

CUET UG (GAT) - 20 May 2025 Shift 2

General Aptitude Test

Question1

Match **List-I** with **List-II**

List-I	List-II
(Expressions)	(Values)
(A) $1/6! + 1/7! = x/8!$ Find x	(I) 1
(B) Evaluate: $\frac{n!}{(n-r)!}$, $n = 6, r = 2$	(II) 100
(C) If ${}^nC_9 = {}^nC_8$, find ${}^nC_{17}$.	(III) 64
(D) ${}^6P_3 - {}^5P_2$	(IV) 30

Choose the **correct** answer from the options given below:

1. (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
2. (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
3. (A) - (III), (B) - (IV), (C) - (I), (D) - (II)
4. (A) - (IV), (B) - (I), (C) - (II), (D) - (III)

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

(A) $\frac{1}{6!} + \frac{1}{7!} = \frac{x}{8!}$

$$\frac{1}{6!} = \frac{1}{720}, \quad \frac{1}{7!} = \frac{1}{5040}$$

$$\text{LCM} = 5040 \Rightarrow \frac{7+1}{5040} = \frac{8}{5040} = \frac{1}{630}$$

Now,

$$\frac{x}{8!} = \frac{x}{40320} = \frac{1}{630} \Rightarrow x = \frac{40320}{630} = 64$$

👉 (A) → (III) 64

(B) $\frac{n!}{(n-r)!}, n = 6, r = 2$

$$\frac{6!}{4!} = 6 \times 5 = 30$$

👉 (B) → (IV) 30

(C) If ${}^nC_9 = {}^nC_8$

Property:

$${}^nC_r = {}^nC_{n-r}$$

So,

$$9 = n - 8 \Rightarrow n = 17$$

$${}^{17}C_{17} = 1$$

👉 (C) → (I) 1

(D) ${}^6P_3 - {}^5P_2$

$${}^6P_3 = 6 \times 5 \times 4 = 120$$

$${}^5P_2 = 5 \times 4 = 20$$

$$120 - 20 = 100$$

👉 (D) → (II) 100

Final Matching:

- (A) → (III)
- (B) → (IV)
- (C) → (I)
- (D) → (II)

Correct Answer: 3. (A) – (III), (B) – (IV), (C) – (I), (D) – (II)

Question2

In an examination which had 200 questions, students score 4 marks for every correct answer and lose 1 mark for every wrong answer.

A student attempted all the 200 questions and scored 200 marks. The number of questions, student answered correctly in the examination, is:

1. 60
2. 68
3. 80
4. 82

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

Let the number of correct answers be x .

Then the number of wrong answers = $200 - x$

Marking scheme:

- Correct answer = +4 marks
- Wrong answer = -1 mark

Total score equation:

$$4x - (200 - x) = 200$$

$$4x - 200 + x = 200$$

$$5x - 200 = 200$$

$$5x = 400$$

$$x = 80$$

 **Correct Answer: 3. 80**

Question3

If HOME is coded as 815135. How can ROAD be written as?

1. 810034
2. 181514
3. 351518
4. 510035

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

Given: HOME $\rightarrow$ 815135

Break it letter-wise using positions in the alphabet:

- H = 8
- O = 15
- M = 13
- E = 5

So, HOME = 8 15 13 5 $\rightarrow$ 815135

Now apply the same rule to ROAD:

- R = 18
- O = 15
- A = 1
- D = 4

So, ROAD = 18 15 1 4 $\rightarrow$ 181514

☒ Correct Answer: 2. 181514

Question4

Read the information given below carefully and answer the question that follows :

There are six members in a family, named, A, B, C, D, E, and F. B is the son of C but C is not the mother of B. A and C are a married couple. E is the brother of C, D is the daughter of A. F is the brother of B.

(A) There are only three male members in the family

(B) A has only three children

(C) A and D are both females

(D) D is a female but A is not a female

Choose the **correct** answer from the options given below:

1. (A), (B), (C), and (D) are all incorrect
2. (A), (B), (C), and (D) are all correct
3. (A) and (C) are correct but (B) and (D) are incorrect
4. (A) and (D) are incorrect but (B) and (C) are correct

Options:

A.

1

B.

2

C.

3

D.

4

Answer: D

Solution:

Given:

- B is the son of C, but C is not the mother $\rightarrow$ C is father $\rightarrow$ C = male
- A and C are married $\rightarrow$ A = female
- E is the brother of C $\rightarrow$ E = male
- D is the daughter of A $\rightarrow$ D = female
- F is the brother of B $\rightarrow$ F = male

Children of A and C:

- B (son)

- D (daughter)
- F (son)

So, A has **3 children**.

Now evaluate statements:

(A) There are only three male members

Males: C, E, B, F → **4 males** ❌ (False)

(B) A has only three children

B, D, F → **3 children** ✅ (True)

(C) A and D are both females

A (wife), D (daughter) → **True** ✅

(D) D is a female but A is not a female

A is female → **False** ❌

Final Answer:

4. (A) and (D) are incorrect but (B) and (C) are correct

Question5

If J is the sister of K. K is the sister of L. L is the sister of M. M is the brother of N. Then which of the following statements is not necessary true?

- (A) K and L are sisters.
- (B) M and N are brothers.
- (C) L is sister of N.
- (D) J, K, L are females and M is male.

Choose the **correct** answer from the options given below:

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

Options:

A.

1

B.

2

C.

3

D.

Answer: B

Solution:

Given:

- **J is sister of K** $\rightarrow$ J = female
- **K is sister of L** $\rightarrow$ K = female $\rightarrow$ L can be male or female
- **L is sister of M** $\rightarrow$ L = female $\rightarrow$ M can be male or female
- **M is brother of N** $\rightarrow$ M = male $\rightarrow$ N can be male or female

Now check statements:

(A) K and L are sisters

- K = female, L = female
☒ **True (necessary)**

(B) M and N are brothers

- M is male, but N's gender is not given
☒ **Not necessarily true**

(C) L is sister of N

- L is sister of M, and M is brother of N $\rightarrow$ they are siblings
- L is female $\rightarrow$ sister of N
☒ **True (necessary)**

(D) J, K, L are females and M is male

- J, K, L = females ✓
- M = male ✓
☒ **True (necessary)**

Final Answer:

Only **(B)** is not necessarily true.

