

SSC CGL T-I Similar Paper (Held on 13 Sep 2025 S1) English

**Q.1** Which of the following words does not belong to the given group?

Rose, Lotus, Jasmine, Mango

- A. Rose
- B. Lotus
- C. Jasmine
- D. Mango

**Answer:** D

**Sol: Given:** Rose, Lotus, Jasmine, Mango

**Rose, Lotus** and **Jasmine** are flowers.

**Mango** is a fruit, not a flower.

Therefore, **Mango** does not belong to the group.

Thus, correct option is (d).

**Q.2** One number does not fit into the given factorial series.

Identify it. 3, 6, 24, 120, 720, 800

- A. 6
- B. 24
- C. 120
- D. 800

**Answer:** D

**Sol: Given:** 3, 6, 24, 120, 720, 800

Look at the numbers:

$6 = 3!$

$24 = 4!$

$120 = 5!$

$720 = 6!$

All these numbers are factorials of natural numbers.

But, **800** is not the factorial of any whole number.

Therefore, **800** does not fit the factorial series.

Thus, correct option is (d).

**Q.3** Ramesh said, "That boy is the son of the only daughter of my grandfather." How is the boy related to Ramesh?

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

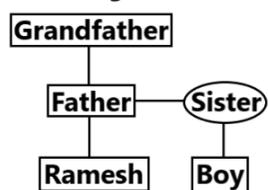
**Answer:** B

**Sol: Given:**

Ramesh said, "That boy is the son of the only daughter of my grandfather."

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

From the given information blood relation diagram will be.



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So, the boy is **cousin** of Ramesh.  
Thus, correct option is (b).

**Q.4** Find the option that best completes the analogy.

AC : FH :: BD : ?

- A. GJ
- B. HK
- C. GI
- D. IK

**Answer:** C

**Sol: Given:** AC : FH :: BD : ?

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 + 5 place.

**For,** AC : FH

A + 5 = F, C + 5 = H

Similarly,

BD : ?

B + 5 = G, D + 5 = I

So, BD : **GI**

Thus, correct option is (c).

**Q.5** Which of the following number sets is different from the others?

(9, 18, 36)

(12, 24, 48)

(7, 14, 29)

(5, 10, 20)

- A. (9,18,36)
- B. (12,24,48)
- C. (7,14,29)
- D. (5,10,20)

**Answer:** C

**Sol: Given:**

(9, 18, 36)

(12, 24, 48)

(7, 14, 29)

(5, 10, 20)

**Logic:** 1st number  $\times$  2 = 2nd number and 2nd number  $\times$  2 = 3rd number

**For,** (9, 18, 36)

$9 \times 2 = 18$  and  $18 \times 2 = 36$

**For,** (12, 24, 48)

$12 \times 2 = 24$  and  $24 \times 2 = 48$

**For,** (7, 14, 29)

$7 \times 2 = 14$  and  $14 \times 2 \neq 29$

**For,** (5, 10, 20)

$5 \times 2 = 10$  and  $10 \times 2 = 20$

So, **(7, 14, 29)** is odd one out.

Thus, correct option is (c).

**Q.6** Introducing a man, a woman said, "He is the brother of the daughter of my father." How is the man related to the woman?

- A. Brother
- B. Son
- C. Cousin
- D. Nephew

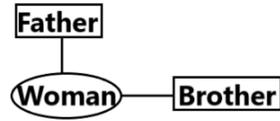
**Answer:** A

**Sol: Given:**

Introducing a man, a woman said, "He is the brother of the daughter of my father."

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

From the given information blood relation diagram will be.



So, the man is **brother** of the woman.  
Thus, correct option is (a).

**Q.7** How many letters in the given word are between the first vowel and the last consonant? "COMMUNICATION"

- A. 4
- B. 5
- C. 6
- D. 7

**Answer:** D

**Sol: Given:** COMMUNICATION

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

Write the letters with positions:

C(1) O(2) M(3) M(4) U(5) N(6) I(7) C(8) A(9) T(10) I(11) O(12) N(13)

First vowel = O (position 2)

Last consonant (before the ending vowel sequence) = T (position 10)

Now count the letters between them:

Positions between 2 and 10:

$$= 10 - 2 - 1$$

$$= 7$$

So, **7** letters in the given word are between the first vowel and the last consonant.

Thus, correct option is (d).

**Q.8** Which of the following address(es) is/are exactly the same as the given address?

**Given Address:** Amit Sharma, Flat 21A, Green Residency, Bhopal, 462016

1. Amit Sharma, Flat 21A, Green Residency, Bhopal, 462016
2. Amit Sharma, Flat 21, Green Residency, Bhopal, 462016
3. Amit Sharma, Flat 21A, Green Residencies, Bhopal, 462016
4. Amit Sharma, Flat 21A, Green Residency, Bhopal, 462018

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

**Answer:** A

**Sol: Given Address:** Amit Sharma, Flat 21A, Green Residency, Bhopal, 462016

1. Amit Sharma, Flat 21A, Green Residency, Bhopal, 462016
2. Amit Sharma, Flat 21, Green Residency, Bhopal, 462016
3. Amit Sharma, Flat 21A, Green Residencies, Bhopal, 462016
4. Amit Sharma, Flat 21A, Green Residency, Bhopal, 462018

**Now compare each address:**

1. Amit Sharma, Flat 21A, Green Residency, Bhopal, 462016

Exactly the same.

2. Amit Sharma, Flat 21, Green Residency, Bhopal, 462016  
Flat number is 21 instead of 21A.
  3. Amit Sharma, Flat 21A, Green Residencies, Bhopal, 462016  
Residency changed to Residencies.
  4. Amit Sharma, Flat 21A, Green Residency, Bhopal, 462018  
Pincode is different.
- So, only **Address 1** is exactly the same as the given address.  
Thus, correct option is (a).

**Q.9** If CLOUD is coded as ENQWF, how is RAIN coded?

- A. TCKP
- B. TCKO
- C. TCJO
- D. TDKO

**Answer:** A

**Sol: Given:** If CLOUD is coded as ENQWF.

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,** CLOUD - ENQWF

C + 2 = E, L + 2 = N, O + 2 = Q, U + 2 = W, D + 2 = F

Similarly,

RAIN - ?

R + 2 = T, A + 2 = C, I + 2 = K, N + 2 = P

So, RAIN is coded as **TCKP**.

Thus, correct option is (a).

**Q.10** A mixture contains milk and water in the ratio 3 : 5. If the total quantity is 40 litres, how much milk should be added to make the ratio 1 : 1?

- A. 8 L
- B. 10 L
- C. 12 L
- D. 15 L

**Answer:** B

**Sol: Given:**

A mixture contains milk and water in the ratio 3 : 5. If the total quantity is 40 litres.

**Solution:**

Total parts = (3 + 5 = 8)

Total quantity = 40 litres

Milk =  $(\frac{3}{8} \times 40 = 15)$  L

Water =  $(\frac{5}{8} \times 40 = 25)$  L

To make the ratio 1 : 1, milk must equal water.

Water remains 25 L, so milk should also be 25 L.

Milk to be added:

25 - 15 = **10 L**

So, **10 L** milk should be added to make the ratio 1 : 1.

Thus, correct option is (b).

**Q.11** Read the following statement carefully and identify the conclusion(s) that follow.

**Statement:**

All registered voters received voter ID cards.

**Conclusions:**

I. Some people received voter ID cards.

II. No unregistered person received a voter ID card.

- A. Only I follows

- B. Only II follows
- C. Both I and II follow
- D. Neither I nor II follows

**Answer:** A

**Sol: Statement:**

All registered voters received voter ID cards.

**Conclusions:**

I. Some people received voter ID cards.

This **follows**, because if all registered voters received voter ID cards, then at least some people (the registered voters) must have received them.

II. No unregistered person received a voter ID card.

This does **not follow**, because the statement says nothing about unregistered people. They may or may not have received voter ID cards.

So, **only I follows**.

Thus, correct option is (a).

**Q.12** Each letter of the word given below is arranged in alphabetical order. How many letters are there between the 4th letter from the left and the 3rd letter from the right in the new arrangement? HOSPITAL

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

**Answer:** A

**Sol: Given:** HOSPITAL

Arrange the letters of HOSPITAL in alphabetical order:

A, H, I, L, O, P, S, T

4th letter from the left = L

3rd letter from the right = P

Only O lies between L and P.

So, **one** letters are there between the 4th letter from the left and the 3rd letter from the right in the new arrangement.

Thus, correct option is (a).

**Q.13** What should come at the place of the question mark (?) in the following series?

2, 3, 8, 9, 26, 27, ?

- A. 54
- B. 56
- C. 80
- D. 82

**Answer:** C

**Sol: Given:** 2, 3, 8, 9, 26, 27, ?

Separate them into two sequences:

1st sequence: 2, 8, 26, ?

$$2 \times 3 + 2 = 8$$

$$8 \times 3 + 2 = 26$$

$$26 \times 3 + 2 = \mathbf{80}$$

2nd sequence: 3, 9, 27

Each number is multiplied by 3.

$$3 \times 3 = 9$$

$$9 \times 3 = 27$$

So, the missing term is **80**.

Thus, correct option is (c).

**Q.14** Select the letter-cluster from the given options that will replace the question mark (?) in the following series.

ABZ, BCY, CDX, DEW, ?

- A. EEV
- B. EFV
- C. EFU

D. EFX

**Answer:** B

**Sol: Given:** ABZ, BCY, CDX, DEW, ?

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 + 1, 2nd letter + 1 and 3rd letter - 1 place.

**For,** 1st letter

A + 1 = B, B + 1 = C, C + 1 = D, D + 1 = E

**For,** 1st letter

B + 1 = C, C + 1 = D, D + 1 = E, E + 1 = F

**For,** 1st letter

Z - 1 = Y, Y - 1 = X, X - 1 = W, W - 1 = V

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

Thus, correct option is (b).

**Q.15** In the following question, the second word is formed by rearranging the letters of the first word using a specific pattern. Apply the same pattern to the third word.

PLANET : LPAENT :: ORANGE : ?

- A. ROAGNE
- B. OARNGE
- C. OGRANE
- D. OARNEG

**Answer:** A

**Sol: Given:** PLANET : LPAENT :: ORANGE : ?

**Logic:** Position of letters are interchanged.

**For,** PLANET : LPAENT



Similarly,

ORANGE : ?



So, ORANGE : **ROAGNE**

Thus, correct option is (a).

**Q.16** Select the letter-cluster that can replace the question mark (?) in the given series.

LMP, NOR, PQT, ?

- A. RVU
- B. RUV
- C. STV
- D. RSV

**Answer:** D

**Sol: Given:** LMP, NOR, PQT, ?

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.

L + 2 = N, N + 2 = P, P + 2 = R

M + 2 = O, O + 2 = Q, Q + 2 = S

P + 2 = R, R + 2 = T, T + 2 = V

So, the missing term is **RSV**.  
Thus, correct option is (d).

**Q.17** If  $9/11 = A$  and  $3/7 = B$ , then find the value of  $A - B$ .

- A. 0.29
- B. 0.39
- C. 0.35
- D. 0.22

**Answer:** B

**Sol: Given:**

If  $9/11 = A$  and  $3/7 = B$ .

**Solution:**

$$A = \frac{9}{11} \text{ and } B = \frac{3}{7}$$

Convert to decimals:

$$A = \frac{9}{11} \approx 0.8181$$

$$B = \frac{3}{7} \approx 0.4285$$

Now find the difference:

$$A - B \approx 0.8181 - 0.4285 = 0.3896$$

So, **0.39** the value of  $A - B$ .

Thus, correct option is (b).

**Q.18** Pointing to a woman, Rahul said, "She is the wife of my father's only son." How is the woman related to Rahul?

- A. Sister
- B. Mother
- C. Wife
- D. Sister-in-law

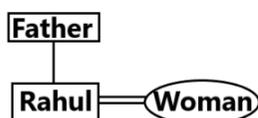
**Answer:** C

**Sol: Given:**

Pointing to a woman, Rahul said, "She is the wife of my father's only son."

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

**From the given information blood relation diagram will be.**



So, the woman is **wife** of Rahul.

Thus, correct option is (c).

**Q.19** How many meaningful four-letter English words can be formed using the 1st, 3rd, 5th and 6th letters of the word "TEACHER", using each letter only once in each word?

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

**Answer:** B

**Sol: Given:** TEACHER

Positions and letters:

1st letter = T

3rd letter = A

5th letter = H

6th letter = E

So, the letters are: T, A, H, E

Now form meaningful four-letter English words using each letter once: HEAT and HATE

No other meaningful four-letter English words can be formed.

Total meaningful words = **2**

So, **2** words can be formed using the 1st, 3rd, 5th and 6th letters of the word.

Thus, correct option is (b).

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**Q.20** What comes next in the given number series?

1, 8, 27, 64, 125, ?

- A. 196
- B. 216
- C. 225
- D. 256

**Answer:** B

**Sol: Given:** 1, 8, 27, 64, 125, ?

**Logic:** Numbers are perfect cube of natural number from 1.

$$1 = 1^3$$

$$8 = 2^3$$

$$27 = 3^3$$

$$64 = 4^3$$

$$125 = 5^3$$

Next number = 6

$$6^3 = \mathbf{216}$$

So, the missing term is **216**.

Thus, correct option is (b).

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**Q.21** Which of the following alternatives will replace the question mark?

Ignition, Acceleration, Motion, Deceleration, ?

- A. Speed
- B. Stop
- C. Brake
- D. Control

**Answer:** B

**Sol: Given:** Ignition, Acceleration, Motion, Deceleration, ?

The words represent stages of movement in sequence:

Ignition → starting the process

Acceleration → gaining speed

Motion → moving steadily

Deceleration → slowing down

Stop → coming to rest

So, the logical continuation after Deceleration is **Stop**.

Thus, correct option is (b).

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**Q.22** In the following question, select the related word from the given alternatives.

Ontology : Being :: Aesthetics : ?

- A. Beauty
- B. Logic
- C. Knowledge
- D. Reality

**Answer:** A

**Sol: Given:** Ontology : Being :: Aesthetics : ?

**Ontology** is a branch of philosophy that studies **being** or existence.

Similarly,

Aesthetics : ?

**Aesthetics** is a branch of philosophy that studies **beauty**, art and taste.

Thus, correct option is (a).

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**Q.23** If the sum of 48 and 52 is multiplied by 3, what will be the result?

- A. 300
- B. 294
- C. 312
- D. 288

**Answer:** A

**Sol: Given:**

If the sum of 48 and 52 is multiplied by 3.

**Solution:**

Sum:

$$48 + 52 = 100$$

Now multiply by 3:

$$100 \times 3 = \mathbf{300}$$

So, **300** will be the result.

Thus, correct option is (a).

---

**Q.24** Identify the assumptions that must be implicit for the statement to be valid.

**Statement:**

Despite improved internet speeds, cybersecurity threats continue to increase globally.

**Assumptions:**

- I. Faster internet increases digital exposure.
- II. Cyber threats are unaffected by internet speed.
- III. Cybersecurity measures are inadequate worldwide.

- A. Only I
- B. Only I and III
- C. Only II
- D. All I, II and III

**Answer:** B

**Sol: Statement:**

Despite improved internet speeds, cybersecurity threats continue to increase globally.

**Assumptions:**

I. Faster internet increases digital exposure.

This is **implicit**. Improved internet speeds usually lead to more online activity, which can increase exposure to cyber threats.

