as **Neurological**. It comes from the noun **neurology** (the study of the nervous system) and follows the correct spelling pattern with the suffix **-ical**.

Correct spelling: Neurological (Hindi meaning: तंत्रिका-तंत्र से संबंधित). It refers to anything connected with the brain, nerves, or the nervous system.

Example: The doctor conducted a **neurological** examination to check nerve function.

Meanings of all the given options:

- **A Neuroligical:** Incorrect spelling (no standard meaning) (Hindi: गलत वर्तनी).
- **B Neurological:** Relating to the nervous system (तंत्रिका-तंत्र से संबंधित).
- **C Neuroligecal:** Incorrect spelling (no standard meaning) (Hindi: गलत वर्तनी).
- **D Neurolojjical:** Incorrect spelling (no standard meaning) (Hindi: गलत वर्तनी).

So the correct answer is (b)

Q.87 Select the sentence containing the homonym of the highlighted word:
He slipped a compact umbrella into his backpack.

A. The engineer designed a **compact** engine for small cars.
B. The workers **compacted** the gravel before laying the tiles.
C. The two nations entered a **compact** to share water resources.
D. She wrote her report in a **compact** format to save space.

Answer: C

Sol:

The correct option is (c).

Explanation: In the given sentence, the highlighted word **compact** is used as an adjective meaning **small and neatly packed** (Hindi: छोटा/सघन). A **homonym** is a word that has the **same spelling and pronunciation** but a **different meaning** (and often a different part of speech).

Option (c) uses **compact** as a noun meaning **an agreement or treaty** between two parties (Hindi: समझौता/संधि). This is a different meaning of the same word, so it is the homonym usage.

Why other options are incorrect:

- **A:** "compact engine" uses the same adjective meaning (small), not a different meaning.
- **B:** "compacted" is a different word form (verb/past tense), not the same word with different meaning.
- **D:** "compact format" again uses the adjective meaning (concise/small), not the noun meaning.

So the correct answer is (c)

Q.88 Rearrange the following sentences to form a coherent paragraph:
1. This helps teams track changes and collaborate without overwriting each other's work.
2. Version control systems are tools that manage code modifications over time.
3. A widely used example is Git, which stores snapshots of a project in repositories.
4. As a result, software development becomes more organized and reliable.

A. 2, 1, 3, 4
B. 3, 2, 1, 4
C. 2, 3, 4, 1
D. 1, 2, 3, 4

Answer: A

Sol:

The correct option is (a).

Explanation: A coherent paragraph usually begins with a general definition, then explains its benefit, then provides an example, and finally ends with a concluding result.

- **Sentence 2** is the best opening line because it defines what version control systems are.
- **Sentence 1** logically follows, as "This" refers to the version control system mentioned in sentence 2 and explains its practical benefit (tracking changes and collaboration).
- **Sentence 3** then gives a concrete example (Git) to support the explanation.
- **Sentence 4** concludes the paragraph with a result: development becomes organized and reliable.

Thus, the correct order is **2, 1, 3, 4**.

How to identify the correct sequence:

- Start with the sentence that introduces/defines the topic.
- Place sentences with pronouns like "This/These" after the sentence they refer to.
- Examples ("for example", "a widely used example") usually come after concept explanation.
- Result/conclusion lines ("As a result", "Therefore") generally come at the end.

So the correct answer is (a)

Q.89 A sentence is provided in indirect speech. From the four given options, choose the one that most accurately conveys the sentence in its corresponding direct speech.
The coach said that they had played well and would win the match.

A. "You played well and you will win the match," said the coach.
B. "They has played well and will win the match," the coach said.
C. "You had played well and would win the match," said the coach.
D. "They played well and they win the match," said the coach.

Answer: A

Sol:

The correct option is (a).

Explanation: While converting indirect speech to direct speech, we reverse the narration changes:

- **they** (reported as a group) can become **you** when the coach is addressing the team directly.
- **had played** (past perfect) typically changes back to **played** (simple past) in direct speech when removing the backshift caused by reporting.
- **would win** changes back to **will win**.
- Quotation marks and reporting clause are added correctly.