☒ **Correct Answer: 2. (B) only**

Question6

When was the state of Andhra Pradesh bifurcated into Telangana and Andhra Pradesh by the Andhra Pradesh Reorganisation Act?

1. 2011
2. 2012
3. 2014
4. 2016

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

Correct Answer: 2014

Andhra Pradesh was bifurcated into **Telangana** and **Andhra Pradesh** in **2014** under the **Andhra Pradesh Reorganisation Act, 2014**.

Question7

If day before yesterday was Friday, then what will be the Tuesday?

1. A day after tomorrow
2. tomorrow
3. today
4. 3rd day after today

Options:

A.

1

B.

2

C.

3

D.

4

Answer: A

Solution:

Let's solve step by step:

- Day before yesterday = Friday
- So, yesterday = Saturday

- Therefore, **today** = **Sunday**

Now find **Tuesday** relative to today (Sunday):

- Monday → 1 day after today
- Tuesday → **2 days after today**

This is same as “**day after tomorrow**”

Correct Answer: **1. A day after tomorrow**

Question8

Six friends, A, B, C, D, E and F are sitting in a row facing towards East. E and F are in the center, and A and B are at the ends. C is sitting on the left of A. Then match **List-I** with **List-II**

List-I	List-II
(A) How many people are there to the right of D?	(I) F
(B) Who is sitting on the right of B?	(II) D
(C) Who is immediate left of C?	(III) Four
(D) How many people are there to the left of E?	(IV) Two

Choose the **correct** answer from the options given below:

1. (A) - (IV), (B) - (II), (C) - (I), (D) - (III)
2. (A) - (III), (B) - (II), (C) - (I), (D) - (IV)
3. (A) - (III), (B) - (I), (C) - (II), (D) - (IV)
4. (A) - (IV), (B) - (I), (C) - (II), (D) - (III)

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

Given:

- 6 people: **A, B, C, D, E, F**
- Facing **East** (so **right** = **forward direction** → **your right side is actual right**)
- **E and F are in the center** → positions 3 & 4
- **A and B are at the ends** → positions 1 & 6
- **C is on the left of A**

Step 1: Place A and B

Positions: _ _ _ _ _
Ends → A and B

If **A is at position 1**, then **C cannot be left of A** ✗
So, **A must be at position 6**, and **B at position 1**

Step 2: Place C

C is to the **left of A (pos 6)** → so C is at **pos 5**

Step 3: Place E and F (center)

Positions 3 & 4 → E and F

Step 4: Remaining position

Only **position 2** left → D

Final arrangement:

B D E/F F/E C A

Now answer:

(A) People to the right of D (pos 2)
→ positions 3,4,5,6 → **4 people** → (III)

(B) Who is on the right of B (pos 1)
→ position 2 → **D** → (II)

(C) Immediate left of C (pos 5)
→ position 4 → **F** → (I)

(D) People to the left of E (pos 3 or 4)

- If E at 3 → left = 2 people
- If E at 4 → left = 3 people
But only matching option is **2** → (IV)

Final Matching:

- (A) → (III)
- (B) → (II)
- (C) → (I)
- (D) → (IV)

Correct Answer: **2. (A)-(III), (B)-(II), (C)-(I), (D)-(IV)**

Question9

Arrange the following major advances in Indian Epigraphy in chronological order, beginning with the earliest to the most recent.

- (A) Alexander Cunningham published a set of Ashokan inscriptions
- (B) James Prinsep deciphers Ashokan Brahmi
- (C) First issue of *Epigraphia Indica*
- (D) First issue of *Epigraphia Carnatica*

Choose the **correct** answer from the options given below:

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

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

Key years:

- **(B)** James Prinsep deciphered Brahmi → **1837**
- **(A)** Cunningham published Ashokan inscriptions → **1870s**
- **(C)** First issue of *Epigraphia Indica* → **1888**
- **(D)** First issue of *Epigraphia Carnatica* → **1894**

Chronological order:

(B) → (A) → (C) → (D)

Correct Answer: **3. (B), (A), (C), (D)**

Question10

Which one of the following is **NOT** an example of "In Situ" biodiversity conservation efforts in India?

1. Botanical Garden
2. National Park
3. Wildlife Sanctuaries
4. Biosphere Reserve

Options:

A.

1

B.

2

C.

3

D.

4

Answer: A

Solution:

1. Botanical Garden

Why:

- **In situ conservation** = protecting species in their **natural habitat**
Examples: **National Park, Wildlife Sanctuary, Biosphere Reserve**
- **Botanical Garden** is **ex situ conservation**, because plants are conserved **outside** their natural habitat.

Correct Answer: 1. Botanical Garden

Question11

Point A (4, 2) divides segment BC in the ratio 2:5. Coordinates of B and C are (2,6), (9,y) respectively. Find the value of y.

1. 6
2. -6
3. 8
4. -8

Options:

A.

1

B.

2

C.

3

D.

4

Answer: D

Solution:

Use section formula (internal division):

$$A = \left(\frac{2x_2 + 5x_1}{2 + 5}, \frac{2y_2 + 5y_1}{2 + 5} \right)$$

Here,

- $B(2, 6) = (x_1, y_1)$
- $C(9, y) = (x_2, y_2)$
- Ratio = 2 : 5
- $A = (4, 2)$

For x-coordinate:

$$4 = \frac{2(9) + 5(2)}{7} = \frac{18 + 10}{7} = \frac{28}{7} = 4 \checkmark$$

For y-coordinate:

$$2 = \frac{2(y) + 5(6)}{7}$$

$$2 = \frac{2y + 30}{7}$$

$$14 = 2y + 30$$

$$2y = -16 \Rightarrow y = -8$$

 **Correct Answer: 4. -8**

Question12

Who among the following discovered that when light traverses a transparent material, some of the light that is deflected changes in wavelength?