II. Cyber threats are unaffected by internet speed.

This is **not** necessary. The statement does not say threats are independent of speed; it only says they continue to increase despite improvements.

III. Cybersecurity measures are inadequate worldwide.

This is **implicit**. If threats are increasing globally despite technological improvement, it suggests current cybersecurity measures are not sufficient.

So, **only I and III** are implicit.

Thus, correct option is (b).

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**Q.25** If  $4 @ 2 = 12$  and  $6 @ 3 = 27$ , then what is the value of  $8 @ 4$ ?

- A. 48
- B. 64
- C. 32
- D. 40

**Answer:** A

**Sol: Given:** If  $4 @ 2 = 12$  and  $6 @ 3 = 27$

**Logic:**  $1st\ number^2 - 2nd\ number^2 = 3rd\ number$

**For**,  $4 @ 2 = 12$

$4^2 - 2^2 = 16 - 4 = 12$

**For**,  $6 @ 3 = 27$

$6^2 - 3^2 = 36 - 9 = 27$

Similarly,

$8 @ 4 = ?$

$8^2 - 4^2 = 64 - 16 = 48$

Thus, correct option is (a).

**Q.26** Which of the following statements correctly reflect India's recent digital governance initiatives?

1. DigiLocker enables citizens to store official documents digitally.

2. BharatNet focuses on urban metro connectivity only.

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

**Answer:** A

**Sol:** The correct answer is **(A) Only 1**

**Explanation:**

- **Statement 1 is Correct:** DigiLocker is a flagship initiative under the Digital India programme. It provides a cloud-based platform for issuance and verification of documents & certificates digitally, thus eliminating the use of physical documents.

- **Statement 2 is Incorrect:** BharatNet is not focused on urban metro connectivity. Its primary objective is to provide high-speed broadband connectivity to all 2.5 lakh Gram Panchayats (villages) in India to bridge the digital divide between rural and urban areas.

**Information Booster:**

- **Digital India:** Launched in 2015, it aims to transform India into a digitally empowered society and knowledge economy.

- **BharatNet (formerly NOFN):** It is the world's largest rural broadband connectivity project using Optical Fibre.

- **UMANG:** Unified Mobile Application for New-age Governance, which provides a single platform for all Indian Citizens to access pan-India e-Gov services.

**Additional Knowledge:**

- **Urban Connectivity:** Initiatives like the "Smart Cities Mission" focus on urban infrastructure, while BharatNet specifically targets the rural backbone.

- **National Digital Literacy Mission (NDLM):** Complements infrastructure projects by ensuring people have the skills to use digital tools.

**Q.27** Assertion (A): GST is a destination-based tax.

Reason (R): GST is levied only on manufacturing.

- 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:** C

**Sol:** The correct answer is **(C) A is true, but R is false**

**Explanation:**

- **Assertion (A) is True:** Goods and Services Tax (GST) is indeed a destination-based consumption tax. This means the tax is collected by the state where the goods or services are finally consumed, rather than the state where they were produced.

- **Reason (R) is False:** GST is not levied "only" on manufacturing. It is a multi-stage tax levied on every value addition, including manufacturing, sale, and provision of services.

- Unlike the old Excise Duty which was specific to manufacturing, GST covers the entire supply chain until the final retail sale.

**Information Booster:**

- **IGST:** Integrated GST is collected by the Central Government on inter-state supply of goods and services.

- **Dual GST:** India follows a dual GST model where both the Centre (CGST) and the States (SGST) simultaneously levy tax on a common base.

- **Input Tax Credit (ITC):** A key feature of GST that allows taxpayers to claim credit for taxes paid on inputs, thereby avoiding the cascading effect of taxes.

**Additional Knowledge:**

- **Origin-based tax:** Before GST, many taxes like Central Sales Tax (CST) were origin-based, where the tax revenue went to the state of production.
- **Cascading Effect:** This refers to "tax on tax." GST was introduced to eliminate this by providing a seamless credit flow throughout the value chain.

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**Q.28** What is the main objective of the Right to Information Act, 2005?

- A. To regulate media
- B. To ensure transparency in governance
- C. To control elections
- D. To promote digital literacy

**Answer:** B

**Sol:** The correct answer is **(B) To ensure transparency in governance**

**Explanation:**

- The RTI Act was enacted to provide a practical regime for citizens to access information under the control of public authorities.
- Its primary goal is to promote transparency and accountability in the working of every public authority, thereby curbing corruption.
- It empowers citizens to ask questions and seek information from the government, making democracy more participative and meaningful.

**Information Booster:**

- **Article 19(1)(a):** The Supreme Court has held that the right to information is a fundamental right derivative of the right to freedom of speech and expression.
- **Exemptions:** Section 8 of the RTI Act lists categories of information exempt from disclosure, such as matters related to national security or cabinet papers.
- **Timeline:** Information must generally be provided within 30 days of the request. If it concerns the life or liberty of a person, it must be provided within 48 hours.

**Additional Knowledge:**

- **To regulate media (Option A):** Media regulation is usually handled by bodies like the Press Council of India (PCI) or through specific broadcasting laws, not the RTI Act.
- **To control elections (Option C):** Election control is the mandate of the Election Commission of India under Article 324.
- **To promote digital literacy (Option D):** While RTI can be filed online, digital literacy is promoted through schemes like PMGDISHA (Pradhan Mantri Gramin Digital Saksharta Abhiyan).

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**Q.29** What change did the Charter Act of 1813 bring to the East India Company?

- A. Ended Company's trade monopoly
- B. Abolished Company rule
- C. Introduced universal suffrage
- D. Created provincial governments

**Answer:** A

**Sol:** The correct answer is **(A) Ended Company's trade monopoly**

**Explanation:**

- The Charter Act of 1813 ended the commercial monopoly of the East India Company in India; however, the Company's monopoly in trade with China and trade in tea was kept intact.
- It allowed all British merchants to trade with India, reflecting the growing influence of 'laissez-faire' and the demands of British industrialists during the Industrial Revolution.
- The Act also asserted the sovereignty of the British Crown over the Indian territories held by the Company.

**Information Booster:**

- **Education:** The Act provided for a sum of one lakh rupees to be set aside annually for the promotion of education and the encouragement of learned Indians.
- **Missionaries:** It allowed Christian missionaries to come to India for the purpose of enlightening the people.
- **Extension:** The Company's charter was extended for another 20 years.

**Additional Knowledge:**

- **Abolished Company rule (Option B):** This happened much later through the Government of India Act 1858, following the Revolt of 1857.
  - **Universal Suffrage (Option C):** This was introduced only with the commencement of the Indian Constitution in 1950.
  - **Charter Act 1833:** This act eventually ended the Company's monopoly even in tea and China trade, making it a purely administrative body.
-

**Q.30** Which of the following statements about Red Fort are correct?

1. It was constructed during the reign of Shah Jahan.
2. It is located on the banks of the Yamuna River.
3. It served as the main residence of Mughal emperors.

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**Answer:** D

**Sol:** The correct answer is **(D) 1, 2 and 3**

**Explanation:**

- **Statement 1:** The Red Fort (Lal Qila) was commissioned by the Mughal Emperor Shah Jahan in 1638, when he decided to shift his capital from Agra to Delhi (Shahjahanabad).
- **Statement 2:** It is situated on the banks of the Yamuna River. Its design took advantage of the river's water for filling the moats and for the "Nahr-i-Bihisht" (Stream of Paradise) canals.
- **Statement 3:** For nearly 200 years, until 1857, it served as the main residence of the Mughal emperors. It was the ceremonial and political center of the Mughal state.

**Information Booster:**

- **UNESCO World Heritage Site:** The Red Fort Complex was designated a UNESCO World Heritage site in 2007.
- **Architect:** Ustad Ahmad Lahori, the same architect who designed the Taj Mahal, is credited with the design of the Red Fort.
- **Structures inside:** Key structures include the Diwan-i-Aam (Hall of Public Audience), Diwan-i-Khas (Hall of Private Audience), and the Moti Masjid (Pearl Mosque).

**Additional Knowledge:**

- The fort is named for its massive enclosing walls of red sandstone.
- It is the site from which the Prime Minister of India addresses the nation on Independence Day (August 15) every year.

**Q.31** According to recent reports, which factor has significantly impacted global peace trends?

- A. Technological innovation
- B. Armed conflicts
- C. Tourism growth
- D. Agricultural productivity

**Answer:** B

**Sol:** The correct answer is **(B) Armed conflicts**

**Explanation:**

- Reports like the Global Peace Index (GPI) have consistently shown that the world is becoming less peaceful, primarily due to an increase in armed conflicts.
- Factors include the rise in internal conflicts, cross-border wars, and the internationalization of domestic disputes.
- These conflicts lead to increased military expenditure, displacement of people (refugees), and instability in global markets.

**Information Booster:**

- **Global Peace Index (GPI):** Produced by the Institute for Economics and Peace (IEP), it ranks nations according to their level of peacefulness.
- **Indicators:** GPI uses 23 indicators grouped into three themes: Societal Safety and Security, Ongoing Domestic and International Conflict, and Militarization.
- **Impact of Conflict:** Beyond human loss, conflicts have a massive economic impact, often costing trillions of dollars in global GDP.

**Additional Knowledge:**

- **Technological innovation (Option A):** While technology affects warfare (drones, cyber warfare), the physical presence of "armed conflict" is the direct cause cited for the decline in peace.
- **Tourism and Agriculture (Options C & D):** These are generally positive indicators of development but do not dictate global peace trends to the same extent as military conflict.

**Q.32** The dependency ratio refers to:

- A. Ratio of imports to exports
- B. Ratio of dependent population to working population
- C. Ratio of GDP to population
- D. Difference between birth and death rates

**Answer:** B

**Sol:** The correct answer is **(B) Ratio of dependent population to working population**

**Explanation:**

- The dependency ratio is an age-population ratio of those typically not in the labor force (the dependent part ages 0 to 14 and 65+) and those typically in the labor force (the productive part ages 15 to 64).
- It is used to measure the pressure on the productive population of a country.
- A high dependency ratio indicates that the working-age population and the overall economy face a greater burden in supporting the young and the elderly.

**Information Booster:**

- **Demographic Dividend:** This occurs when the dependency ratio is low, meaning the proportion of the working-age population is high, potentially leading to rapid economic growth.
- **Child Dependency Ratio:** specifically the ratio of those aged 0–14 to the 15–64 age group.
- **Old-age Dependency Ratio:** specifically the ratio of those aged 65+ to the 15–64 age group.

**Additional Knowledge:**

- **Ratio of imports to exports (Option A):** This relates to the Trade Balance or Terms of Trade.
- **Ratio of GDP to population (Option C):** This is the definition of GDP per capita, which measures the average economic output per person.
- **Difference between birth and death rates (Option D):** This is known as the Natural Growth Rate of a population.

---

**Q.33** Which statement highlights a key feature of India's IT industry?

- A. Depends entirely on imports
- B. Strong global outsourcing presence
- C. Limited to domestic markets
- D. Controlled only by government

**Answer:** B

**Sol:** The correct answer is **(B) Strong global outsourcing presence**

**Explanation:**

- India is a global leader in the IT-BPM (Business Process Management) sector. It is the world's largest sourcing destination, accounting for approximately 55% of the global service sourcing market.
- The industry is characterized by cost competitiveness, a large pool of English-speaking skilled manpower, and high-quality software development capabilities.
- Major Indian IT hubs include Bengaluru (the Silicon Valley of India), Hyderabad, Pune, and Chennai.

**Information Booster:**

- **NASSCOM:** The National Association of Software and Service Companies is the premier trade body and chamber of commerce of the Tech industry in India.
- **GDP Contribution:** The IT sector contributes significantly to India's GDP (roughly 7-8%) and is a major source of foreign exchange earnings.
- **Y2K Crisis:** The Y2K bug at the turn of the millennium was a major turning point that established Indian software expertise on the global stage.

**Additional Knowledge:**

- **Depends on imports (Option A):** While India imports hardware, it is a massive exporter of software and services.
- **Limited to domestic (Option C):** The industry is primarily export-oriented, though the domestic market is also growing.
- **Controlled by Government (Option D):** The IT sector is largely private-led, with the government acting as a facilitator through policies like STPI (Software Technology Parks of India).

---

**Q.34** Under recent climate action plans, which sector receives major focus for adaptation?

- A. Defence
- B. Agriculture
- C. Space research
- D. Banking

**Answer:** B

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

**Explanation:**

- Agriculture is highly vulnerable to climate change due to its dependence on monsoon patterns, temperature, and water availability.
- Climate adaptation in agriculture includes developing heat-resistant crop varieties, improving irrigation efficiency (per drop more crop), and promoting organic farming.
- National Mission for Sustainable Agriculture (NMSA) is one of the eight missions under India's National Action Plan on Climate Change (NAPCC).

**Information Booster:**

- **NAPCC:** Launched in 2008, it outlines eight national missions including Solar Mission, Enhanced Energy Efficiency, Sustainable Habitat, Water Mission, etc.
- **Climate Resilient Agriculture (NICRA):** A network project of the ICAR aimed at enhancing the resilience of Indian agriculture to climate change through strategic research and technology demonstration.
- **COP (Conference of Parties):** Global climate summits where countries discuss mitigation (reducing emissions) and adaptation (adjusting to impacts).

**Additional Knowledge:**

- **Defence (Option A):** While climate change is a security threat, it is not the primary focus of climate "adaptation" funds compared to food security.
- **Space Research (Option C):** Space technology helps in monitoring climate change but is not the sector being "adapted" to climate impacts.
- **Banking (Option D):** Banking is shifting toward "Green Finance," but it is an enabler of climate action rather than a primary sector for biological/environmental adaptation.

**Q.35** Which Article of the Constitution deals with the appointment of the Prime Minister?

- A. Article 72
- B. Article 74
- C. Article 75
- D. Article 76

**Answer:** C

**Sol:** The correct answer is **(C) Article 75**

**Explanation:**

- Article 75 of the Indian Constitution specifically states that the Prime Minister shall be appointed by the President and the other Ministers shall be appointed by the President on the advice of the Prime Minister.
- It also mentions that the Ministers shall hold office during the pleasure of the President and are collectively responsible to the Lok Sabha.
- The Prime Minister is the head of the Union Council of Ministers.

**Information Booster:**

- **Qualification:** To be a PM, one must be a member of either the Lok Sabha or Rajya Sabha. If not a member at the time of appointment, they must become one within 6 months.
- **Oath:** The President administers the oath of office and secrecy to the Prime Minister.
- **Real Executive:** While the President is the nominal head (De Jure), the PM is the real executive head (De Facto) of the government.

**Additional Knowledge:**

- **Article 72 (Option A):** Deals with the power of the President to grant pardons, reprieves, respites, or remissions of punishment.
- **Article 74 (Option B):** Deals with the Council of Ministers to aid and advise the President.
- **Article 76 (Option D):** Deals with the appointment and duties of the Attorney General for India.

**Q.36** Why are footballs generally spherical in shape?

- A. For aesthetic appeal
- B. To ensure uniform motion
- C. To reduce friction
- D. To increase weight

**Answer:** B

**Sol:** The correct answer is **(B) To ensure uniform motion**

**Explanation:**

- A spherical shape ensures that the ball has the same aerodynamic properties and physical response regardless of the direction in which it is kicked or how it spins.
- It provides a predictable bounce and allows for smoother rolling on the ground.
- Mechanically, a sphere has the best volume-to-surface area ratio, allowing it to maintain internal air pressure evenly throughout the casing.