Thus, the accurate direct speech is: **"You played well and you will win the match," said the coach.**

Why other options are incorrect:

- **B:** "They has played" is grammatically incorrect (should be "have played").
- **C:** Keeps "had played" and "would win", which remains like indirect/backshifted form, not proper direct speech.
- **D:** "they win" is incorrect tense; it should be "they will win", and overall grammar is faulty.

So the correct answer is (a)

Q.90 Select the correct option:
Hardly had the meeting begun ____ the power went out.

A. when
B. than
C. then
D. while

Answer: A

Sol:

The correct option is (a).

Explanation: The construction **Hardly/Scarcely/Barely + had + subject + past participle** is used to show that one action happened immediately before another. This pattern is commonly followed by **when**, not "than".

Here, the meaning is: as soon as the meeting began, the power went out. Therefore, **when** is the correct connector.

Grammatical rule used:

- **Hardly/Scarcely/Barely** (negative adverbs) cause **inversion**: **Hardly had + subject + V3 + when + clause**
- **No sooner** pairs with **than**: **No sooner had + subject + V3 + than + clause**

Example: Hardly had I reached home **when** it started raining.

Why other options are incorrect:

- **B:** "than" is used with "no sooner", not with "hardly".
- **C:** "then" indicates time sequence but does not fit this fixed correlative structure.
- **D:** "while" shows simultaneity, but the sentence shows immediate succession.

So the correct answer is (a)

Q.91 A sentence is provided in direct speech. From the four given options, choose the one that most accurately conveys the sentence in its corresponding indirect speech.

Meera said, "I can finish the task today."

A. Meera said that she can finish the task today.
B. Meera said that I could finish the task that day.
C. Meera said that she could finish the task that day.
D. Meera said she will finish the task today.

Answer: C

Sol:

The correct option is (c).

Explanation: To convert direct speech into indirect speech, we apply the rules of narration:

- The reporting verb is **said** (past), so the tense generally shifts back (if the statement is not a universal truth).
- Pronoun changes: "**I**" (Meera speaking) becomes **she**.
- Modal change: **can** becomes **could**.
- Time expression change: **today** becomes **that day**.

Thus, the correct indirect speech is: **Meera said that she could finish the task that day.**

Why other options are incorrect:

- **A:** "can" and "today" are not changed; with a past reporting verb, "can" should become "could" and "today" should become "that day".
- **B:** Uses "I" incorrectly; it should change to "she".
- **D:** "will" is not the correct backshift from "can" and "today" remains unchanged.

So the correct answer is (c)

Q.92 Find the part of the sentence that contains an error:

The manager insisted (1)/ that every employee must submits the form (2)/ before the deadline (3)/ without any exceptions. (4)/

A. (1)
B. (2)
C. (3)
D. (4)

Answer: B

Sol:

The correct option is (b).

Explanation: The error is in part (2): **"must submits"**. After a modal verb such as **must, can, should, may, might, will**, the main verb must always be in its **base form (V1)**, not in the third person singular form (V1+s/es).

Correct form: **must submit**, not **must submits**.

Correct sentence: The manager insisted that every employee **must submit** the form before the deadline without any exceptions.

Grammatical rule used:

- **Modal + Base Verb:** Modal verbs are followed by V1 (base form) only.
- No "s/es/ed/ing" form is used immediately after a modal.

Example: She **must complete** the assignment today.

Information booster: Even if the subject is third person singular (he/she/it), after a modal we still use base form: "He must **go**", not "He must goes".

So the correct answer is (b)

Q.93 Identify the misspelt word

A. Iridescent
B. Magnanimous
C. Acquaintence
D. Meticulous

Answer: C

Sol:

The correct option is (c).
Explanation: Option (c) **Acquaintence** is misspelt. The correct spelling is **Acquaintance**.

Correct spelling: Acquaintance (Hindi meaning: परिचय/जान-पहचान). It refers to a person one knows slightly, or the state of being familiar with someone/something.

Example: He is only an acquaintance, not a close friend.

Parts of speech: Acquaintance is a **noun**.