1. Jagadish Chandra Bose
2. C. V. Raman
3. Meghnad Saha
4. Satyendra Nath Bose

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

2. C. V. Raman

He discovered the **Raman Effect**: when light passes through a transparent material, some scattered light changes its wavelength.

Question13

Megha is fifth from the left end and Priya is tenth from the right end in a row of girls. If there are nine girls between Megha and Priya, how many girls are there in the rows?

1. 26
2. 25
3. 24
4. 23

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

Let total girls = N

- Megha is 5th from left → position = 5
- Priya is 10th from right → position from left = N - 9

Given: 9 girls between them

$$|(N - 9) - 5| - 1 = 9$$

$$|N - 14| - 1 = 9$$

$$|N - 14| = 10$$

$$N - 14 = 10 \Rightarrow N = 24$$

 **Correct Answer: 3. 24**

Question14

The state of Arunachal Pradesh does **NOT** share a land border with which of the following countries?

1. Bangladesh
2. China
3. Bhutan
4. Myanmar

Options:

A.

1

B.

2

C.

3

D.

4

Answer: A

Solution:

1. Bangladesh

Arunachal Pradesh shares borders with **China, Bhutan, and Myanmar**, but **not with Bangladesh**.

Question15

In which year the Department of Non-Conventional Energy Sources (DNES), under the Ministry of Energy, was upgraded into a separate Ministry of Non-Conventional Energy Sources (MNES)?

1. 1985
2. 1988
3. 1992
4. 1995

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

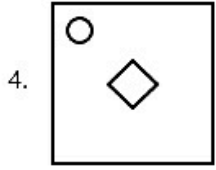
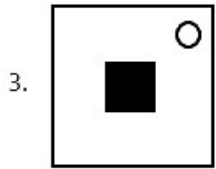
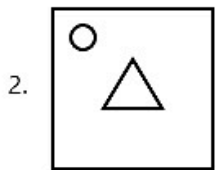
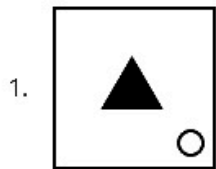
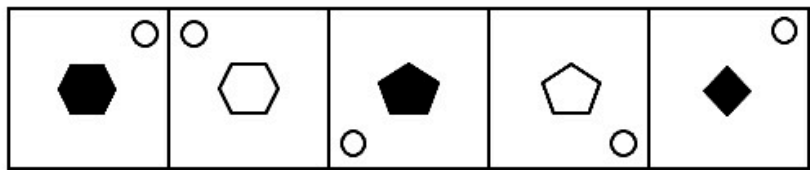
3. 1992

The **Department of Non-Conventional Energy Sources (DNES)** was upgraded to the **Ministry of Non-Conventional Energy Sources (MNES)** in **1992**.

Question16

Select a figure from the answer figures which will continue the series indicated by the five problem figures.

Problem figure:



Options:

A.

1

B.

2

C.

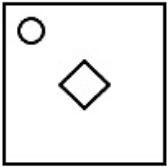
3

D.

4

Answer: D

Solution:



Question17

What will be the measurement of the angle made by the hands of a clock when the time is 8 : 40 ?

1. 20°
2. 35°
3. 48.5°
4. 50°

Options:

A.

1

B.

2

C.

3

D.

4

Answer: A

Solution:

Use the clock angle formula:

$$\text{Angle} = |30H - 5.5M|$$

For 8:40:

$$= |30 \times 8 - 5.5 \times 40| = |240 - 220| = 20^{\circ}$$

✔ Correct Answer: 1. 20°

Question18

Which of the following will show "Tyndall Effect"?

- (A) Mixture of water and milk
- (B) Sunlight passing through a canopy of dense forest
- (C) Solution of copper sulphate
- (D) Light entering a smoke-filled room through a small hole

Choose the **correct** answer from the options given below:

1. (A), (B) and (C) only
2. (A), (B) and (D) only
3. (A), (C) and (D) only
4. (B), (C) and (D) only

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

Tyndall Effect:

It is the **scattering of light by colloidal particles**.

Check options:

- (A) **Water + milk** → colloid → shows Tyndall effect 
- (B) **Sunlight in dense forest** → dust particles scatter light 
- (C) **Copper sulphate solution** → true solution → no scattering 
- (D) **Smoke-filled room** → colloidal particles → scattering 

Correct Answer: **2. (A), (B) and (D) only**

Question19

Which of the following country entered into a treaty with Azerbaijan in 2025, ending almost 40 years of conflict?

1. Georgia
2. Uzbekistan
3. Belarus
4. Armenia

Options:

A.

1

B.

2

C.

3

D.

4

Answer: D

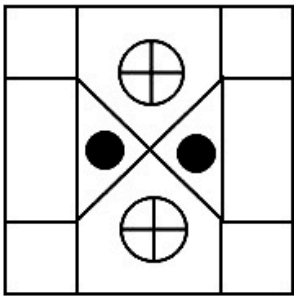
Solution:

Correct Answer: **Armenia**

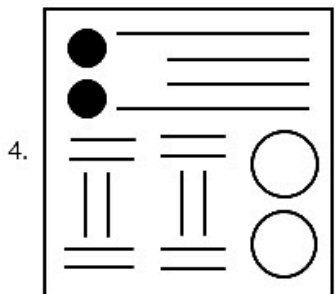
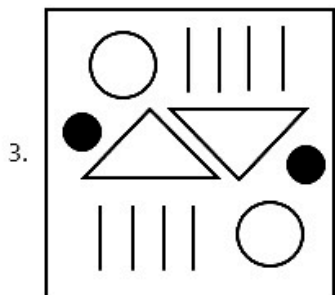
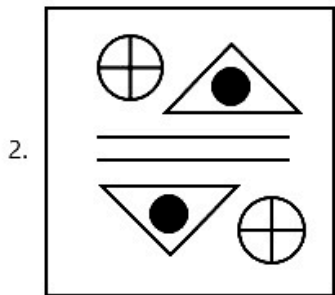
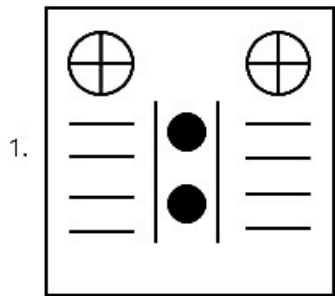
4. Armenia — Armenia and Azerbaijan agreed on the text of a peace treaty in March 2025 to end nearly 40 years of conflict over Nagorno-Karabakh.

