

PART I : PHYSICS

This section contains **10 Single Choice Questions (Q : 01 to Q : 10)**. Each question has four choices **(A), (B), (C) and (D)** out of which **ONLY ONE** is correct.

1. Why is a wind mill considered a useful energy device?

- (A) It stores chemical energy
- (B) It turns light into sound
- (C) It converts wind energy into mechanical energy
- (D) It uses heat to move

2. Why does a pressure cooker whistle when food is being cooked?

- (A) Because of light energy
- (B) Because of sound and chemical energy
- (C) Due to heat energy building pressure
- (D) Due to electric energy release

3. Match **Column - I** with **Column - II** and select the correct answer using the codes given below.

Column - I	Column - II
(Misconception)	(Correction)
P. Sound travels in vacuum	1. Needs medium to travel
Q. Cold objects have no energy	2. They still have some heat energy

R. Light travels slow in space

3. It travels fastest in vacuum

S. Only batteries store energy

4. Food and fuel also store energy

Code :

- | | P | Q | R | S |
|-----|----------|----------|----------|----------|
| (A) | 1 | 2 | 3 | 4 |
| (B) | 4 | 3 | 2 | 1 |
| (C) | 3 | 1 | 4 | 2 |
| (D) | 2 | 1 | 4 | 3 |

4. Which of the following uses chemical energy stored inside to work?

- (A) Solar panel
- (B) Torch with batteries
- (C) Electric oven
- (D) Table fan

5. Which of the following situations shows both a change in shape and a change in motion due to force?

- (A) Kicking a football
- (B) Squeezing a rubber ball
- (C) Hitting a moving car with a hammer
- (D) Opening a door slowly

Space for rough work

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6. Assertion (A): A football lying on the ground will not start moving on its own.

Reason (R): An object continues to stay at rest unless an external force is applied.

- (A) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).
- (B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).
- (C) Assertion (A) is true and Reason (R) is false.
- (D) Assertion (A) is false and Reason (R) is true.

Paragraph for Questions 07 & 08

Geothermal energy comes from the heat stored deep inside the Earth. This heat can be accessed by drilling deep wells to pump hot water or steam. The steam is then used to rotate turbines connected to generators. Geothermal energy is clean and available all the time, but it is only possible in certain areas like volcanic or tectonic zones.

7. Where is geothermal energy found?

- (A) In the ocean
- (B) Deep inside the Earth
- (C) In trees and plants
- (D) In sunlight

8. Why is geothermal energy not used everywhere?

- (A) It is too expensive
- (B) It is available only in special regions
- (C) It produces too much smoke
- (D) It depends on wind

9. Assertion (A) : Hydroelectric power plants use the kinetic energy of flowing water to produce electricity.

Reason (R) : Water stored at height has only kinetic energy.

- (A) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).
- (B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).
- (C) Assertion (A) is true and Reason (R) is false.
- (D) Assertion (A) is false and Reason (R) is true.

Sequence Based

10. Arrange the flow of energy in a television working with a remote control:

- 1.** Remote sends signal
- 2.** Battery releases electrical energy
- 3.** TV receives signal
- 4.** TV uses electricity to display

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

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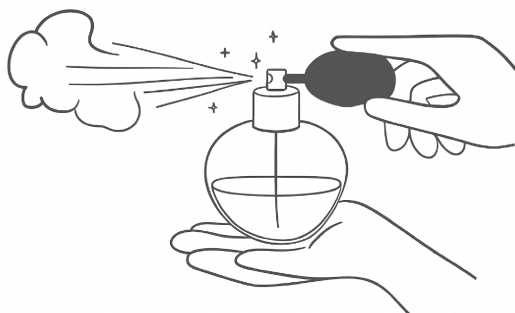
PART II : CHEMISTRY

This section contains **10 Single Choice Questions (Q : 11 to Q : 20)**. Each question has four choices **(A), (B), (C) and (D)** out of which **ONLY ONE** is correct.

11. Which of these practices is best for reducing waste at home?

- (A) Burning garbage
- (B) Using plastic bags
- (C) Reusing and recycling items
- (D) Throwing all waste in one bin

12. A scientist places a few drops of perfume in one corner of a room. Soon, the scent spreads. Which property of matter does this show?



- (A) Liquids fill all available space.
- (B) Solids have fixed shape.
- (C) Gases fill all available space.
- (D) Solids cannot be compressed.