Meanings of all the given options:

- **A Iridescent:** Showing rainbow-like colours that change with light (इंद्रधनुषी चमक वाला).
- **B Magnanimous:** Very generous or forgiving, especially toward a rival (उदार/क्षमा करने वाला).
- **C Acquaintence:** Incorrect spelling; correct is acquaintance (गलत वर्तनी).
- **D Meticulous:** Very careful and precise (अत्यंत सावधान/सूक्ष्म).

So the correct answer is (c)

Q.94 Find the part of the sentence that contains an error:

Were she to have submitted the files on time, (1)/ the delay could have been (2)/ avoided much sooner than it actually was, (3)/ preventing unnecessary confusion. (4)/

A. (1)
B. (2)
C. (3)
D. (4)

Answer: A

Sol:

The correct option is (a).

Explanation: The sentence attempts to use an inverted conditional structure. However, the phrase **"Were she to have submitted"** is not the correct standard form for referring to a past unreal condition.

For a past unreal condition (third conditional), the correct inverted structure is:

- **Had + subject + past participle**, ...

So the correct sentence should be: **Had she submitted the files on time, the delay could have been avoided much sooner...**

"Were + subject + to + base verb" is generally used for hypothetical or less likely situations, usually in present/future reference (e.g., "Were I to resign, ..."). Mixing it with **to have + V3** here makes the construction faulty for this exam-level standard pattern.

Grammatical rule used:

- **Third Conditional (Past Unreal):** If + **had + V3**, ... **would/could/might have + V3**.
- **Inversion (without if): Had + subject + V3**, ...

Example: Had he reached earlier, he could have met the manager.

Therefore, part (1) contains the error.

So the correct answer is (a)

Q.95 Rearrange the following sentences to form a coherent paragraph:
1. These solutions reduce waste by keeping materials in use for as long as possible.
2. As resources become scarce, industries are increasingly shifting toward a circular economy model.
3. This approach emphasizes reuse, repair, and recycling instead of disposal.
4. Therefore, circular strategies are viewed as essential for sustainable growth.

A. 1, 3, 2, 4
B. 2, 3, 1, 4
C. 3, 2, 1, 4
D. 2, 1, 3, 4

Answer: B

Sol:

The correct option is (b).

Explanation: A coherent paragraph should begin with the main idea, then describe the approach, then mention its outcomes, and finally conclude with a result statement.

- **Sentence 2** introduces the topic and context: industries shifting toward a circular economy due to scarcity of resources.
- **Sentence 3** explains what "this approach" (circular economy) focuses on: reuse, repair, recycling.
- **Sentence 1** follows logically because "These solutions" refers to the reuse/repair/recycling methods in sentence 3 and states their benefit (reducing waste).
- **Sentence 4** concludes with "Therefore", giving the final inference about sustainable growth.

Thus, the correct order is **2, 3, 1, 4**.

So the correct answer is (b)

Q.96 Select the most appropriate antonym of the given word: Utopian

A. Idealistic
B. Dreamlike
C. Romantic
D. Realistic

Answer: D

Sol:

The correct option is (d).
Explanation: The word **Utopian** refers to an ideal, perfect world or plan that is often impractical in real life. It is connected with unrealistic perfection or imagined ideal conditions.

Given word: Utopian (Hindi meaning: आदर्शवादी/काल्पनिक रूप से पूर्ण). It describes ideas that are extremely ideal but often not practical.

Example: His utopian plan ignored the real economic limitations of the country.

Correct antonym word: Realistic (Hindi meaning: यथार्थवादी). It means practical and based on real facts and possibilities.

Example: We need a realistic strategy to complete the project within the budget.

Synonyms: idealistic, visionary, impractical, fanciful.

Antonyms: realistic, practical, feasible, sensible.

Meanings of all the other given options:

- **A Idealistic:** Having high ideals; often impractical (आदर्शवादी).
- **B Dreamlike:** Like a dream; unreal (स्वप्न जैसा/अवास्तविक).
- **C Romantic:** Imaginative or emotional rather than practical (भावुक/कल्पनाशील).

So the correct answer is (d)

Q.97 Change the following from active to passive:
Did the committee sanction the revised environmental policy?

A. Has the revised environmental policy been sanctioned by the committee?
B. Is the revised environmental policy being sanctioned by the committee?
C. Was the revised environmental policy being sanctioned by the committee?
D. Was the revised environmental policy sanctioned by the committee?