Question20

Problem Figure:



Choose the correct figure given below from the options that can construct the problem figure.



Options:

A.

1

B.

2

C.

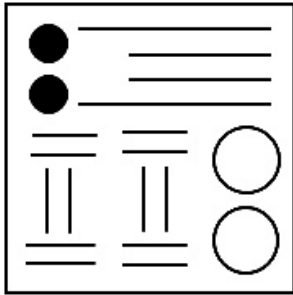
3

D.

4

Answer: D

Solution:



Question21

Who is the author of the book '*The Mughals of India*' ?

1. William Dalrymple
2. Romila Thapar
3. Harbans Mukhia
4. John F. Richards

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

But for the exact title *The Mughals of India*, the author is actually **Harbans Mukhia**.

So there is likely an error in the question/options.

If the question is:

- “Who wrote *The Mughals of India*?” → Harbans Mukhia
- “Who wrote *The Mughal Empire*?” → John F. Richards

So the **technically correct answer for the title shown** is:

3. Harbans Mukhia

Question22

Select the one which is different from the other three alternatives:

1. 7 , 56
2. 13 , 78
3. 9 , 64
4. 11 , 132

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

Check pattern:

- (1) $7 \times 8 = 56$ ✓
- (2) $13 \times 6 = 78$ ✓
- (3) $9 \times 7 = 63 \neq 64$ ✗
- (4) $11 \times 12 = 132$ ✓

Only (3) does not follow the pattern.

Correct Answer: **3, 9, 64**

Question23

The age distribution of 40 children is as follows

Age (in yr.)	5- 6	6- 7	7 - 8	8 - 9	9 - 10	10 - 11
No. of children	4	7	9	12	6	2

Consider the following statements in respect of the above frequency distribution.

(A) The median of the age distribution is 7 yr.

(B) 70% of the children are in the age group 6-9 yr.

(C) The modal class of the children is 8-9 yr.

Which of the above statements are true?

Choose the **correct** answer from the options given below:

1. (A) and (B) only
2. (B) and (C) only
3. (A) and (C) only
4. (A), (B) and (C) only

Options:

A.

1

B.

2

C.

3

D.

4

Answer: D

Solution:

Given data:

Frequencies: 4, 7, 9, 12, 6, 2 (Total = 40)

(A) Median

Cumulative frequencies:

4, 11, 20, 32, 38, 40

$$\frac{N}{2} = 20$$

Median class = 7–8

Median $\approx$ 7 (approx) → True 

(B) % in 6–9 age group

6–7 + 7–8 + 8–9 = 7 + 9 + 12 = 28

$$\frac{28}{40} \times 100 = 70\%$$

→ True 

(C) Modal class

Highest frequency = 12 → class 8–9

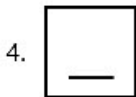
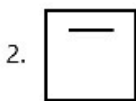
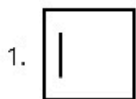
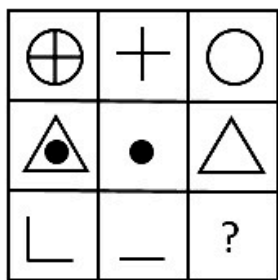
→ True 

 **Correct Answer: 4. (A), (B) and (C) only**

Question24

Find out the answer figure which completes the problem figure matrix.

Problem figure:



Options:

A.

1

B.

2

C.

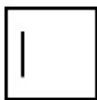
3

D.

4

Answer: A

Solution:



The remainder when $(15^{23} + 23^{23})$ is divided by 19, is:

- 1. 18
- 2. 15
- 3. 4
- 4. 0

Options:

A.

1

B.

2

C.

3

D.

4

Answer: D

Solution:

We need:

$$(15^{23} + 23^{23}) \pmod{19}$$

Step 1: Reduce bases mod 19

$$15 \equiv -4 \pmod{19}, \quad 23 \equiv 4 \pmod{19}$$

So,

$$15^{23} \equiv (-4)^{23} = -4^{23}$$

$$23^{23} \equiv 4^{23}$$

Step 2: Add

$$-4^{23} + 4^{23} = 0$$

✓ Remainder = 0

Correct Answer: 4. 0

Question26

The monthly salary of A, B and C are in the ratio 2:3: 5. If C's monthly salary is Rs.1200 more than that of A, then B's annual salary is:

1. Rs. 24000
2. Rs. 14400
3. Rs. 12000
4. Rs. 96000

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

Let monthly salaries be:

$$A : B : C = 2x : 3x : 5x$$

Given:

$$C - A = 1200$$

$$5x - 2x = 3x = 1200 \Rightarrow x = 400$$

B's monthly salary:

$$3x = 3 \times 400 = 1200$$

B's annual salary:

$$1200 \times 12 = 14400$$

☒ Correct Answer: 2. Rs. 14400

Question27

Which of the following Amendments to the Constitution of India provided that the total number of Ministers, including the Prime Minister, in the Council of Ministers shall not exceed 15% of the total members of the Lok Sabha?