**Information Booster:**

- **Aerodynamics:** The smooth, round shape allows the ball to travel through the air with consistent drag, which is essential for curved shots (the Magnus Effect).
- **Evolution:** Early footballs were often made from animal bladders and were roughly oval; the modern spherical shape was standardized to improve

the fairness and skill-level of the game.

- **Magnus Effect:** This is the phenomenon where a spinning ball curves away from its principal flight path, heavily dependent on the ball's spherical symmetry.

**Additional Knowledge:**

- **Aesthetic appeal (Option A):** While they look good, the shape is dictated by physics and gameplay requirements.
- **Reduce friction (Option C):** While rolling friction is lower for a sphere than most shapes, the primary reason for the shape is the predictability of motion.
- **Increase weight (Option D):** Shape does not necessarily determine weight; the materials used do.

---

**Q.37** Which of the following statements about the atmosphere is correct?

1. Troposphere is the lowest layer of the atmosphere.
2. Ionosphere lies above the mesosphere.

- A. Statement 1 only  
B. Statement 2 only  
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 Troposphere is the lowest layer of Earth's atmosphere. It contains roughly 75-80% of the atmosphere's mass and almost all water vapor. All weather phenomena (clouds, rain, etc.) occur here.
- **Statement 2 is Correct:** The Ionosphere is a part of the upper atmosphere (specifically within the Thermosphere) that lies above the mesosphere. It is characterized by high concentrations of ions and free electrons and facilitates long-distance radio communication.

**Information Booster:**

- **Order of Layers:** From surface upwards: Troposphere, Stratosphere, Mesosphere, Thermosphere (including Ionosphere), and Exosphere.
- **Ozone Layer:** Found in the Stratosphere, it protects Earth from harmful UV radiation.
- **Mesosphere:** This is the coldest layer where meteors usually burn up upon entry.

**Additional Knowledge:**

- **Tropopause:** The boundary between the troposphere and the stratosphere.
- **Thermosphere:** In this layer, temperature increases rapidly with height due to the absorption of solar radiation.

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**Q.38** Which statement best describes the contribution of Kabir to Indian literature?

- A. Promoted ritualistic worship  
B. Criticized social inequalities through verses  
C. Wrote only court poetry  
D. Composed epics in Sanskrit

**Answer:** B

**Sol:** The correct answer is **(B) Criticized social inequalities through verses**

**Explanation:**

- Kabir Das was a 15th-century Indian mystic poet and saint, whose writings influenced Hinduism's Bhakti movement and his verses are found in Sikhism's scripture Guru Granth Sahib.
- He is famous for his 'Dohas' (couplets) and 'Bijak' through which he criticized the hypocrisy of organized religions and the caste system.
- He emphasized the oneness of God and promoted a path of inner devotion rather than external rituals or idol worship.

**Information Booster:**

- **Nirguna Bhakti:** Kabir belonged to the Nirguna school of Bhakti, which believes in a formless God.
- **Language:** He wrote in a language that was a mix of Hindi, Bhojpuri, and other dialects, often called 'Sadhukkari Bhasha' (the language of seekers), making his message accessible to common people.
- **Legacy:** His followers are known as Kabir Panthis.

**Additional Knowledge:**

- **Ritualistic worship (Option A):** Kabir was a staunch opponent of rituals, pilgrimage, and idol worship.
- **Court poetry (Option C):** Unlike many medieval poets, Kabir was a weaver by profession and stayed away from royal courts, focusing on social and spiritual reform.
- **Sanskrit (Option D):** Kabir intentionally avoided Sanskrit (the language of the elite) and used vernacular languages to connect with the masses.

---

**Q.39** What is the primary function of mitochondria?

- A. Protein synthesis
- B. Energy production
- C. Cell division
- D. Waste removal

**Answer:** B

**Sol:** The correct answer is **(B) Energy production**

**Explanation:**

- Mitochondria are often referred to as the "Powerhouse of the Cell."
- Their primary function is to perform cellular respiration, which involves taking in nutrients from the cell, breaking them down, and turning them into energy.
- This energy is produced in the form of ATP (Adenosine Triphosphate), which the cell uses to perform various biological processes.

**Information Booster:**

- **Structure:** Mitochondria have a double-membrane structure. The inner membrane is folded into structures called cristae to increase surface area for chemical reactions.
- **Semi-autonomous:** Mitochondria contain their own DNA (mtDNA) and ribosomes, meaning they can produce some of their own proteins and replicate independently of the cell.
- **Endosymbiotic Theory:** It is widely believed that mitochondria originated from free-living bacteria that were engulfed by ancestral eukaryotic cells.

**Additional Knowledge:**

- **Protein synthesis (Option A):** This is primarily the function of Ribosomes and the Rough Endoplasmic Reticulum.
- **Cell division (Option C):** This process is regulated by the nucleus and involves structures like centrioles and the spindle apparatus.
- **Waste removal (Option D):** This is the primary role of Lysosomes (which contain digestive enzymes) and vacuoles.

---

**Q.40** At the 1980 Moscow Olympics, which timing did India record in men's hockey final?

- A. 2-1
- B. 3-2
- C. 1-0
- D. 4-3

**Answer:** D

**Sol:** The correct answer is **(D) 4-3**

**Explanation:**

- In the 1980 Moscow Olympics men's hockey final, India defeated Spain with a score of 4-3.
- This victory earned India its eighth and most recent Olympic gold medal in field hockey.
- The Indian team was captained by V. Bhaskaran. The match was intense, with India leading 3-0 at one point before Spain staged a comeback, making the final score 4-3.

**Information Booster:**

- **Historical Context:** The 1980 Olympics were boycotted by several Western nations (led by the US) due to the Soviet invasion of Afghanistan, which affected the competitiveness of the field.

- **India's Dominance:** India had previously won gold medals in 1928, 1932, 1936, 1948, 1952, 1956, and 1964.
- **Goal Scorers:** In the final, Bir Bahadur Chhetri was the goalkeeper, and Surinder Singh Sodhi was the top scorer for India in the tournament.

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**Q.41** Examine the statements about Chandrayaan-3 mission:

1. It successfully landed near the Moon's south pole.
2. It carried an orbiter along with the lander and rover.

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

**Answer:** A

**Sol:** The correct answer is **(A) Only 1**

**Explanation:**

- **Statement 1 is Correct:** On August 23, 2023, India's Chandrayaan-3 successfully performed a soft landing near the lunar south pole, making India the first country to reach that specific region and the fourth country to soft-land on the moon.
- **Statement 2 is Incorrect:** Unlike Chandrayaan-2, Chandrayaan-3 did not carry an orbiter. It consisted of a Propulsion Module, a Lander (Vikram), and a Rover (Pragyan). The mission used the existing orbiter from Chandrayaan-2 for communications.

**Information Booster:**

- **Shiv Shakti Point:** The landing site of Chandrayaan-3 was named 'Shiv Shakti Point' by the Indian government.
- **National Space Day:** August 23 was declared as National Space Day to commemorate this achievement.
- **Payloads:** Key payloads included ChaSTE (to measure thermal properties) and ILSA (to measure seismicity).

**Additional Knowledge:**

- **Propulsion Module:** Instead of an orbiter, the Propulsion Module's role was to carry the lander/rover to a 100km lunar orbit and also carry the SHAPE payload to study Earth from lunar orbit.
- **LVM3:** The mission was launched using the LVM3-M4 rocket, India's heaviest launch vehicle.

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**Q.42** Which Indian state has the highest literacy rate as per Census 2011?

- A. Kerala
- B. Tamil Nadu
- C. Himachal Pradesh
- D. Punjab

**Answer:** A

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

**Explanation:**

- According to the 2011 Census, Kerala has the highest literacy rate in India at 94.00%.
- Male literacy in Kerala was 96.11% and female literacy was 92.07%.
- Kerala has consistently led India in human development indicators, including health and education, since independence.

**Information Booster:**

- **National Average:** The overall literacy rate in India according to Census 2011 was 74.04%.
- **Lowest Literacy:** Bihar had the lowest literacy rate in India at 61.80% as per the 2011 Census.
- **Lakshadweep:** Among Union Territories, Lakshadweep had the highest literacy rate at 91.85%.

**Additional Knowledge:**

- **Tamil Nadu (Option B):** Has a high literacy rate (around 80.1%) but is significantly behind Kerala.
- **Himachal Pradesh (Option C):** Known for high educational standards in North India, it had a literacy rate of 82.8%.
- **Definition:** In Census terms, a person aged 7 and above who can both read and write with understanding in any language is considered literate.

---

**Q.43** Where is the Jawaharlal Nehru Stadium located?

- A. Kolkata

- B. New Delhi
- C. Chennai
- D. Hyderabad

**Answer:** B

**Sol:** The correct answer is **(B) New Delhi**

**Explanation:**

- The main and most famous Jawaharlal Nehru Stadium is located in New Delhi. It was built by the Government of India in 1982 for the 9th Asian Games.
- It is an all-seater facility that can host football and athletics. It also served as the main venue for the 2010 Commonwealth Games.
- It is the headquarters of the Sports Authority of India (SAI).

**Information Booster:**

- **Capacity:** It is one of the largest stadiums in India, with a capacity of approximately 60,000.
- **Global Events:** It has hosted matches of the FIFA U-17 World Cup in 2017.
- **Multiple Stadiums:** While New Delhi's is the most prominent, there are other stadiums named after Jawaharlal Nehru in cities like Chennai, Kochi, and Guwahati, but in the context of GS and national landmarks, New Delhi is the primary reference.

**Additional Knowledge:**

- **Kolkata (Option A):** Famous for Salt Lake Stadium (Vivekananda Yuba Bharati Krirangan) and Eden Gardens.
- **Chennai (Option C):** Famous for M.A. Chidambaram Stadium (Chepauk).
- **Hyderabad (Option D):** Famous for Rajiv Gandhi International Cricket Stadium.

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**Q.44** Which commission recommended reforms in Centre-State financial relations?

- A. Finance Commission
- B. Sarkaria Commission
- C. Planning Commission
- D. Election Commission

**Answer:** B

**Sol:** The correct answer is **(B) Sarkaria Commission**

**Explanation:**

- The Sarkaria Commission was set up in 1983 by the Central Government to examine the relationship and balance of power between state and central governments and suggest changes within the framework of the Constitution.
- Its report, submitted in 1988, contained 247 recommendations, many of which focused on financial relations and the misuse of Article 356 (President's Rule).
- It emphasized that while the Centre should be strong, the States should not be reduced to mere administrative units.

**Information Booster:**

- **Punchhi Commission:** Set up in 2007, it was the second commission on Centre-State relations to review changes since the Sarkaria Commission.
- **Inter-State Council:** Established in 1990 based on the recommendations of the Sarkaria Commission under Article 263.
- **Chairman:** The commission was headed by Justice R.S. Sarkaria, a retired judge of the Supreme Court.

**Additional Knowledge:**

- **Finance Commission (Option A):** While it recommends the distribution of tax revenues, it is a constitutional body (Article 280) that meets periodically, not a one-time reform commission.
- **Planning Commission (Option C):** It was an advisory body for 5-year plans; it has since been replaced by NITI Aayog.
- **Election Commission (Option D):** It handles the conduct of elections, not administrative or financial relations between governments.

---

**Q.45** Which statement correctly represents the Nobel Prize in Literature?

- A. Awarded annually for scientific discoveries
- B. Recognizes outstanding literary contributions
- C. Given only to novelists
- D. Limited to European authors

**Answer:** B

**Sol:** The correct answer is **(B) Recognizes outstanding literary contributions**

**Explanation:**

- The Nobel Prize in Literature is one of the five Nobel Prizes established by the will of Alfred Nobel in 1895.
- It is awarded annually to an author from any country who has, in the words of Alfred Nobel's will, produced "in the field of literature the most outstanding work in an ideal direction."

- The Swedish Academy is responsible for selecting the laureate.

**Information Booster:**

- **First Winner:** Sully Prudhomme of France (1901).
- **Indian connection:** Rabindranath Tagore was the first non-European to win the Nobel Prize in Literature (1913) for his collection 'Gitanjali'.
- **Diverse genres:** While often given to novelists, it has also been awarded to poets (e.g., Louise Glück), playwrights (e.g., Harold Pinter), and even musicians (e.g., Bob Dylan).

**Additional Knowledge:**

- **Scientific discoveries (Option A):** These are covered by the Nobel Prizes in Physics, Chemistry, and Physiology or Medicine.
- **Novelists only (Option C):** This is incorrect as poets, essayists, and dramatists are also eligible.
- **European authors (Option D):** While criticized for being Eurocentric in the past, the prize is officially global and has been awarded to authors from every continent.

**Q.46** The National Food Security Act primarily aims to:

- A. Promote exports
- B. Provide subsidized food grains
- C. Increase agricultural taxes
- D. Encourage private farming

**Answer:** B

**Sol:** The correct answer is **(B) Provide subsidized food grains**

**Explanation:**

- The National Food Security Act (NFSA), 2013, was enacted to provide for food and nutritional security by ensuring access to adequate quantity of quality food at affordable prices.
- It covers up to 75% of the rural population and 50% of the urban population (roughly 67% of the total population) under the Targeted Public Distribution System (TPDS).
- Eligible persons are entitled to receive 5 kg of foodgrains per person per month at subsidized prices of Rs. 3/2/1 per kg for rice, wheat, and coarse grains respectively.

**Information Booster:**

- **Antyodaya Anna Yojana (AAY):** The poorest of the poor households under AAY continue to receive 35 kg of foodgrains per household per month.
- **Women Empowerment:** The Act mandates that the eldest woman of the household (18 years or above) is the head of the household for the purpose of issuing ration cards.
- **Maternity Benefit:** Pregnant women and lactating mothers are entitled to a nutritious meal and maternity benefit of at least Rs. 6,000.

**Additional Knowledge:**

- **Promote exports (Option A):** This is managed through APEDA and trade policies, not food security laws which focus on domestic consumption.
- **Increase taxes (Option C):** NFSA is a welfare scheme; it doesn't deal with taxation.
- **Private farming (Option D):** While farming is private in India, NFSA focuses on the distribution end of the food cycle to ensure the poor do not go hungry.

**Q.47** In which type of terrain are waterfalls most commonly formed?

- A. Desert plains
- B. Plateau regions
- C. Coastal plains
- D. Floodplains

**Answer:** B

**Sol:** The correct answer is **(B) Plateau regions**

**Explanation:**

- Waterfalls are most commonly found in plateau regions and mountainous terrains where there is a sudden change in elevation.
- They are formed when a river or stream flows over a precipice or a steep incline, often created by the presence of hard rock overlying softer rock (differential erosion).
- In plateau regions, the edges (escarpments) provide the necessary vertical drop for water to fall freely.
- Famous examples include the Angel Falls on the Auyán-tepui plateau in Venezuela and the Jog Falls in the Deccan Plateau of India.

**Information Booster:**

- **Knickpoint:** A point in a river's profile where there is a sharp change in channel slope, such as a waterfall or lake.
- **Plunge Pool:** The deep basin excavated at the foot of a waterfall by the action of the falling water.
- **Retreat:** Waterfalls often migrate upstream over time as the soft rock underneath is eroded and the hard rock ledge collapses.