Answer: D

Sol:

The correct option is (d).
Explanation: The given sentence is in **simple past tense** interrogative form: **Did + subject + base verb**. While converting to passive, the object becomes the subject, and the tense must remain the same (simple past).

Active: **Did the committee sanction the revised environmental policy?**

Object: **the revised environmental policy** becomes the subject in passive.

Passive (Simple Past): **Was + subject + V3 + by + agent**

Hence: **Was the revised environmental policy sanctioned by the committee?**

Structure:

- **Active voice:** Did + Subject + V1 + Object?
- **Passive voice:** Was/Were + Object (as Subject) + V3 + by + Subject?

Why other options are incorrect:

- **A:** "Has been sanctioned" is present perfect, but the active sentence is simple past.
- **B:** "Is being sanctioned" is present continuous passive, not matching the tense.
- **C:** "Was being sanctioned" suggests an ongoing past action, which the original does not indicate.

So the correct answer is (d)

Q.98 Select the correct option:

The consultant delivered a report, __ conclusions were supported by multiple audits, to the committee.

A. whose
B. whom
C. which
D. that

Answer: A

Sol:

The correct option is (a).

Explanation: The blank requires a **relative pronoun** showing possession because the conclusions belong to the report. The possessive relative pronoun for both people and things is **whose**.

Correct sentence: The consultant delivered a report, **whose** conclusions were supported by multiple audits, to the committee.

Grammatical rule used:

- **Whose** is used to show ownership/possession: **the report whose conclusions...**
- It can be used for things as well as people.

Example: I read a book **whose** ending was surprising.

Why other options are incorrect:

- **B whom:** Used as an object pronoun for people, not for possession, and not for things here.
- **C which:** Cannot express possession directly in this structure.
- **D that:** Used for defining clauses and does not show possession; also less suitable with commas in non-defining clauses.

So the correct answer is (a)

Q.99 Convert the sentence provided below from its passive voice structure to an active voice structure:

The suspect was thought to have been staying in a remote lodge before being arrested.

A. The suspect thought he was staying in a remote lodge.
B. People thought the suspect stayed in a remote lodge.
C. It was thought that the suspect had been staying in a remote lodge.
D. Authorities thought the suspect had been staying in a remote lodge before they arrested him.

Answer: D

Sol:

The correct option is (d).

Explanation: The given sentence uses an **impersonal passive** structure: "The suspect **was thought** …". In active voice, we must introduce an appropriate doer (agent) such as **people/authorities/police** as the subject, and convert the passive reporting verb into an active reporting verb.

The phrase **to have been staying** indicates an action that was in progress **before** another past action (arrest). In active voice, this is best expressed using **past perfect continuous**: **had been staying**.

Also, "before being arrested" must become an active clause: **before they arrested him**.

Structure used:

- Passive reporting: **Subject + was/were thought + to have + V3 / to have been + V-ing**
- Active reporting: **People/Authorities + thought + (that) + subject + had been + V-ing**

Why other options are incorrect:

- **A:** Wrong meaning because it makes the suspect the thinker, which changes the sense.

- **B:** "stayed" does not correctly match the continuous idea "had been staying" and also misses the arrest clause.
- **C:** This remains passive/impersonal; it is not converted into active voice.

So the correct answer is (d)

Q.100   Choose the most suitable option to replace the highlighted part of the sentence:
Ravi is junior than his brother in the office.

A. more junior than
B. junior to
C. junior than to
D. younger than

Answer: B

Sol:

The correct option is (b).
Explanation: The adjective **junior** is not followed by **than**. In standard English, certain comparative adjectives take the preposition **to** instead of "than", such as **junior to, senior to, superior to, inferior to, prior to**.

Hence, the correct expression is: **Ravi is junior to his brother in the office.**

Grammatical rule used:

- Use **to** after: junior, senior, superior, inferior, prior, posterior.
- Do not use "than" with these adjectives in formal exam-standard usage.

Example: She is **senior to** me by two years.

Information booster / exception: In informal speech, "junior than" may be heard, but competitive exams follow the standard rule **junior to**.

So the correct answer is (b)