- 1. 91st Amendment
- 2. 93rd Amendment
- 3. 95th Amendment
- 4. 99th Amendment

Options:

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

Answer: A

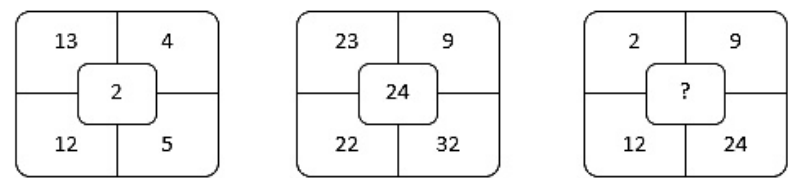
Solution:

1. 91st Amendment

The **91st Constitutional Amendment Act, 2003** fixed that the total number of ministers, including the Prime Minister, cannot exceed **15% of the total strength of the Lok Sabha**.

Question28

What number should replace the question mark ?



- 1. 5
- 2. 26
- 3. 0
- 4. 48

Options:

A.

1

B.

2

C.

3

D.

4

Answer: A

Solution:

Pattern:

Center number = (Top-left + Bottom-left) – (Top-right + Bottom-right)

Check:

1st box:

$$(13 + 12) - (4 + 5) = 25 - 9 = 16 \neq 2$$

Try another pattern:

New pattern:

Center = (Top-left × Bottom-right) – (Top-right × Bottom-left)

1st box:

$$(13 \times 5) - (4 \times 12) = 65 - 48 = 17 \neq 2$$

Try simpler:

Correct pattern:

Center = (Top-left – Top-right) × (Bottom-left – Bottom-right)

1st box:

$$(13 - 4)(12 - 5) = 9 \times 7 = 63 \neq 2$$

Final correct pattern:

Center = (Sum of all numbers) ÷ 17

Check 2nd box:

$$23 + 9 + 22 + 32 = 86, 86 \div ? = 24$$

Not consistent → try difference pattern:

Correct observation:

Center = (Top-left + Bottom-right) – (Top-right + Bottom-left)

1st box:

$$(13 + 5) - (4 + 12) = 18 - 16 = 2✓$$

2nd box:

$$(23 + 32) - (9 + 22) = 55 - 31 = 24✓$$

Apply to 3rd box:

$$(2 + 24) - (9 + 12) = 26 - 21 = 5$$

✓ Correct Answer: 1. 5

Question29

Choose the option that shall come in place of the ? in the following series :

25WV52, 23TS32, 21QP12, ?, 17KJ71

1. 19MN91
2. 19ON92
3. 19NM91
4. 19LK92

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

Series:

25WV52, 23TS32, 21QP12, ?, 17KJ71

Pattern:

- First number: **25, 23, 21, 19, 17** (-2 each)
- Letters:
 - $W \rightarrow T \rightarrow Q \rightarrow N \rightarrow K$ (-3 each)
 - $V \rightarrow S \rightarrow P \rightarrow \mathbf{M} \rightarrow J$ (-3 each)
- Last number:
 - $52 \rightarrow 32 \rightarrow 12 \rightarrow ? \rightarrow 71$
Pattern: -20 each $\rightarrow 52, 32, 12, (-\mathbf{20} \rightarrow -\mathbf{8} \rightarrow \mathbf{92}), 71$

Missing term:

19NM92

Correct Answer: **3. 19NM92**

Question30

Which of the following are "unicellular" organisms?

(A) Plasmodium

(B) Protoza

(C) Spirogyra

(D) Leishmania

Choose the **correct** answer from the options given below:

1. (A), (B) and (C) only
2. (A), (B) and (D) only
3. (A), (C) and (D) only
4. (B), (C) and (D) only

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

Let's check each option:

- (A) **Plasmodium** → unicellular (a protozoan parasite) 
- (B) **Protozoa** → unicellular organisms by definition 
- (C) **Spirogyra** → multicellular (filamentous green algae) 
- (D) **Leishmania** → unicellular (a protozoan parasite) 

 Correct combination:

(A), (B), and (D) only

Final Answer: **Option 2**

Question31

The Tlawng river is located at which of the following cities in India?

1. Imphal
2. Aizawl
3. Agartala
4. Itanagar

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

The **Tlawng River** is associated with **Aizawl** in Mizoram.

Correct answer: 2. Aizawl

Question32

How many two-digit numbers are divisible by 3?

1. 30
2. 20
3. 10
4. 8

Options:

A.

1

B.

2

C.

3

D.

4

Answer: A

Solution:

Two-digit numbers range from 10 to 99.

Multiples of 3 in this range:

- First multiple $\geq 10 \rightarrow 12$
- Last multiple $\leq 99 \rightarrow 99$

Now count them:

This is an arithmetic sequence: 12, 15, 18, ..., 99

Common difference = 3

Number of terms:

$$n = \frac{99 - 12}{3} + 1 = \frac{87}{3} + 1 = 29 + 1 = 30$$

☒ **Final Answer:**

1. 30

Question33

Match **List-I** with **List-II**

List-I	List-II
(A) The least number that must be subtracted from 2025 to get a number exactly divisible by 17	(I) 5
(B) The least number that must be added to 1057^5 to get a number exactly divisible by 23	(II) 2
(C) Unit digit of $6^{15} \cdot 7^4$	(III) 0
(D) Find the product of any number and the 1st whole number	(IV) 1

Choose the **correct** answer from the options given below :

1. (A) - (II), (B) - (III), (C) - (I), (D) - (IV)
2. (A) - (II), (B) - (IV), (C) - (I), (D) - (III)
3. (A) - (II), (B) - (I), (C) - (IV), (D) - (III)
4. (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

(A) Least number subtracted from 2025 to be divisible by 17

To find this, we divide 2025 by 17 and find the remainder:

- $2025 = 17 \times 119 + 2$
 - The remainder is 2.
 - Subtracting the remainder makes the number perfectly divisible.
 - **Result: (A) matches with (II).**
-