**Additional Knowledge:**

- **Desert plains (Option A):** These are usually characterized by flat land and minimal perennial water flow, making waterfall formation rare.
  - **Coastal plains (Option C):** These are low-lying areas adjacent to the sea with gentle slopes, where rivers usually meander rather than drop vertically.
  - **Floodplains (Option D):** These are flat lands near rivers that are subject to flooding; the topography lacks the significant vertical relief required for waterfalls.
- 

**Q.48** In Indian philosophy, which two major paths to liberation are emphasized?

- A. Karma and Jnana
- B. Bhakti and Yoga
- C. Dharma and Artha
- D. Moksha and Kama

**Answer:** A

**Sol:** The correct answer is **(A) Karma and Jnana**

**Explanation:**

- In Indian philosophy, particularly within the Vedanta and Bhagavad Gita, several paths (margas) to spiritual liberation (Moksha) are identified.
- **Karma Marga:** The path of selfless action (performing duties without attachment to results).
- **Jnana Marga:** The path of knowledge and wisdom (realizing the true nature of reality and the self).
- Along with Bhakti Marga (devotion), these form the core methodologies for reaching the ultimate spiritual goal.

**Information Booster:**

- **Purusharthas:** These are the four goals of human life: Dharma (righteousness), Artha (prosperity), Kama (desire), and Moksha (liberation).
- **Bhagavad Gita:** Synthesizes these paths, teaching that while individuals may prefer one, they are ultimately complementary.
- **Advaita Vedanta:** Strongly emphasizes Jnana (knowledge) as the direct means to liberation by removing ignorance (Avidya).

**Additional Knowledge:**

- **Bhakti and Yoga (Option B):** While these are valid paths, they are often considered alongside or as subsets of the broader action-knowledge framework in classical debates.
  - **Dharma and Artha (Option C):** These are goals of worldly life, not the ultimate paths to liberation.
  - **Moksha and Kama (Option D):** Moksha is the end result (liberation), not the path itself, while Kama refers to desire/pleasure.
- 

**Q.49** Why is aluminium widely used in aircraft construction?

- A. High density
- B. Corrosion resistance and light weight
- C. Low melting point
- D. Magnetic properties

**Answer:** B

**Sol:** The correct answer is **(B) Corrosion resistance and light weight**

**Explanation:**

- Aluminium is chosen for aircraft primarily because it has a high strength-to-weight ratio. Being lightweight reduces the fuel required for flight and increases payload capacity.
- It also possesses excellent corrosion resistance because it naturally forms a thin, protective layer of aluminium oxide when exposed to air.
- It is highly ductile and easy to manufacture into complex shapes like wings and fuselage sections.

**Information Booster:**

- **Duralumin:** A common alloy of aluminium (95%) with copper (4%), magnesium (0.5%), and manganese (0.5%), used specifically in the aviation industry for added strength.
- **Comparison:** While steel is stronger, it is much heavier. While titanium is stronger and heat-resistant, it is much more expensive and difficult to work with.
- **Recyclability:** Aluminium is 100% recyclable, making it a sustainable choice for long-term manufacturing.

**Additional Knowledge:**

- **High density (Option A):** Aluminium actually has low density (about one-third of steel), which is its main advantage.
  - **Low melting point (Option C):** This is actually a disadvantage for high-speed supersonic flight (where friction heat is high), but manageable for standard aircraft.
  - **Magnetic (Option D):** Aluminium is non-magnetic, which is helpful as it doesn't interfere with the aircraft's navigation systems.
-

**Q.50** Who inaugurated India's first metro rail service in Kolkata?

- A. Rajiv Gandhi
- B. Indira Gandhi
- C. Jyoti Basu
- D. P.V. Narasimha Rao

**Answer:** B

**Sol:** The correct answer is **(B) Indira Gandhi**

**Explanation:**

- The foundation stone of the Kolkata Metro (India's first metro) was laid by then Prime Minister Indira Gandhi on December 29, 1972.
- Commercial services eventually began on October 24, 1984. Indira Gandhi was still the Prime Minister at the time of the commencement of the first section (Esplanade to Bhawanipur).
- It was a pioneering project in India, introducing the concept of rapid transit to the country long before the Delhi Metro.

**Information Booster:**

- **Kolkata Metro:** It is unique because it was the only metro system in India directly under the Ministry of Railways (it is the 17th Zone of Indian Railways).
- **Technical Aid:** The Soviet Union provided technical assistance for the initial planning of the Kolkata Metro.
- **First Section:** The first stretch was only 3.4 km long with 5 stations.

**Additional Knowledge:**

- **Rajiv Gandhi (Option A):** He became PM shortly after the inauguration following Indira Gandhi's assassination in late 1984.
- **Jyoti Basu (Option C):** He was the Chief Minister of West Bengal at the time and played a significant role in the project's execution but did not perform the official inauguration.
- **Delhi Metro:** This was inaugurated much later, in 2002, by Atal Bihari Vajpayee.

**Q.51** Table – Daily production (in units) of 5 machines over 4 days.

**Day 1** M1M2M3M4M5

**Day 1** 1150140180130160

**Day 2** 160135190135165

**Day 3** 155145185140170

**Day 4** 165150195145175

What is the average daily production of Machine M3?

- A. 187.5
- B. 185
- C. 190
- D. 182.5

**Answer:** A

**Sol: Given:**

Production of Machine M3:

Day 1 = 180, Day 2 = 190, Day 3 = 185, Day 4 = 195

**Formula Used:**

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

**Solution:**

$$\text{Total} = 180 + 190 + 185 + 195 = 750$$

$$\text{Average} = \frac{750}{4} = 187.5$$

**Final Answer:**

187.5

**Q.52** The budget of a factory is distributed among raw materials, wages, and maintenance in the ratio 4:3:3. During a year, the cost of raw materials rises by 12%, wages by 8%, and maintenance falls by 10%. What is the overall percentage change in the total budget?

- A. 0.4% decrease
- B. 4.2% increase
- C. 3.2% increase
- D. 2.0% decrease

**Answer:** B

**Sol: Given:**

$$\text{Ratio of raw materials : wages : maintenance} = 4 : 3 : 3$$

$$\text{Increase in raw materials} = 12\%$$

$$\text{Increase in wages} = 8\%$$

$$\text{Decrease in maintenance} = 10\%$$

**Formula Used:**

$$\text{Net percentage change} = \frac{\sum(\text{Ratio} \times \text{Percentage change})}{\sum \text{Ratios}}$$

**Solution:**

$$\text{Total ratio} = 4 + 3 + 3 = 10$$

$$(4 \times 12) + (3 \times 8) + (3 \times (-10))$$

$$= 48 + 24 - 30 = 42$$

$$\text{Overall change} = \frac{42}{10} = 4.2\%$$

**Final Answer:**

4.2% increase

**Q.53** Suppose  $p = \sqrt{3} + \sqrt{7}$ ,  $q = \sqrt{8} + \sqrt{2}$  and  $r = 2\sqrt{3} + 2$ . Which of the following is true?

- A.  $p < q < r$
- B.  $r < q < p$
- C.  $q < p < r$
- D.  $p < r < q$

**Answer:** C

**Sol: Given:**

$$p = \sqrt{3} + \sqrt{7}, q = \sqrt{8} + \sqrt{2}, r = 2\sqrt{3} + 2$$

**Solution:**

$$\sqrt{3} = 1.732, \sqrt{7} = 2.646$$

$$p = 1.732 + 2.646 = 4.378$$

$$\sqrt{8} = 2.828, \sqrt{2} = 1.414$$

$$q = 2.828 + 1.414 = 4.242$$

$$2\sqrt{3} = 3.464$$

$$r = 3.464 + 2 = 5.464$$

$$4.242 < 4.378 < 5.464$$

**Final Answer:**

$$q < p < r$$

**Q.54** Evaluate:  $7 - \left[ \frac{3}{4} \div \left\{ \frac{1}{8} + \left( \frac{1}{2} \times \left( 1 - \frac{1}{4} \right) \right) \right\} \right]$

- A.  $11/2$
- B.  $21/4$
- C.  $23/4$
- D.  $25/4$

**Answer:** A

**Sol: Given:**

$$7 - \left[ \frac{3}{4} \div \left\{ \frac{1}{8} + \left( \frac{1}{2} \times \left( 1 - \frac{1}{4} \right) \right) \right\} \right]$$

**Solution:**

$$7 - \left[ \frac{3}{4} \div \left\{ \frac{1}{8} + \left( \frac{1}{2} \times \left( 1 - \frac{1}{4} \right) \right) \right\} \right]$$

$$= 7 - \left[ \frac{3}{4} \div \left\{ \frac{1}{8} + \left( \frac{1}{2} \times \frac{3}{4} \right) \right\} \right]$$

$$= 7 - \left[ \frac{3}{4} \div \left\{ \frac{1}{8} + \frac{3}{8} \right\} \right]$$

$$= 7 - \left[ \frac{3}{4} \div \frac{4}{8} \right]$$

$$= 7 - \left[ \frac{3}{4} \div \frac{1}{2} \right]$$

$$= 7 - \frac{3}{2}$$

$$= \frac{11}{2}$$

**Q.55** X and Y started a business by investing ₹60,000 and ₹90,000 respectively. After 6 months, X doubled his capital, while Y reduced his capital by ₹30,000. If the total annual profit is ₹62,000, what is Y's share(to the nearest integer)?

- A. ₹28,182
- B. ₹30,105
- C. ₹33,000
- D. ₹35,512

**Answer:** A

**Sol: Given:**

$$X = 60000, Y = 90000$$

After 6 months:

$$X = 120000, Y = 60000$$

$$\text{Total profit} = 62000$$

**Formula Used:**

$$\text{Profit ratio} = \text{Capital} \times \text{Time}$$

**Solution:**

$$X : 60000 \times 6 + 120000 \times 6$$

$$= 360000 + 720000 = 1080000$$

$$Y : 90000 \times 6 + 60000 \times 6$$

$$= 540000 + 360000 = 900000$$

$$X : Y = 1080000 : 900000 = 12 : 10 = 6 : 5$$

$$\text{Total ratio} = 11$$

$$Y\text{'s share} = \frac{5}{11} \times 62000$$

$$= 28181.82$$

**Final Answer:**

$$₹28182$$

---

**Q.56** P, Q, and R invested ₹30,000, ₹40,000, and ₹50,000 respectively in a business. If the profit at the end of the year is ₹36,000, what is Q's share of the profit?

- A. ₹12,000
- B. ₹11,000
- C. ₹10,800
- D. ₹10,000

**Answer:** A

**Sol: Given:**

$$P = 30000, Q = 40000, R = 50000$$

$$\text{Total profit} = 36000$$

**Formula Used:**

$$\text{Share of profit} = \frac{\text{Individual investment}}{\text{Total investment}} \times \text{Total profit}$$

**Solution:**

$$30000 : 40000 : 50000 = 3 : 4 : 5$$

$$\text{Total ratio} = 3 + 4 + 5 = 12$$

$$Q\text{'s share} = \frac{4}{12} \times 36000$$

$$= \frac{1}{3} \times 36000 = 12000$$

**Final Answer:**

$$₹12000$$

**Q.57** A vendor sold 18 pens for ₹1,440 and gained a profit of 20%. How many pens must he sell for ₹1,408 to make a profit of 12%(to the nearest integer)?

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

**Answer:** C

**Sol: Given:**

$$18 \text{ pens sold for } 1440$$

$$\text{Profit} = 20\%$$

$$\text{New selling price} = 1408$$

$$\text{Required profit} = 12\%$$

**Formula Used:**

$$CP = \frac{SP}{1 + \frac{\text{Profit}}{100}}$$

**Solution:**

$$CP \text{ of } 18 \text{ pens} = \frac{1440}{1.20} = 1200$$

$$CP \text{ per pen} = \frac{1200}{18} = \frac{200}{3}$$

$$\text{Total CP} = \frac{1408}{1.12} = 1408 \times \frac{25}{28} = \frac{8800}{7}$$

$$\text{Number of pens} = \frac{\frac{8800}{7}}{\frac{200}{3}} = \frac{8800}{7} \times \frac{3}{200} = \frac{132}{7}$$

**Final Answer:**

$$\frac{132}{7} = 18.85 = 19$$

**Q.58** From a 54-litre container of pure milk, 9 litres are removed and replaced by water. This process is repeated three times in total. What is the final quantity of milk left in the container?

- A. 30.37 litres
- B. 31.25 litres
- C. 34.29 litres
- D. 36.10 litres

**Answer:** B

**Sol: Given:**

Total milk = 54

Milk removed each time = 9

Number of operations = 3

**Formula Used:**

$$\text{Final milk} = \text{Initial quantity} \left(1 - \frac{\text{Removed}}{\text{Total}}\right)^n$$

**Solution:**

$$1 - \frac{9}{54} = \frac{45}{54} = \frac{5}{6}$$

$$\text{Final milk} = 54 \left(\frac{5}{6}\right)^3$$

$$= 54 \times \frac{125}{216}$$

$$= \frac{54}{216} \times 125$$

$$= \frac{1}{4} \times 125 = 31.25$$

**Final Answer:**

31.25 litres

**Q.59** In a town, the present number of employed people is 40,000. If the number of employed men decreases by 4% and the number of employed women increases by 12%, the total employed population becomes 40,480. What is the present number of employed men?

- A. 20,000
- B. 22,000
- C. 27,000
- D. 26,000

**Answer:** C

**Sol: Given:**

Total employed = 40000

Decrease in men = 4%

Increase in women = 12%

New total = 40480

**Formula Used:**

$$\text{New value} = \text{Original value} \left(1 \pm \frac{\text{Percentage}}{100}\right)$$

**Solution:**

Let number of men =  $x$

Then women =  $40000 - x$

$$0.96x + 1.12(40000 - x) = 40480$$

$$0.96x + 44800 - 1.12x = 40480$$

$$-0.16x = -4320$$

$$x = \frac{4320}{0.16} = 27000$$

**Final Answer:**

27000

**Q.60** A shopkeeper ordered 12 kg of premium coffee and some kg of regular coffee. The price of premium coffee per kg was three times that of regular coffee. Due to a billing mistake, the quantities of the two types were interchanged, which reduced the total bill by 30%. What was the ratio of the quantity of premium coffee to regular coffee in the original order?

- A. 21:31
- B. 23:24
- C. 14:13
- D. 23:11

**Answer:** D

**Sol: Given:**

Premium coffee = 12 kg

Let regular coffee =  $x$  kg

Price of premium =  $3 \times$  price of regular

Bill reduced by 30%

**Formula Used:**

Reduced amount = 70% of original amount

**Solution:**

Let price of regular coffee =  $p$

Price of premium coffee =  $3p$

$$\text{Original bill} = 12 \times 3p + x \times p = 36p + xp$$

$$\text{Wrong bill} = 12 \times p + x \times 3p = 12p + 3xp$$

$$12p + 3xp = 0.7(36p + xp)$$

$$12 + 3x = 0.7(36 + x)$$

$$12 + 3x = 25.2 + 0.7x$$

$$2.3x = 13.2$$

$$x = \frac{132}{23}$$

$$\text{Required ratio} = 12 : \frac{132}{23} = 276 : 132 = 23 : 11$$

**Final Answer:**

23 : 11

**Q.61** P and Q together can complete a job in 16 days. Q and R together can complete it in 24 days, and R and P together can do it in 32 days. In how many days can P alone complete the job?