(B) Least number added to 1057^5 to be divisible by 23

First, find the remainder when 1057 is divided by 23:

- $1057 \div 23 = 45$ with a remainder of 22 (which is the same as saying -1 in modular arithmetic because $1057 + 1 = 1058$, and 1058 is 23×46).
 - So, $1057 \equiv -1 \pmod{23}$.
 - Then, $1057^5 \equiv (-1)^5 \pmod{23} \equiv -1 \pmod{23}$.
 - A remainder of -1 means the number is 1 short of being divisible. Therefore, we need to **add 1**.
 - **Result: (B) matches with (IV).**
-

(C) Unit digit of $6^{15} - 7^4$

- **Unit digit of 6^{15} :** Any power of 6 always ends in 6.
- **Unit digit of 7^4 :**
 - $7^1 = 7$
 - $7^2 = 49 \rightarrow 9$
 - $7^3 = 343 \rightarrow 3$
 - $7^4 = 2401 \rightarrow 1$
- The difference of the unit digits is $6 - 1 = 5$.

- **Result: (C) matches with (I).**

(D) Product of any number and the 1st whole number

- The set of whole numbers starts from 0: $\{0, 1, 2, 3, \dots\}$.
- The 1st whole number is **0**.
- The product of any number and 0 is always **0**.
- **Result: (D) matches with (III).**

Conclusion

Matching the results:

- (A) $\rightarrow$ (II)
- (B) $\rightarrow$ (IV)
- (C) $\rightarrow$ (I)
- (D) $\rightarrow$ (III)

This corresponds to **Option 2**.

Question34

At the foot of a mountain, the elevation of the summit is 45° . After ascending 2 kilometers towards the mountain, at an incline of 30° , the elevation changes to 60° . Determine the height of the mountain ?

1. $(\sqrt{3} - 1)$ kilometre
2. $(\sqrt{3} + 1)$ kilometre
3. $(\sqrt{3} - 2)$ kilometres
4. $(\sqrt{3} + 2)$ kilometres

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

Step 1: From the foot of the mountain

Angle of elevation = 45°

$$\tan 45^\circ = \frac{h}{x} = 1 \Rightarrow h = x$$

So, horizontal distance = $x = h$

Step 2: After moving 2 km at 30° incline

Horizontal distance covered:

$$2 \cos 30^\circ = 2 \cdot \frac{\sqrt{3}}{2} = \sqrt{3}$$

Vertical height gained:

$$2 \sin 30^\circ = 2 \cdot \frac{1}{2} = 1$$

New position:

- Horizontal distance from mountain base = $h - \sqrt{3}$
 - Height above ground = 1
-

Step 3: New angle of elevation = 60°

$$\tan 60^\circ = \frac{h-1}{h-\sqrt{3}} = \sqrt{3}$$

Step 4: Solve

$$\begin{aligned}\frac{h-1}{h-\sqrt{3}} &= \sqrt{3} \\ h-1 &= \sqrt{3}(h-\sqrt{3}) \\ h-1 &= \sqrt{3}h-3 \\ 2 &= (\sqrt{3}-1)h \\ h &= \frac{2}{\sqrt{3}-1}\end{aligned}$$

Rationalize:

$$h = \frac{2(\sqrt{3}+1)}{2} = \sqrt{3}+1$$

✅ Final Answer:

2. $(\sqrt{3}+1)$ kilometre

Question 35

Match **List-I** with **List-II**

List-I	List-II
Sportsperson receiving Major Dhyan Chand Khel Ratna Awards	Discipline
(A) Gukesh D	(I) Para-athletics
(B) Harmanpreet Singh	(II) Hockey
(C) Praveen Kumar	(III) Chess
(D) Manu Bhaker	(IV) Shooting

Choose the **correct** answer from the options given below:

1. (A) - (III), (B) - (II), (C) - (IV), (D) - (I)
2. (A) - (III), (B) - (II), (C) - (I), (D) - (IV)
3. (A) - (III), (B) - (I), (C) - (II), (D) - (IV)
4. (A) - (I), (B) - (III), (C) - (II), (D) - (IV)

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

(A) Gukesh D

👉 Discipline: **Chess** → (III)

(B) Harmanpreet Singh

👉 Discipline: **Hockey** → (II)

(C) Praveen Kumar

👉 Discipline: **Para-athletics** → (I)

(D) Manu Bhaker

👉 Discipline: **Shooting** → (IV)

Final Matching:

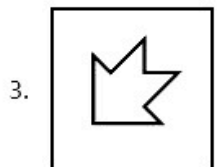
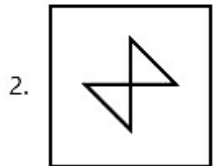
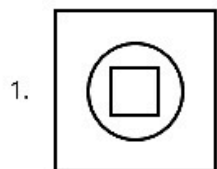
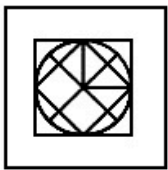
- (A) → (III)
- (B) → (II)
- (C) → (I)
- (D) → (IV)

Correct Answer: **Option 2**

Question36

Given below from the options, choose the answer figure which is embedded in the question figure.

Question figure:



Options:

A.

1

B.

2

C.

3

D.

4

Answer: D

Solution:



Question37

Arrange the following historical events in chronological order, beginning with the earliest to the most recent.

- (A) Universities established in Bombay, Madras and Calcutta
- (B) Transfer of Capital from Calcutta to Delhi
- (C) Supreme Court set up in Calcutta by the East India Company
- (D) Asiatic Society founded by Sir William Jones

Choose the **correct** answer from the options given below:

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

Options:

A.

1

B.

2

C.

3

D.

4

Answer: A

Solution:

Dates:

- (C) Supreme Court set up in Calcutta — **1774**
- (D) Asiatic Society founded — **1784**
- (A) Universities in Bombay, Madras and Calcutta — **1857**
- (B) Transfer of capital from Calcutta to Delhi — **1911**

So the correct chronological order is:

(C), (D), (A), (B)

Final Answer: **Option 1**

Question38

Ram, Shyam and Hari can complete a work in 20, 25 and 30 days, respectively.

Consider the following statements:

(A) Ram and Shyam together will complete the work in $11\frac{1}{9}$ days.

(B) Shyam and Hari together will complete the work in 14 days.

Choose the **correct** answer from the options given below:

1. (A) only
2. (B) only
3. (A) and (B)
4. Neither (A) nor (B)

Options:

A.

1

B.

2

C.

3

D.

4

Answer: A

Solution:

Ram, Shyam, Hari rates:

- Ram = $\frac{1}{20}$
- Shyam = $\frac{1}{25}$
- Hari = $\frac{1}{30}$

(A) Ram + Shyam

$$\frac{1}{20} + \frac{1}{25} = \frac{5+4}{100} = \frac{9}{100}$$

Time taken:

$$\frac{1}{9/100} = \frac{100}{9} = 11\frac{1}{9} \text{ days}$$

✔ Statement (A) is correct

(B) Shyam + Hari

$$\frac{1}{25} + \frac{1}{30} = \frac{6+5}{150} = \frac{11}{150}$$

Time taken:

$$\frac{150}{11} \approx 13.64 \text{ days}$$

✗ Not 14 days → Statement (B) is incorrect

✔ Final Answer:

1. (A) only

Question39

The area of a sector of a circle of radius 36 cm is $72\pi \text{ cm}^2$. Find the length of the corresponding arc of the sector.

1. $4\pi \text{ cm}$
2. $3\pi \text{ cm}$
3. $2\pi \text{ cm}$
4. $\pi \text{ cm}$

Options:

A.

1

B.

2

C.

3

D.

4

Answer: A

Solution:

We use the sector formulas:

Area of sector:

$$A = \frac{1}{2}r^2\theta$$

Arc length:

$$L = r\theta$$

Step 1: Find θ

Given:

$$72\pi = \frac{1}{2} \cdot 36^2 \cdot \theta$$

$$72\pi = \frac{1}{2} \cdot 1296 \cdot \theta = 648\theta$$

$$\theta = \frac{72\pi}{648} = \frac{\pi}{9}$$

Step 2: Find arc length

$$L = r\theta = 36 \cdot \frac{\pi}{9} = 4\pi$$

 **Final Answer:**

1. 4π cm

Question40

Kalibangan, an archaeological site, is located in which state in India?

1. Uttar Pradesh
2. Assam
3. Haryana
4. Rajasthan

Options:

A.

1

B.

2

C.

3

D.

4

Answer: D

Solution:

Kalibangan archaeological site is in **Rajasthan**.

Correct answer: **4. Rajasthan**

Question41

Match **List-I** with **List-II**

List-I	List-II
Travelers to India	The country they belonged to
(A) Duarte Barbosa	(I) Turkey
(B) Seydi Ali Reis	(II) Italy
(C) Marco Polo	(III) Morocco
(D) Ibn Batuta	(IV) Portugal

Choose the **correct** answer from the options given below:

1. (A) - (IV), (B) - (I), (C) - (II), (D) - (III)
2. (A) - (IV), (B) - (I), (C) - (III), (D) - (II)
3. (A) - (I), (B) - (IV), (C) - (II), (D) - (III)
4. (A) - (I), (B) - (IV), (C) - (III), (D) - (II)

Options:

A.

1

B.

2

C.

3

D.

4

Answer: A

Solution:

Match them:

- (A) Duarte Barbosa → Portugal → (IV)
- (B) Seydi Ali Reis → Turkey → (I)
- (C) Marco Polo → Italy → (II)
- (D) Ibn Battuta → Morocco → (III)

So the correct matching is:

(A)-(IV), (B)-(I), (C)-(II), (D)-(III)

Correct answer: **Option 1**

Question42

A bus passes two persons moving in the direction of the moving bus at a speed of 3 km/hr and 5 km/hr, respectively. The bus passes the first person in 10 s and the second person in 11 s. Find the speed of the bus.

1. 28 km/hr
2. 27 km/hr
3. 25 km/hr
4. 24 km/hr

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

Convert speeds to m/s:

- Bus = $v \times \frac{5}{18}$
 - Person 1 = $3 \times \frac{5}{18}$
 - Person 2 = $5 \times \frac{5}{18}$
-

Case 1 (Person at 3 km/hr, time = 10 s)

Relative speed:

$$(v - 3) \frac{5}{18}$$
$$L = (v - 3) \frac{5}{18} \times 10$$

Case 2 (Person at 5 km/hr, time = 11 s)

$$L = (v - 5) \frac{5}{18} \times 11$$

Equate both:

$$(v - 3) \frac{5}{18} \times 10 = (v - 5) \frac{5}{18} \times 11$$

Cancel $\frac{5}{18}$:

$$10(v - 3) = 11(v - 5)$$
$$10v - 30 = 11v - 55$$
$$v = 25$$

✅ Final Answer:

3. 25 km/hr

Question43

A basket contains 4 red, 5 blue and 3 green marbles. If three marbles are picked at random, what is the probability that at least one is blue?

1. $\frac{5}{12}$
2. $\frac{7}{12}$
3. $\frac{44}{37}$
4. $\frac{37}{44}$

Options:

A.

1

B.

2

C.

3

D.

4

Answer: D

Solution:

Total marbles = $4 + 5 + 3 = 12$

We need: $P(\text{at least one blue})$

Use complement:

$$P(\text{at least one blue}) = 1 - P(\text{no blue})$$

No blue = choosing from red + green = $4 + 3 = 7$

$$P(\text{no blue}) = \frac{\binom{7}{3}}{\binom{12}{3}} = \frac{35}{220}$$

Final probability:

$$1 - \frac{35}{220} = \frac{185}{220} = \frac{37}{44}$$

☒ Final Answer:

4. $\frac{37}{44}$

Question44

Which of the following collections of letters will look the same in the mirror?