- A.  $30\frac{1}{2}$  days
- B. 32 days
- C.  $38\frac{2}{5}$  days
- D. 48 days

**Answer:** C

**Sol: Given:**

$$P + Q = \frac{1}{16}$$

$$Q + R = \frac{1}{24}$$

$$R + P = \frac{1}{32}$$

**Formula Used:**

$$\text{Work rate} = \frac{1}{\text{Time}}$$

**Solution:**

$$(p + q) + (q + r) + (r + p) = \frac{1}{16} + \frac{1}{24} + \frac{1}{32}$$

$$2(p + q + r) = \frac{6 + 4 + 3}{96} = \frac{13}{96}$$

$$p + q + r = \frac{13}{192}$$

$$p = \frac{13}{192} - \frac{1}{24}$$

$$p = \frac{13 - 8}{192} = \frac{5}{192}$$

$$\text{Time taken by P} = \frac{1}{p} = \frac{192}{5} = 38\frac{2}{5} \text{ days}$$

**Final Answer:**

$$38\frac{2}{5} \text{ days}$$

**Exam - Hall Method:**

$$\text{LCM}(16, 24, 32) = 96 \text{ Total Work}$$

$$P+Q = 96/16 = 6$$

$$Q+R = 96/24 = 4$$

$$R+P = 96/32 = 3$$


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$$\sum 2(P+Q+R) = 13$$

$$P+Q+R = \frac{13}{2} = 6.5$$

$$P = (P+Q+R) - (Q+R) = 6.5 - 4 = 2.5 = \frac{5}{2}$$

$$\text{Time } P = \frac{96}{5/2} = \frac{96 \times 2}{5} = \frac{192}{5} = \underline{\underline{38 \frac{2}{5} \text{ days}}}$$

**Q.62** A trader sells one variety of sugar at ₹36 per kg, incurring a 10% loss, and another variety at ₹48 per kg, incurring a 20% loss. If he mixes the two varieties in equal quantities and sells the mixture at ₹42 per kg, what is his overall profit or loss percentage?

- A. Loss of 16%
- B. Loss of 15%
- C. Profit of 12.5%
- D. Profit of 15%

**Answer:** A

**Sol: Given:**

SP of first variety = 36

Loss on first variety = 10%

SP of second variety = 48

Loss on second variety = 20%

Equal quantities mixed

SP of mixture = 42

**Formula Used:**

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

**Solution:**

$$36 = 90\% \text{ of } \text{CP}_1$$

$$\text{CP}_1 = \frac{36}{0.9} = 40$$

$$48 = 80\% \text{ of } \text{CP}_2$$

$$\text{CP}_2 = \frac{48}{0.8} = 60$$

$$\text{Average CP} = \frac{40 + 60}{2} = 50$$

$$\text{Average SP} = 42$$

$$\text{Loss} = 50 - 42 = 8$$

$$\text{Loss \%} = \frac{8}{50} \times 100 = 16\%$$

**Final Answer:**

16% loss

**Exam - hall Method:**

$V_1: 90\% = 36 \Rightarrow CP_1 = 40$   
 $V_2: 80\% = 48 \Rightarrow CP_2 = 60$   
 Mix (1:1)  $\Rightarrow$  Avg CP =  $\frac{40+60}{2} = 50$   
 $SP_{\text{mix}} = 42$   
 $\rightarrow \text{Loss} = 50 - 42 = 8$   
 $\text{Loss \%} = \frac{8}{50} \times 100 = 16\% \text{ Loss}$

**Q.63** What is the area of a sector of a circle with radius 9 cm and central angle  $80^\circ$ ?

- A.  $18\pi \text{ cm}^2$
- B.  $27\pi \text{ cm}^2$
- C.  $36\pi/5 \text{ cm}^2$
- D.  $72\pi/5 \text{ cm}^2$

**Answer:** A

**Sol: Given:**

$$r = 9 \text{ cm}$$

$$\theta = 80^\circ$$

**Formula Used:**

$$\text{Area of sector of a circle} = \frac{\theta}{360^\circ} \times \pi r^2$$

**Solution:**

$$\text{Area} = \frac{80}{360} \times \pi \times 9^2$$

$$= \frac{2}{9} \times \pi \times 81$$

$$= 18\pi$$

**Final Answer:**

$$18\pi \text{ cm}^2$$

**Q.64** Which of the following lines is parallel to  $4x - 3y = 7$ ?

- A.  $4x - 3y = 5$
- B.  $3x - 4y = 7$
- C.  $4x + 3y = 7$
- D.  $2x - 3y = 5$

**Answer:** A

**Sol: Given:**

$$4x - 3y = 7$$

**Concept Used:**

Parallel lines have equal slopes

**Formula Used:**

$$\text{Slope of } ax + by + c = 0 \text{ is } -\frac{a}{b}$$

**Solution:**

$$4x - 3y - 7 = 0$$

$$m = \frac{4}{3}$$

$$\text{Option A: } 4x - 3y - 5 = 0 \Rightarrow m = \frac{4}{3}$$

$$\text{Option B: } 3x - 4y - 7 = 0 \Rightarrow m = \frac{3}{4}$$

$$\text{Option C: } 4x + 3y - 7 = 0 \Rightarrow m = -\frac{4}{3}$$

$$\text{Option D: } 2x - 3y - 5 = 0 \Rightarrow m = \frac{2}{3}$$

**Final Answer:**

$$4x - 3y = 5$$

**Q.65** If  $\cos(90^\circ - \theta) = \sin(2\theta)$ , what is  $\theta$ ?

- A.  $60^\circ$
- B.  $30^\circ$
- C.  $45^\circ$
- D.  $90^\circ$

**Answer:** A

**Sol: Given:**

$$\cos(90^\circ - \theta) = \sin(2\theta)$$

**Formula Used:**

$$\cos(90^\circ - \theta) = \sin \theta$$

$$\sin(2\theta) = 2 \sin \theta \cos \theta$$

**Solution:**

$$\sin \theta = \sin(2\theta)$$

$$\sin \theta = 2 \sin \theta \cos \theta$$

$$\sin \theta(1 - 2 \cos \theta) = 0$$

$$\sin \theta = 0 \Rightarrow \theta = 0^\circ$$

$$\cos \theta = \frac{1}{2} \Rightarrow \theta = 60^\circ$$

**Q.66** Given that angles A and B are complementary and  $\cos A = \frac{5}{13}$ , what is  $\tan B$ ?

- A.  $\frac{12}{5}$
- B.  $\frac{5}{12}$
- C.  $\frac{4}{3}$
- D.  $\frac{3}{4}$

**Answer:** B

**Sol: Given:**

$$A + B = 90^\circ$$

$$\cos A = \frac{5}{13}$$

**Formula Used:**

$$\sin B = \cos A$$

$$\tan B = \frac{\sin B}{\cos B}$$

**Solution:**

$$\sin B = \frac{5}{13}$$

$$\cos B = \sqrt{1 - \sin^2 B}$$

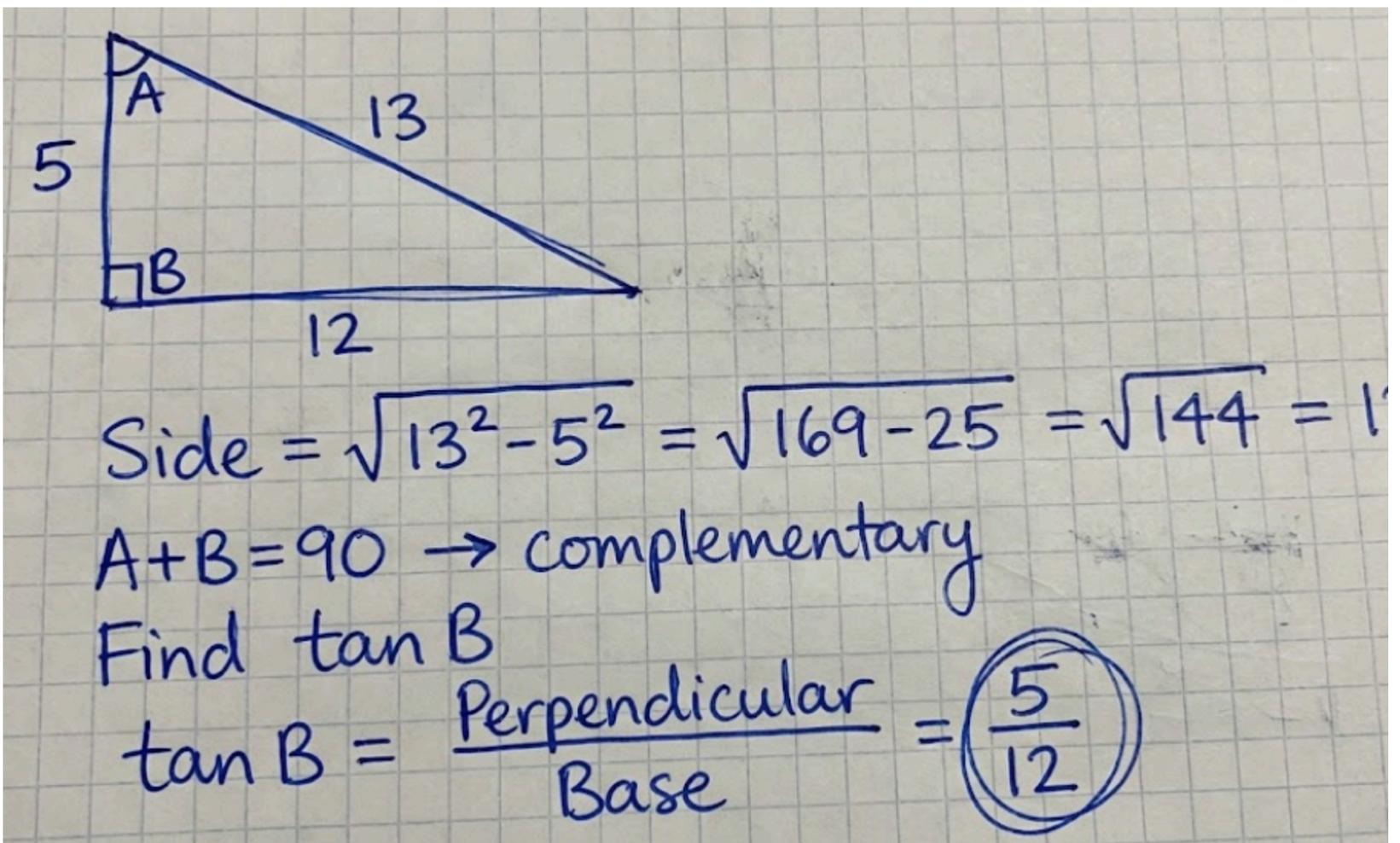
$$= \sqrt{1 - \left(\frac{5}{13}\right)^2} = \frac{12}{13}$$

$$\tan B = \frac{\frac{5}{13}}{\frac{12}{13}} = \frac{5}{12}$$

**Final Answer:**

$$\frac{5}{12}$$

**Exam - Hall Method:**



**Q.67** In a cyclic quadrilateral PQRS, if angle P is  $110^\circ$ , what is the measure of angle R?

- A.  $70^\circ$
- B.  $80^\circ$
- C.  $90^\circ$
- D.  $110^\circ$

**Answer:** A

**Sol: Given:**

$$\angle P = 110^\circ$$

PQRS is a cyclic quadrilateral

**Concept Used:**

Opposite angles of a cyclic quadrilateral are supplementary

**Formula Used:**

$$\angle P + \angle R = 180^\circ$$

**Solution:**

$$\angle R = 180^\circ - 110^\circ$$

$$\angle R = 70^\circ$$

**Final Answer:**

$$70^\circ$$

**Q.68** A milkman mixes water with pure milk. If he sells the mixture at the cost price of pure milk and makes a profit of 25%, what is the ratio of water to milk in the mixture?

- A. 1:3
- B. 1:4
- C. 1:5
- D. 2:5

**Answer:** B

**Sol: Given:**

Selling price equals cost price of pure milk

$$\text{Profit} = 25\%$$

**Formula Used:**

$$\text{Profit \%} = \frac{\text{Water}}{\text{Milk}} \times 100$$

**Solution:**

$$\text{Let milk} = 100$$

$$\text{Cost price} = 100$$

$$\text{Selling price} = 125$$

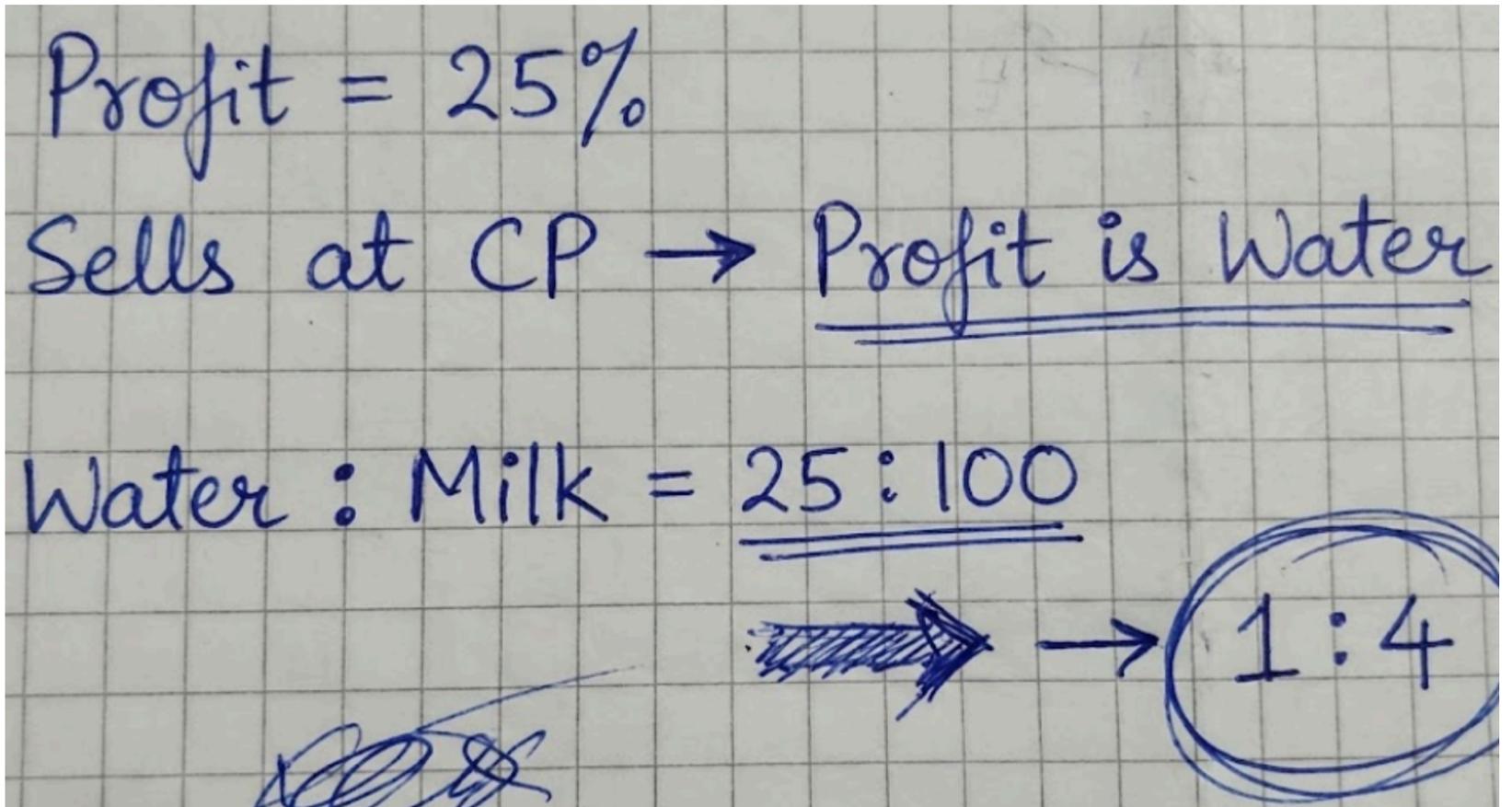
$$\text{Water} = 125 - 100 = 25$$

$$\text{Ratio of water to milk} = 25 : 100 = 1 : 4$$

**Final Answer:**

$$1 : 4$$

Exam - Hall Method:



**Q.69** Two cyclists start from the same point on a circular track of length 900 m at 7:00 a.m. and ride in opposite directions. Their speeds are 6 km/h and 9 km/h respectively. At what time will they meet for the fourth time?

- A. 7:15:18 a.m.
- B. 7:14:24 a.m.
- C. 7:30:24 a.m.
- D. 7:36:18 a.m.

**Answer:** B

**Sol: Given:**

Length of track = 900 m = 0.9 km

Speed<sub>1</sub> = 6 km/h

Speed<sub>2</sub> = 9 km/h

Start time = 7:00 a.m.

**Concept Used:**

Meeting on circular track using relative speed

**Formula Used:**

$$\text{Time} = \frac{\text{Distance}}{\text{Relative speed}}$$

**Solution:**

Relative speed = 6 + 9 = 15 km/h

Time for one meeting =  $\frac{0.9}{15} = 0.06$  h

$0.06 \times 60 = 3.6$  min = 3 min 36 s

Time for 4th meeting =  $4 \times 3.6 = 14.4$  min

= 14 min 24 s

Meeting time = 7:14:24 a.m.

**Final Answer:**

7:14:24 a.m.

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**Q.70** In triangles DEF and PQR, if  $DE = PQ$ ,  $EF = QR$ , and  $FD = RP$ , which congruence criterion shows that triangle DEF is congruent to triangle PQR?

- A. SSS
- B. SAS
- C. ASA
- D. RHS

**Answer:** A

**Sol: Given:**

$$DE = PQ$$

$$EF = QR$$

$$FD = RP$$

**Formula Used:**

If three sides of one triangle are equal to three sides of another,

then the triangles are congruent (SSS)

**Solution:**

All three corresponding sides are equal

$$\Rightarrow \triangle DEF \cong \triangle PQR \text{ by SSS}$$

**Final Answer:**

SSS

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**Q.71** A bus covers 30% of a journey at a speed of 24 km/h and the remaining distance at a speed of 36 km/h. What is the average speed of the bus for the entire journey?

- A. 28.8 km/h
- B. 29.4 km/h
- C. 30 km/h
- D. 31.3 km/h

**Answer:** D

**Sol: Given:**

30% distance at 24 km/h

70% distance at 36 km/h

**Formula Used:**

$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$

**Solution:**

Let total distance = 100

Distance<sub>1</sub> = 30, Distance<sub>2</sub> = 70

$$\text{Time}_1 = \frac{30}{24} = \frac{5}{4}$$

$$\text{Time}_2 = \frac{70}{36} = \frac{35}{18}$$

$$\text{Total time} = \frac{5}{4} + \frac{35}{18}$$

$$= \frac{45 + 70}{36} = \frac{115}{36}$$

$$\text{Average speed} = \frac{100}{115/36} = \frac{3600}{115} = \frac{720}{23}$$

**Final Answer:**

$$\frac{720}{23} = 31.30 \text{ km/h}$$

**Q.72** The area of a sector of a circle of radius 6 cm with central angle  $120^\circ$  is:

- A.  $12\pi \text{ cm}^2$
- B.  $18\pi \text{ cm}^2$
- C.  $24\pi \text{ cm}^2$
- D.  $30\pi \text{ cm}^2$

**Answer:** A

**Sol: Given:**

$$r = 6 \text{ cm}$$

$$\theta = 120^\circ$$

**Concept Used:**

Area of a sector of a circle

**Formula Used:**

$$\text{Area of sector} = \frac{\theta}{360^\circ} \times \pi r^2$$

**Solution:**

$$\text{Area} = \frac{120}{360} \times \pi \times 6^2$$

$$= \frac{1}{3} \times \pi \times 36$$

$$= 12\pi$$

**Final Answer:**

$$12\pi$$

**Q.73** If  $t = \sqrt{6} + 3$ , find  $t^2 - 6\sqrt{6}$ .

- A. 3
- B. 5
- C. 9
- D. 15

**Answer:** D

**Sol: Given:**

$$t = \sqrt{6} + 3$$

**Formula Used:**

$$(a + b)^2 = a^2 + b^2 + 2ab$$

**Solution:**

$$t^2 = (\sqrt{6} + 3)^2$$

$$= 6 + 9 + 2 \times \sqrt{6} \times 3$$

$$= 15 + 6\sqrt{6}$$

$$t^2 - 6\sqrt{6} = 15$$

**Final Answer:**

15

**Q.74** What is the radian measure of  $135^\circ$ ?

- A.  $3\pi/5$
- B.  $5\pi/6$
- C.  $3\pi/4$
- D.  $7\pi/6$

**Answer:** C

**Sol: Given:**

$135^\circ$

**Concept Used:**

Conversion of degrees to radians

**Formula Used:**

$$\text{Radians} = \text{Degrees} \times \frac{\pi}{180}$$

**Solution:**

$$135 \times \frac{\pi}{180}$$

$$= \frac{135}{180}\pi$$

$$= \frac{3}{4}\pi$$

**Final Answer:**

$$\frac{3\pi}{4}$$

**Q.75** If  $\sin^2\theta - \cos^2\theta = -1/3$ , find the value of  $\cos^2\theta$ .

- A.  $1/3$
- B.  $1/2$
- C.  $2/3$
- D.  $5/6$

**Answer:** C

**Sol: Given:**

$$\sin^2\theta - \cos^2\theta = -\frac{1}{3}$$

**Formula Used:**

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

$$\cos 2\theta = 2 \cos^2 \theta - 1$$

**Solution:**

$$-\cos 2\theta = -\frac{1}{3}$$

$$\cos 2\theta = \frac{1}{3}$$

$$2 \cos^2 \theta - 1 = \frac{1}{3}$$

$$2 \cos^2 \theta = \frac{4}{3}$$

$$\cos^2 \theta = \frac{2}{3}$$

**Final Answer:**

$$\frac{2}{3}$$

**Q.76** Select the most appropriate antonym of the given word: FLEETING

- A. Short-lived
- B. Transient
- C. Enduring
- D. Momentary

**Answer:** C

**Sol:** The correct option is (c).

The word **FLEETING** means lasting for a very short time; passing quickly and not permanent (Hindi meaning: क्षणिक/अल्पकालिक). It is used for things like moments, feelings, or events that disappear soon.

**Example:** The joy of winning the prize was **fleeting**, and soon she returned to her routine.

The antonym must express the opposite idea, that is, something that lasts for a long time. The word **ENDURING** means continuing for a long time; lasting and persistent (Hindi meaning: स्थायी/दीर्घकालिक). Therefore, it is the most appropriate antonym.

**Example:** Their friendship was **enduring** despite many difficulties.

**Synonyms of FLEETING:** brief, momentary, transient, short-lived.

**Antonyms of FLEETING:** enduring, lasting, permanent, long-term.

**Meanings of all the other given options:**

- **Option A: Short-lived** – lasting for a short time (Hindi meaning: अल्पकालिक).
- **Option B: Transient** – temporary; not lasting (Hindi meaning: अस्थायी).
- **Option D: Momentary** – lasting only a moment (Hindi meaning: क्षण भर का).

So the correct answer is (c)

**Q.77** Select the sentence containing the homonym of the highlighted word:

During the ceremony, the fanon lay across the bishop's shoulder.

- A. The researcher documented the fanon's use in early rituals.
- B. The seamstress reinforced the fanon's border with fine stitching.
- C. The students discussed Fanon's views on colonial identity.
- D. The priest adjusted the fanon over his chasuble.

**Answer:** C

**Sol:** The correct option is (c).

A **homonym** is a word that has the same pronunciation (and often the same spelling) as another word but a different meaning. In the given sentence, **fanon** refers to a liturgical vestment, a cloth worn by a bishop during a ceremony (Hindi meaning: धार्मिक वस्त्र/धार्मिक पट्टा).

Option (c) uses **Fanon** as a proper noun referring to the writer and thinker **Frantz Fanon**. Although it is written with a capital letter and refers to a person, it is pronounced like **fanon**, but its meaning is completely different (Hindi meaning: व्यक्ति का नाम). Hence, it contains the homonym of the highlighted word.

**Why the other options are not correct:** Options (a), (b), and (d) still use **fanon** in the same vestment-related sense (object/cloth connected to rituals or priestly dress). They do not shift the meaning to a different word with the same sound.

So the correct answer is (c)

**Q.78** Choose the most suitable option to replace the highlighted part of the sentence:

I am used to get up early every morning.

- A. of getting up
- B. with getting up
- C. to getting up
- D. for getting up

**Answer:** C

**Sol:** The correct option is (c).

In the sentence, the expression **am used to** shows a habit or familiarity. After **used to**, we use a **noun** or a **gerund (verb + ing)**, not the base form of the verb.

Therefore, **to get up** is incorrect here because it uses the infinitive form. The correct replacement is **to getting up**, which makes the sentence grammatically correct: **I am used to getting up early every morning.**

**Grammatical rule used:** **Be used to + noun/gerund** (habit/familiarity). It is different from **used to + base verb**, which refers to a past habit.

**Example (rule):** She is used to **working** late at night.

**Information booster:** Do not confuse:

- 1) I **used to wake up early** (past habit).
- 2) I **am used to waking up early** (present habit/familiarity).

So the correct answer is (c)

**Q.79** Find the part of the sentence that contains an error:

The initiatives praised by the committee (1)/ are not only designed to modernise reporting systems (2)/ but also improving transparency in funding distribution (3)/ across all districts. (4)

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

**Answer:** C

**Sol:** The correct option is (c).

The structure **not only ... but also ...** requires **parallelism**, meaning the grammatical form after both parts should be similar. In part (2), the phrase is **designed to modernise** (past participle + infinitive). However, in part (3), it becomes **but also improving** (gerund form), which breaks the parallel structure.

To make the sentence correct, we should keep the same pattern, such as:

... are not only designed to modernise reporting systems but also designed to improve transparency ...

or

... are designed not only to modernise reporting systems but also to improve transparency ...

**Grammatical rule used:** In correlative conjunctions like **not only...but also**, the elements joined must be grammatically parallel (same form: infinitive with infinitive, noun with noun, clause with clause).

**Example (parallelism):** She likes **to sing** and **to dance**. (Correct)

She likes **singing** and **to dance**. (Incorrect parallelism)

**Information booster:** Parallelism is commonly tested in SSC/Banking exams, especially with pairs like **either...or**, **neither...nor**, **not only...but also**, and **both...and**.

So the correct answer is (c)

**Q.80** Rearrange the following sentences to form a coherent paragraph:

1. Such stories frequently examine the moral and societal impact of technological progress, from AI to genetic modification.
2. Science fiction is a form of speculative writing that commonly presents imaginative ideas related to future science and technology.
3. As a result, it becomes a strong medium for social critique and for forecasting upcoming problems and dilemmas.
4. Though it entertains readers, the genre offers more than simple escapism.

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

**Answer:** A

**Sol:** The correct option is (a).

The correct order must introduce the topic, develop the idea, and then conclude logically.

- **Sentence 2** should come first because it defines what science fiction is and introduces the subject clearly.
- **Sentence 4** follows naturally because it adds a contrast: even though the genre entertains, it offers more than escapism. This expands the definition into a purpose.
- **Sentence 1** then provides specific details about what such stories examine (moral and societal impact), supporting the claim made in sentence 4.
- **Sentence 3** is the conclusion, beginning with **As a result**, which clearly depends on the ideas given earlier and sums up the outcome (social critique and forecasting dilemmas).

**Grammar and cohesion clue:** Connectors like **Though** (sentence 4) and **As a result** (sentence 3) guide the logical flow: definition → contrast/purpose → examples → conclusion.

So the correct answer is (a)

**Q.81** Spot the correct spelling of a metamorphic rock texture with large, conspicuous crystals.

- A. Prephyroblastic
- B. Porphyroblastic
- C. Porfyrablastic
- D. Porophyroblastik

**Answer:** B

**Sol:** The correct option is (b).

The term **Porphyroblastic** is a correctly spelt geological adjective used for a metamorphic rock texture containing large, conspicuous crystals (porphyroblasts) embedded in a finer-grained matrix (Hindi meaning: बड़े क्रिस्टलों वाला कार्यांतरित शैल बनावट). The spelling follows the standard scientific root: **porphyro-** (large crystals) + **-blastic** (growth/formed).

**Example:** Garnet schist often shows a **porphyroblastic** texture due to large garnet crystals.

**Why others are incorrect:** The other options contain incorrect letter order or non-standard endings (such as misplaced vowels or incorrect suffix spelling), which do not match the accepted scientific spelling.

**Meanings of all the given options:**

- **Option A: Prephyroblastic** – not a standard accepted spelling/term (Hindi meaning: अमान्य/गलत वर्तनी).
- **Option B: Porphyroblastic** – correct term for rocks with large porphyroblasts (Hindi meaning: बड़े क्रिस्टलयुक्त बनावट).
- **Option C: Porfyroblastic** – incorrect spelling (Hindi meaning: गलत वर्तनी).
- **Option D: Porophyroblastik** – incorrect spelling and non-standard ending (Hindi meaning: गलत वर्तनी).

So the correct answer is (b)

**Q.82** Find the part of the sentence that contains an error:

What the organization did not examine thoroughly enough (1)/ were not the scheme's objectives themselves, (2)/ but the political consequences it (3)/ might have caused if carried out without wider agreement. (4)

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

**Answer:** B

**Sol:** The correct option is (b).

In this sentence, the subject is the entire clause beginning with **What**: **What the organization did not examine thoroughly enough**. Such a **what-clause** functions as a **singular subject** in English. Therefore, it requires a **singular verb**.

However, part (2) uses the plural verb phrase **were not**, which does not agree with the singular subject. The correct form should be **was not**: **What the organization did not examine thoroughly enough was not the scheme's objectives themselves, but the political consequences...**

**Grammatical rule used:** A clause used as a subject (especially a **what-clause**) generally takes a **singular verb**.

**Example (rule):** What he said **was** surprising. (Not: were)

**Information booster:** In error-spotting, always check **subject-verb agreement** first, especially when the subject is a clause or starts with **what/that/how**.

So the correct answer is (b)

**Q.83** Select the correct option:

The speaker's explanation was so packed with technical jargon that it veered into \_\_\_\_\_.