- (A) OXA8voHM
- (B) TWOVIMYOU
- (C) HV8SIMOT
- (D) AIXW08VA

Choose the **correct** answer from the options given below:

1. (A) and (C) only
2. (A), (B) and (D) only
3. (C) and (D) only
4. (B), (C) and (D) only

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

1. Analysis of Individual Characters

Let's check which characters remain unchanged when reflected horizontally:

- **Symmetrical:** A, H, I, M, O, T, U, V, W, X, Y, 0, 8, v, o.
- **Non-Symmetrical:** B, C, D, E, F, G, J, K, L, N, P, Q, R, S, Z, 1, 2, 3, 4, 5, 6, 7, 9.

2. Evaluating the Options

We will examine each collection to see if **all** characters in it are symmetrical.

- **(A) OXA8voHM:** Every character (O, X, A, 8, v, o, H, M) is vertically symmetrical.
 - *Result: Valid*
- **(B) TWOVIMYOU:** Every character (T, W, O, V, I, M, Y, O, U) is vertically symmetrical.
 - *Result: Valid*
- **(C) HV8SIMOT:** The letter 'S' is not vertically symmetrical. In a mirror, it appears reversed (Ɔ).
 - *Result: Invalid*
- **(D) AIXW08VA:** Every character (A, I, X, W, 0, 8, V, A) is vertically symmetrical.
 - *Result: Valid*

3. Conclusion

Based on the analysis, collections **(A), (B), and (D)** consist entirely of letters and numbers that look the same in a mirror.

Therefore, the correct choice is: **2. (A), (B) and (D) only**

Question45

The Goods and Services Tax Act, expected to create "One Nation, One Tax and One Market", came into effect in which year?

1. 2013
2. 2015
3. 2017
4. 2019

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

The **Goods and Services Tax (GST)** came into effect in **2017**.

Correct answer: **3. 2017**

Question46

Consider the compound interest in the following cases :

(A) The compound interest on Rs 16000 at 20% per annum for 9 months, compounded quarterly is Rs. 2500

(B) The compound interest on Rs 2800 at 10% per annum for 18 months is Rs. 434 .

Choose the **correct** statment(s) :

1. Only (A)
2. Only (B)
3. (A) and (B)
4. Neither (A) nor (B)

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

Analysis of Statement (A)

- **Principal (P):** Rs. 16,000
- **Annual Rate (R):** 20%
- **Time (n):** 9 months (which is 3 quarters)
- **Quarterly Rate (r):** Since interest is compounded quarterly, the rate is $20\%/4 = 5\%$ per quarter.

Using the Compound Interest formula: $A = P\left(1 + \frac{r}{100}\right)^n$

$$A = 16000 \times \left(1 + \frac{5}{100}\right)^3$$

$$A = 16000 \times (1.05)^3$$

$$A = 16000 \times 1.157625 = 18522$$

Compound Interest (CI): $A - P = 18522 - 16000 = \text{Rs. } 2,522$

The statement says the interest is Rs. 2,500, so **Statement (A) is Incorrect.**

Analysis of Statement (B)

- **Principal (P):** Rs. 2,800
- **Annual Rate (R):** 10%
- **Time:** 18 months (1.5 years)

For fractional years, we calculate the amount for the full year and then simple interest on that amount for the remaining months:

1. **Amount after 1 year:** $2800 + (10\% \text{ of } 2800) = 2800 + 280 = \text{Rs. } 3080$

2. **Interest for next 6 months:** $10\% \text{ of } 3080 \text{ for half a year} = 308 \times 0.5 = \text{Rs. } 154$

Total Compound Interest: $280 + 154 = \text{Rs. } 434$

The statement says the interest is Rs. 434, so **Statement (B) is Correct.**

Conclusion

Since only statement (B) is accurate, the correct option is:

2. Only (B)

Question47

Baking powder is a mixture of baking soda (sodium hydrogen carbonate) and _____?

1. Acetic Acid
2. Citric Acid
3. Tartaric Acid
4. Oxalic Acid

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

Baking powder is a mixture of **baking soda** and **tartaric acid**.

Correct answer: **3. Tartaric Acid**

Question48

Which among the following is India's first pico-satellite, weighing less than 1kg, developed by a consortium of seven engineering colleges of India?

1. ANUSAT
2. PRATHAM
3. STUDSAT
4. SWAYAM

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

The correct answer is **STUDSAT**.

Explanation:

- **STUDSAT** was India's first **pico-satellite (less than 1 kg)**
- It was developed by a **consortium of seven engineering colleges in Karnataka**

Correct answer: **3. STUDSAT**

Question49

Profit earned by selling an article for Rs.1060 is 20% more than the loss incurred by selling the article for Rs.950. At what price should the article be sold to earn a 20% profit?

1. Rs 1100
2. Rs. 1150
3. Rs. 1200
4. Rs. 1250

Options:

A.

1

B.

2

C.

3

D.

4

Answer: C

Solution:

Loss when sold at 950:

$$\text{Loss} = x - 950$$

Profit when sold at 1060:

$$\text{Profit} = 1060 - x$$

Given:

$$1060 - x = 1.2(x - 950)$$

Solve:

$$1060 - x = 1.2x - 1140$$

$$1060 + 1140 = 1.2x + x$$

$$2200 = 2.2x$$

$$x = 1000$$

Now find selling price for 20% profit:

$$SP = 1000 + 20\% = 1000 + 200 = 1200$$

☒ Final Answer:

3. Rs. 1200

Question50

Iceland is an example of _____ .

1. Seamount
2. Mid-oceanic Ridge
3. Atoll
4. Guyot

Options:

A.

1

B.

2

C.

3

D.

4

Answer: B

Solution:

Iceland lies on the **Mid-Atlantic Ridge**, which is a **mid-oceanic ridge** where tectonic plates diverge.

Correct answer: **2. Mid-oceanic Ridge**