- A. opacity
- B. opalescent
- C. poaceous
- D. opaque

**Answer:** A

**Sol:** The correct option is (a).

The sentence means that the explanation became difficult to understand because it contained too much technical jargon. Therefore, the blank should take a noun meaning **lack of clarity** or **obscurity**. The word **opacity** means the quality of being opaque; figuratively, it means **unclearness, obscurity, or difficulty in understanding** (Hindi meaning: अस्पष्टता/दुर्बोधिता).

**Example:** The legal document's **opacity** confused the readers.

**Why other options are incorrect:**

- **Option B: opalescent** is an adjective meaning showing shifting colours like opal; it does not fit the idea of unclear explanation (Hindi meaning: ओपल जैसा चमकीला).

- **Option C: poaceous** means related to grasses; it is unrelated to the context (Hindi meaning: घास कुल से संबंधित).
- **Option D: opaque** is an adjective, while the sentence needs a noun after **into**; also, **into opaque** is grammatically incorrect (Hindi meaning: अपारदर्शी/अस्पष्ट).

So the correct answer is (a)

**Q.84** Select the most appropriate synonym of the given word: CUTTING

- A. Kind
- B. Pleasant
- C. Gentle
- D. Sarcastic

**Answer:** D

**Sol:** The correct option is (d).

The word **CUTTING** (used for remarks or comments) means sharp, hurtful, and often intended to mock or wound someone emotionally (Hindi meaning: चुभने वाला/कटाक्षपूर्ण). A cutting remark is not polite; it is biting and can embarrass or hurt the listener.

**Example:** His **cutting** comment made her feel insulted in front of everyone.

The closest synonym is **SARCASTIC**, which means using irony or mock praise to hurt or criticize someone (Hindi meaning: व्यंग्यात्मक). Sarcastic statements often sound witty but are actually intended to express criticism.

**Example:** She gave a **sarcastic** smile and said, 'Well done,' even though the work was poor.

**Synonyms:** biting, caustic, scathing, sarcastic.

**Antonyms:** kind, polite, gentle, complimentary.

**Meanings of all the other given options:**

- **Option A: Kind** – caring and helpful in nature (Hindi meaning: दयालु).
- **Option B: Pleasant** – enjoyable; giving satisfaction (Hindi meaning: सुखद).
- **Option C: Gentle** – mild and soft; not harsh (Hindi meaning: कोमल/मृदु).

So the correct answer is (d)

**Q.85** Choose the most suitable option to replace the highlighted part of the sentence:

I suggested that he **goes to the veterinary surgeon immediately** as his dog was not well.

- A. go to veterinary surgeon at once
- B. should goes to the veterinary surgeon
- C. go to the veterinary surgeon immediately
- D. should have gone to the veterinary surgeon

**Answer:** C

**Sol:** The correct option is (c).

After verbs like **suggest, recommend, insist, demand**, English commonly uses the **mandative subjunctive** in that-clauses. In this structure, we use the **base form of the verb** (V1) for all subjects, not the third-person singular form.

Therefore, **suggested that he goes** is incorrect. It should be **suggested that he go**. Option (c) correctly uses **go** and keeps the meaning complete: **I suggested that he go to the veterinary surgeon immediately...**

**Grammatical rule used: Suggest/Recommend/Insist + that + subject + base verb** (subjunctive) OR **should + base verb** is also possible.

**Example (rule):** The doctor suggested that she **take** rest. (Not: takes)

**Why other options are incorrect:**

**Option A** is missing the article **the** before veterinary surgeon and sounds incomplete in standard exam grammar.

**Option B** is incorrect because after **should** we use the base verb, not **goes**.

**Option D** changes the meaning to a past regret/action completed earlier, which does not match the context of giving advice/suggestion at that time.

So the correct answer is (c)

**Q.86** Select the correct option:

Only after ten years of fieldwork \_\_ she truly understand the dialect's nuances.

- A. she had
- B. did she
- C. was she
- D. she did

**Answer:** B

**Sol:** The correct option is (b).

When a sentence begins with a negative or limiting adverbial phrase such as **Only after**, **Only then**, **Never**, **Hardly**, etc., we use **inversion**. Inversion means the auxiliary verb comes before the subject, similar to a question form.

Here, the main verb is **understand** in the simple past context (because the action of understanding happened after ten years). So we require the auxiliary **did** for inversion: **Only after ten years of fieldwork did she truly understand...**

**Grammatical rule used:** Limiting adverbial at the beginning + **auxiliary + subject + main verb** (inversion).

**Example (rule):** Only then **did** he realize his mistake.

**Why other options are incorrect:**

**Option A** does not form correct inversion and also mismatches tense logic.

**Option C** is not suitable because **was** is not the correct auxiliary for the verb **understand**.

**Option D** keeps normal order (no inversion), which is incorrect after **Only after** at the start.

So the correct answer is (b)

**Q.87** 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.

Ritika said, "Rajiv does not listen to me."

- A. Ritika said Rajiv don't listen to her.
- B. Ritika said that Rajiv doesn't listened to her.
- C. Ritika said that Rajiv didn't listen to her.
- D. Ritika said that Rajiv didn't listened to her.

**Answer:** C

**Sol:** The correct option is (c).

The reporting verb is **said** (past tense). When we change direct speech to indirect speech, the tense generally shifts back by one step (backshift). Here, **does not listen** is in **present simple**, so it changes to **did not listen** in **past simple**.

Also, the pronoun **me** must change according to the speaker and listener. Since Ritika is speaking, **me** becomes **her** in indirect speech.

Therefore, the correct indirect speech is: **Ritika said that Rajiv didn't listen to her.**

**Rules of conversion used:**

- **Tense backshift:** Present simple → Past simple (does not listen → did not listen).
- **Pronoun change:** me → her (as per subject Ritika).
- **Optional connector:** 'that' is commonly used after 'said' in indirect speech.

Why other options are incorrect:

Option A has wrong grammar: **don't** cannot be used with **Rajiv** (singular), and it also misses correct tense backshift.

Option B mixes incorrect forms: **doesn't listened** is grammatically wrong.

Option D is wrong because after **did not** we must use base verb **listen**, not **listened**.

So the correct answer is (c)

**Q.88** Change the following from active to passive:

The research team will have reverified the samples before sunrise.

- A. The samples have been reverified by the research team before sunrise.
- B. The samples will have been reverified by the research team before sunrise.
- C. The samples will be reverified by the research team before sunrise.
- D. The samples would have been reverifying by the research team before sunrise.

**Answer:** B

**Sol:** The correct option is (b).

The active sentence is in the **future perfect tense: will have reverified**. While converting active to passive, we must keep the tense unchanged and make the object of the active sentence the subject of the passive sentence.

**Active structure (Future Perfect):** Subject + will have + V3 + object.

**Passive structure (Future Perfect):** Object + will have been + V3 + by + subject.

Here:

**Subject:** The research team

**Verb:** will have reverified

**Object:** the samples

So, passive becomes: **The samples will have been reverified by the research team before sunrise**. This exactly matches option (b).

Why other options are incorrect:

Option A changes the tense to present perfect (**have been**), which is incorrect.

Option C changes the tense to simple future (**will be**), which is incorrect.

Option D is grammatically wrong because **been reverifying** is not the correct passive construction here, and **would have** changes the meaning.

So the correct answer is (b)

**Q.89** Select the correct option:

Her rebuttal, although polished, did not \_\_\_\_\_ the core issue raised by the opposition.

- A. address
- B. depress
- C. illude
- D. circumvent

**Answer:** A

**Sol:** The correct option is (a).

The sentence means that even though her rebuttal sounded well-prepared, it did not deal with or speak directly to the main issue. The verb **address** means to deal with a problem, issue, or topic directly; to respond to it appropriately (Hindi meaning: समाधान करना/मुद्दे पर बात करना).

**Example:** The minister promised to **address** the concerns of the farmers.

Why other options are incorrect:

- **Option B: depress** – to make someone sad or reduce something (Hindi meaning: उदास करना/कम करना), which does not fit the context.
- **Option C: illude** – not a standard verb in this context; it is incorrect/rare and does not convey the required meaning (Hindi meaning: अमान्य/अप्रचलित).

- **Option D: circumvent** – to avoid dealing with something directly (Hindi meaning: टालना/किनारा करना). The sentence says she did not do something; the needed word is the direct action she failed to do, i.e., **address** the issue.

So the correct answer is (a)

**Q.90** Choose the correct one-word substitute for: "A government controlled by the rich and powerful."

- A. Oligarchy
- B. Bureaucracy
- C. Plutocracy
- D. Technocracy

**Answer:** C

**Sol:** The correct option is (c).

A government controlled by the **rich and wealthy class** is called a **Plutocracy**. The word **plutocracy** refers to a system in which power belongs to those with great wealth, and decisions are influenced by money rather than equal public welfare (Hindi meaning: धनतंत्र/धनवानों का शासन).

**Example:** Critics argued that the policy reforms were turning the country into a **plutocracy**.

**Meanings of the given other options:**

- **Option A: Oligarchy** – rule by a small group of people, not necessarily rich (Hindi meaning: अल्पतंत्र).
- **Option B: Bureaucracy** – administration by government officials and departments (Hindi meaning: नौकरशाही).
- **Option D: Technocracy** – government run by technical experts (Hindi meaning: तकनीकी विशेषज्ञों का शासन).

So the correct answer is (c)

**Q.91** Identify the incorrectly spelt word:

- A. Avaricious
- B. Temerarious
- C. Repentant
- D. Inadvartant

**Answer:** D

**Sol:** The correct option is (d).

Option (d) **Inadvartant** is incorrectly spelt. The correct spelling is **Inadvertent**, which means unintentional or done without planning; accidental (Hindi meaning: अनजाने में/असावधान). In competitive exams, such spelling traps often involve misplaced vowels or wrong consonant order, as seen here.

**Example:** The officer made an **inadvertent** error in the final report.

**Meanings of all the given options:**

- **Option A: Avaricious** – extremely greedy for wealth (Hindi meaning: लोभी).
- **Option B: Temerarious** – reckless and bold; rash (Hindi meaning: उद्दंड/साहसी पर लापरवाह).
- **Option C: Repentant** – feeling regret or remorse (Hindi meaning: पश्चातापी).
- **Option D: Inadvartant** – incorrect spelling; correct is **inadvertent** (Hindi meaning: अनजाने में).

**Information booster (parts of speech):** **Inadvertent** is an **adjective** used to describe actions or mistakes, e.g., inadvertent remark, inadvertent disclosure.

So the correct answer is (d)

**Q.92** Convert the sentence provided below from its passive voice structure to an active voice structure:

Ancient artifacts are believed to have been quietly removed from the location by trespassers before the audit.

- A. Trespassers removed the ancient artifacts before the audit.
- B. The location was quietly cleared before the audit.
- C. Trespassers are believed to have quietly removed ancient artifacts before the audit.
- D. The artifacts had been removed prior to the audit.

**Answer:** C

**Sol:** The correct option is (c).

The given sentence is passive with a reporting structure: **are believed to have been removed**. The subject **Ancient artifacts** is not the doer; the doer is mentioned at the end with **by trespassers**.

To convert to active, we should make the agent (doer) the subject: **trespassers**. However, we must also preserve the reporting phrase **are believed**, because it shows that the statement is an assumption/belief, not a confirmed fact. Option (c) correctly keeps this meaning and changes the voice properly.

**Correct active form:** Trespassers are believed to have quietly removed ancient artifacts before the audit.

**Rule (Passive to Active for reporting verbs):**

Passive: Subject + be + believed/said + to + have been + V3 + by + agent

Active: Agent + be + believed/said + to + have + V3 + object

**Why other options are incorrect:**

**Option A** removes the important idea of **belief** and changes the meaning from 'it is believed' to a definite fact.

**Option B** changes the meaning completely by focusing on location, not artifacts.

**Option D** remains passive and does not convert to active voice.

So the correct answer is (c)

**Q.93** Rearrange the following sentences to form a coherent paragraph:

1. This process helps ensure that the food we consume is safe and free from harmful microbes or other impurities.
2. Food processing refers to a set of techniques used to convert raw ingredients into edible products.
3. These techniques may include simple steps like chopping and grinding, as well as advanced procedures such as pasteurization and fermentation.
4. In addition, it supports preservation by increasing shelf life and can also improve nutritional value.

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

**Answer:** A

**Sol:** The correct option is (a).

The paragraph should begin with a definition, then give details and benefits in a logical sequence.

- **Sentence 2** is the best opening because it defines **food processing** and introduces the topic clearly.
- **Sentence 3** naturally follows because it explains what **these techniques** are. The phrase **These techniques** directly refers back to the **set of techniques** mentioned in sentence 2.
- **Sentence 1** then states one major purpose/benefit: safety and freedom from harmful microbes and impurities. This is a logical continuation after describing the techniques.
- **Sentence 4** starts with **In addition**, which adds extra benefits beyond safety, such as shelf life and nutritional improvement, making it the best concluding line.

**Cohesion clue:** Reference words like **These** (sentence 3) and connectors like **In addition** (sentence 4) help confirm the order.

So the correct answer is (a)

**Q.94** Choose the correct meaning of idiom: Pull no punches

- A. To remain impartial
- B. To hesitate before talking
- C. To mislead the listener
- D. To be direct and honest

**Answer:** D

**Sol:** The correct option is (d).

The idiom **Pull no punches** means to speak in a very direct and honest manner without softening the truth, even if it may sound harsh (Hindi idiom/meaning: बिना लाग-लपेट के सच कहना/खुलकर बोलना). It originally comes from boxing, where 'pulling punches' means hitting softly; therefore, 'pull no punches' means not holding back.

**Example:** The coach **pulled no punches** while explaining why the team performed poorly.

**Why other options are incorrect:**

**Option A** means staying neutral, which is unrelated.

**Option B** means hesitation, which is opposite of speaking directly.

**Option C** means deceiving, which is not the meaning of this idiom.

**Other related idioms and their meanings:**

- **Call a spade a spade** – to speak plainly and directly (Hindi meaning: सीधी बात कहना).
- **Speak one's mind** – to say what one truly thinks (Hindi meaning: अपनी राय खुलकर कहना).
- **Not mince words** – to avoid polite indirect language; be blunt (Hindi meaning: बात को घुमाए बिना कहना).

So the correct answer is (d)

**Q.95** In the passage, the expression "gnawing dissonance" most nearly refers to:

Read the passage and answer the following questions.

For seventeen-year-old Meera, adolescence did not remain just a time of changing emotions and academic goals; it turned into a space where how she saw herself clashed painfully with her sense of worth. Living in a world flooded with polished online images and algorithm-led standards of attractiveness, Meera began to feel that even her own reflection was unreliable—almost like it was deceiving her. With every scroll through social media, a constant, nagging gap grew stronger: the difference between who she truly was and the flawless body types celebrated online. This was not ordinary teenage self-doubt; it slowly became a pattern of harsh self-judgment about her appearance. Over time, she started punishing herself in quiet ways—eating felt like something she had to "earn," mirrors felt like enemies, and even compliments sounded like coded reminders that she still wasn't enough.

Her slide into dysmorphia was gradual and silent, not dramatic or obvious. On the surface, she remained bright in studies and pleasant in company, carefully wearing an image of normal life. But behind the practiced smiles, she was breaking down inwardly. She began distancing herself emotionally, brushing off her pain as mere vanity, and treating her own value as something insignificant. The moment things changed did not come with an outburst, but with a disturbing silence: she refused to eat for days, and this finally led to medical help. Therapy introduced her to the idea that her self-perception was distorted, and helped her develop the emotional support system needed to rebuild her damaged identity. With consistent counseling, Meera learned to separate society's imposed standards from her real, inner worth. Slowly, she started accepting that beauty is not a single fixed model decided by culture; rather, it exists in many forms shaped by diversity, well-being, and self-kindness. Meera's story is not an isolated case—it reflects a larger crisis in which many teenagers fight invisible battles behind seemingly perfect digital lives. Addressing this problem demands more than simple awareness; it requires sharp media literacy, supportive and empathetic spaces, and a broader redefinition of beauty that goes beyond shallow measurements.

- A. The physical ache of hunger from missing meals
- B. The nagging conflict between her real self and online beauty ideals
- C. Her constant arguments with teachers at school
- D. Her growing detachment because of academic stress

**Answer:** B

**Sol:** The correct option is (b).

In the passage, Meera experiences a persistent inner conflict created by social media and online beauty standards. The phrase **gnawing dissonance** suggests an uncomfortable, ongoing mismatch that keeps troubling her mind, like something that 'keeps eating away' at her peace.

Here, the passage clearly explains that with every scroll, a **constant, nagging gap** grew stronger: the difference between who she truly was and the flawless body types celebrated online. This exactly matches option (b), which describes the conflict between her real self and online ideals.

**Context explanation:** The author shows that this was not simple self-doubt; it became harsh self-judgment, making mirrors feel like enemies and food feel like something she must 'earn'. Such descriptions point to mental discomfort caused by unrealistic digital standards.

Why other options are incorrect:

- **Option A** talks about physical hunger, but the passage focuses on emotional and psychological conflict, not merely hunger pain.
- **Option C** mentions arguments with teachers, which is not discussed anywhere.
- **Option D** connects detachment to academic stress, but the passage says she remained bright in studies; the real cause is distorted self-perception and beauty standards.

So the correct answer is (b)

**Q.96** According to the passage, Meera’s mental and emotional decline was:

Read the passage and answer the following questions.

For seventeen-year-old Meera, adolescence did not remain just a time of changing emotions and academic goals; it turned into a space where how she saw herself clashed painfully with her sense of worth. Living in a world flooded with polished online images and algorithm-led standards of attractiveness, Meera began to feel that even her own reflection was unreliable—almost like it was deceiving her. With every scroll through social media, a constant, nagging gap grew stronger: the difference between who she truly was and the flawless body types celebrated online. This was not ordinary teenage self-doubt; it slowly became a pattern of harsh self-judgment about her appearance. Over time, she started punishing herself in quiet ways—eating felt like something she had to “earn,” mirrors felt like enemies, and even compliments sounded like coded reminders that she still wasn’t enough.

Her slide into dysmorphia was gradual and silent, not dramatic or obvious. On the surface, she remained bright in studies and pleasant in company, carefully wearing an image of normal life. But behind the practiced smiles, she was breaking down inwardly. She began distancing herself emotionally, brushing off her pain as mere vanity, and treating her own value as something insignificant. The moment things changed did not come with an outburst, but with a disturbing silence: she refused to eat for days, and this finally led to medical help. Therapy introduced her to the idea that her self-perception was distorted, and helped her develop the emotional support system needed to rebuild her damaged identity. With consistent counseling, Meera learned to separate society’s imposed standards from her real, inner worth. Slowly, she started accepting that beauty is not a single fixed model decided by culture; rather, it exists in many forms shaped by diversity, well-being, and self-kindness. Meera’s story is not an isolated case—it reflects a larger crisis in which many teenagers fight invisible battles behind seemingly perfect digital lives. Addressing this problem demands more than simple awareness; it requires sharp media literacy, supportive and empathetic spaces, and a broader redefinition of beauty that goes beyond shallow measurements.

- A. Sudden and openly confrontational
- B. Unpredictable and meant to draw attention
- C. Gradual, hidden, and inwardly damaging
- D. Loud, defiant, and rebellious

**Answer:** C

**Sol:** The correct option is (c).

The passage states that Meera’s dysmorphia and emotional decline were **gradual and silent**, and that it was **not dramatic or obvious**. These phrases directly indicate a slow progression that remained hidden externally but caused serious internal damage.

Option (c) accurately captures this idea by describing the decline as **gradual, hidden, and inwardly damaging**. Even though Meera looked normal on the surface and stayed pleasant in company, she was breaking down inwardly, distancing herself emotionally, and punishing herself quietly.

**Context explanation:** The author contrasts her outward image (bright in studies, pleasant in company) with her internal collapse (harsh self-judgment, refusal to eat, emotional distancing). This contrast strongly supports option (c).

Why other options are incorrect:

- **Option A** is wrong because the decline was not sudden or openly confrontational; it was silent and hidden.
- **Option B** is wrong because her behaviour was not meant to draw attention; she carefully maintained a normal image.
- **Option D** is wrong because the passage does not show loud rebellion; it shows quiet suffering and withdrawal.

So the correct answer is (c)

**Q.97** Which idea, introduced through therapy, became the starting point of Meera’s emotional recovery?

Read the passage and answer the following questions.

For seventeen-year-old Meera, adolescence did not remain just a time of changing emotions and academic goals; it turned into a space where how she saw herself clashed painfully with her sense of worth. Living in a world flooded with polished online images and algorithm-led standards of attractiveness, Meera began to feel that even her own reflection was unreliable—almost like it was deceiving her. With every scroll through social media, a constant, nagging gap grew stronger: the difference between who she truly was and the flawless body types celebrated online. This was not ordinary teenage self-doubt; it slowly became a pattern of harsh self-judgment about her appearance. Over time, she started punishing herself in quiet ways—eating felt like something she had to “earn,” mirrors felt like enemies, and even compliments sounded like coded reminders that she

still wasn't enough.

Her slide into dysmorphia was gradual and silent, not dramatic or obvious. On the surface, she remained bright in studies and pleasant in company, carefully wearing an image of normal life. But behind the practiced smiles, she was breaking down inwardly. She began distancing herself emotionally, brushing off her pain as mere vanity, and treating her own value as something insignificant. The moment things changed did not come with an outburst, but with a disturbing silence: she refused to eat for days, and this finally led to medical help. Therapy introduced her to the idea that her self-perception was distorted, and helped her develop the emotional support system needed to rebuild her damaged identity. With consistent counseling, Meera learned to separate society's imposed standards from her real, inner worth. Slowly, she started accepting that beauty is not a single fixed model decided by culture; rather, it exists in many forms shaped by diversity, well-being, and self-kindness. Meera's story is not an isolated case—it reflects a larger crisis in which many teenagers fight invisible battles behind seemingly perfect digital lives. Addressing this problem demands more than simple awareness; it requires sharp media literacy, supportive and empathetic spaces, and a broader redefinition of beauty that goes beyond shallow measurements.

- A. Seeking narcissistic approval from others
- B. Understanding self-image distortion
- C. Learning techniques to manage social isolation
- D. Following a strict behavioural conditioning plan

**Answer:** B

**Sol:** The correct option is (b).

The passage says: **Therapy introduced her to the idea that her self-perception was distorted.** This realization becomes the foundation of her recovery because once she understands that her image of herself is not reliable, she can begin separating society's imposed standards from her inner worth.

Therefore, the idea that started her emotional recovery was **understanding self-image distortion**, which is exactly option (b).

**Context explanation:** Meera believed her reflection was deceiving her, and compliments felt like coded reminders. Therapy helps her recognize that such perceptions are distorted, and then counseling helps rebuild identity through support and self-kindness.

**Why other options are incorrect:**

- **Option A** is incorrect because therapy does not frame her issue as narcissism; it frames it as dysmorphia and distorted perception.
- **Option C** is not the starting point mentioned; social isolation is not presented as the primary issue.
- **Option D** is incorrect because no strict behavioural conditioning plan is mentioned; the focus is counseling, support, and reframing standards of beauty.

So the correct answer is (b)

**Q.98** Which option best expresses the core message of the passage?

Read the passage and answer the following questions.

For seventeen-year-old Meera, adolescence did not remain just a time of changing emotions and academic goals; it turned into a space where how she saw herself clashed painfully with her sense of worth. Living in a world flooded with polished online images and algorithm-led standards of attractiveness, Meera began to feel that even her own reflection was unreliable—almost like it was deceiving her. With every scroll through social media, a constant, nagging gap grew stronger: the difference between who she truly was and the flawless body types celebrated online. This was not ordinary teenage self-doubt; it slowly became a pattern of harsh self-judgment about her appearance. Over time, she started punishing herself in quiet ways—eating felt like something she had to “earn,” mirrors felt like enemies, and even compliments sounded like coded reminders that she still wasn't enough.

Her slide into dysmorphia was gradual and silent, not dramatic or obvious. On the surface, she remained bright in studies and pleasant in company, carefully wearing an image of normal life. But behind the practiced smiles, she was breaking down inwardly. She began distancing herself emotionally, brushing off her pain as mere vanity, and treating her own value as something insignificant. The moment things changed did not come with an outburst, but with a disturbing silence: she refused to eat for days, and this finally led to medical help. Therapy introduced her to the idea that her self-perception was distorted, and helped her develop the emotional support system needed to rebuild her damaged identity. With consistent counseling, Meera learned to separate society's imposed standards from her real, inner worth. Slowly, she started accepting that beauty is not a single fixed model decided by culture; rather, it exists in many forms shaped by diversity, well-being, and self-kindness. Meera's story is not an isolated case—it reflects a larger crisis in which many teenagers fight invisible battles behind seemingly perfect digital lives. Addressing this problem demands more than simple awareness; it requires sharp media literacy, supportive and empathetic spaces, and a broader redefinition of beauty that goes beyond shallow measurements.

- A. Teenagers are mainly affected by peer pressure
- B. Modern fashion and cosmetic trends dominate teen life
- C. Curated digital beauty standards trigger silent psychological struggles
- D. Academic counseling is the most essential need for teens

**Answer:** C

**Sol:** The correct option is (c).

The central message of the passage is that **curated digital beauty standards** and algorithm-driven online images can distort teenagers' self-perception, leading to serious psychological struggles that often remain invisible to others. Meera's story is presented as an example of a wider crisis affecting many teenagers.

Option (c) directly reflects this theme: it highlights that carefully curated digital standards of beauty trigger silent inner battles. The passage repeatedly connects Meera's self-judgment and dysmorphia to the flawless body types celebrated online and the constant comparison created by social media scrolling.

**Context explanation:** The author concludes that the issue requires media literacy, supportive spaces, and redefining beauty beyond shallow measurements. Such solutions make sense only when the problem is understood as a social and psychological crisis caused by digital beauty culture.

**Why other options are incorrect:**

- **Option A** is too general; the passage specifically emphasizes digital beauty ideals, not only peer pressure.
- **Option B** focuses on fashion and cosmetics, but the passage focuses on psychological distortion and online image culture.
- **Option D** wrongly claims academic counseling is the most essential; the passage stresses media literacy, empathy, and redefining beauty.

So the correct answer is (c)

**Q.99** . The author's tone in the concluding lines of the passage is:

Read the passage and answer the following questions.

For seventeen-year-old Meera, adolescence did not remain just a time of changing emotions and academic goals; it turned into a space where how she saw herself clashed painfully with her sense of worth. Living in a world flooded with polished online images and algorithm-led standards of attractiveness, Meera began to feel that even her own reflection was unreliable—almost like it was deceiving her. With every scroll through social media, a constant, nagging gap grew stronger: the difference between who she truly was and the flawless body types celebrated online. This was not ordinary teenage self-doubt; it slowly became a pattern of harsh self-judgment about her appearance. Over time, she started punishing herself in quiet ways—eating felt like something she had to “earn,” mirrors felt like enemies, and even compliments sounded like coded reminders that she still wasn't enough.

Her slide into dysmorphia was gradual and silent, not dramatic or obvious. On the surface, she remained bright in studies and pleasant in company, carefully wearing an image of normal life. But behind the practiced smiles, she was breaking down inwardly. She began distancing herself emotionally, brushing off her pain as mere vanity, and treating her own value as something insignificant. The moment things changed did not come with an outburst, but with a disturbing silence: she refused to eat for days, and this finally led to medical help. Therapy introduced her to the idea that her self-perception was distorted, and helped her develop the emotional support system needed to rebuild her damaged identity. With consistent counseling, Meera learned to separate society's imposed standards from her real, inner worth. Slowly, she started accepting that beauty is not a single fixed model decided by culture; rather, it exists in many forms shaped by diversity, well-being, and self-kindness. Meera's story is not an isolated case—it reflects a larger crisis in which many teenagers fight invisible battles behind seemingly perfect digital lives. Addressing this problem demands more than simple awareness; it requires sharp media literacy, supportive and empathetic spaces, and a broader redefinition of beauty that goes beyond shallow measurements.

- A. Sarcastic and dismissive
- B. Thoughtful and socially critical
- C. Cheerful and celebratory
- D. Emotionless and completely neutral

**Answer:** B

**Sol:** The correct option is (b).

The concluding lines move beyond Meera's personal story and present a wider social concern: many teenagers fight invisible battles behind perfect digital lives. The author then suggests solutions such as media literacy, supportive spaces, and redefining beauty. This approach shows reflection and evaluation rather than emotionless description or celebration.

Hence, the tone is best described as **thoughtful and socially critical**. The author thoughtfully analyses the problem and critically points out how algorithm-led beauty standards harm teenagers, demanding deeper responses than simple awareness.

**Context explanation:** Words and ideas like **larger crisis**, **invisible battles**, **demands more than simple awareness**, and the call for **media literacy** and **empathetic spaces** clearly show a serious, socially aware critique.

**Why other options are incorrect:**

- **Option A** is incorrect because the passage is sympathetic, not mocking or dismissive.
- **Option C** is incorrect because the passage deals with pain, dysmorphia, and a crisis; it is not cheerful.
- **Option D** is incorrect because the author is not neutral; the author strongly highlights the harm and suggests corrective measures.

So the correct answer is (b)

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**Q.100** 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 supervisor told the staff that the submission deadline had been pushed back by two days.

- A. "You can turn in the work two days after the scheduled date," the supervisor informed.
- B. "The submission deadline has been pushed back by two days," said the supervisor.
- C. "We are pushing back the submission deadline by two days," the supervisor said.
- D. "You must complete it within two additional days," the supervisor said.

**Answer:** B

**Sol:** The correct option is (b).

The indirect speech states that the supervisor informed the staff about a change in the deadline: **the submission deadline had been pushed back by two days**. The phrase **had been pushed back** is **past perfect passive**, which typically appears in reported speech when the original direct statement was in a present-perfect or past form and is being reported later.

To convert to direct speech, we remove the reporting clause and present the exact message. Option (b) gives a clear direct statement of the information: **The submission deadline has been pushed back by two days**. This matches the meaning accurately and keeps the passive idea of the deadline being extended (not focusing on who extended it).

**Rules of conversion used:**

- Remove the connector **that** and reporting structure in direct speech.
- Adjust tense appropriately: reported **past perfect** often corresponds to **present perfect** or a closer original tense in direct speech depending on context.
- Maintain the same meaning: deadline extension by two days.

**Why other options are incorrect:**

**Option A** changes the content and adds interpretation; it does not directly state that the deadline was pushed back.

**Option C** changes the structure to active and introduces 'we', which is not present in the reported sentence.

**Option D** changes the meaning to an instruction about finishing within two days, which is different from extending the deadline.

So the correct answer is (b)

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