13. Match **Column - I** with **Column - II** and select the correct answer using the codes given below.

Column - I	Column - II
P. Recycle	1. Making new items from old ones
Q. Natural resource	2. Water
R. Global warming	3. Caused by excess CO ₂
S. Rainwater harvesting	4. Collecting rain for reuse

Code :

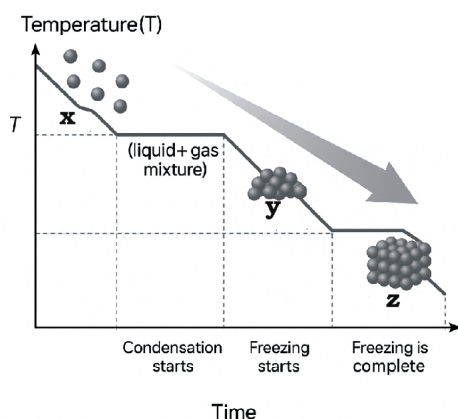
	P	Q	R	S
(A)	1	2	3	4
(B)	4	3	2	1
(C)	3	1	4	2
(D)	2	1	4	3

Space for rough work

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14. Identify X, Y and Z from the graph



- (A) X = Gas; Y = Solid; Z = Liquid
- (B) X = Liquid; Y = Solid; Z = Gas
- (C) X = Solid; Y = Liquid; Z = Gas
- (D) X = Gas; Y = Liquid; Z = Solid

15. Why is it important to protect the ozone layer?

- (A) It prevents the earth from overheating by reflecting sunlight.
- (B) It blocks harmful ultraviolet rays from the Sun.
- (C) It causes acid rain.
- (D) It controls earthquakes.

16. **Assertion (A)** : Water changes into ice when it is cooled to its freezing point.

Reason (R) : Cooling provides heat energy and changes a liquid into a solid.

- (A) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).
- (B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).
- (C) Assertion (A) is true and Reason (R) is false.
- (D) Assertion (A) is false and Reason (R) is true.

Paragraph for Questions 17 & 18

Water is a unique substance. It can exist in all three states of matter-solid, liquid, and gas. When water is frozen, it becomes ice, a solid that has a fixed shape. When ice melts, it turns into water, which flows and takes the shape of any container. On heating, water changes into steam, a gas that spreads in all directions. These changes happen due to heating or cooling.

17. What happens to water particles when water is heated?

- (A) They freeze
- (B) They move slower
- (C) They stop moving
- (D) They move faster

Space for rough work

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18. What does the ability of water to exist in all three states tell us about its properties?

- (A) It can only be found in cold regions.
- (B) It does not follow the rules of matter.
- (C) It responds to temperature changes in a predictable way.
- (D) It is not affected by heating or cooling.

19. **Assertion (A)** : The use of chemical fertilizers improves long-term soil health.

Reason (R) : They can disrupt the natural balance of the soil ecosystem.

- (A) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).
- (B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).
- (C) Assertion (A) is true and Reason (R) is false.
- (D) Assertion (A) is false and Reason (R) is true.

Sequence Based

20. Stages of decomposition of a dead plant are :

- P.** Nutrients are released into the soil
- Q.** Fungi and bacteria break down the organic matter
- R.** Dead plant falls to the ground
- S.** Decomposers feed on the dead material

Which list shows the stages in the correct order?

- (A) R, S, Q, P
- (B) P, R, Q, S
- (C) R, P, Q, S
- (D) P, Q, S, R

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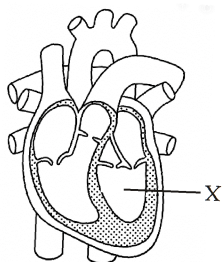
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PART III : BIOLOGY

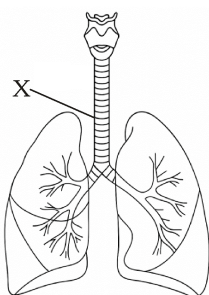
This section contains **10 Single Choice Questions (Q : 21 to Q : 30)**. Each question has four choices **(A), (B), (C) and (D)** out of which **ONLY ONE** is correct.

21. Name the part which has been indicated by letter X in the following figure.



- (A) Left auricle
- (B) Left ventricle
- (C) Right auricle
- (D) Right ventricle

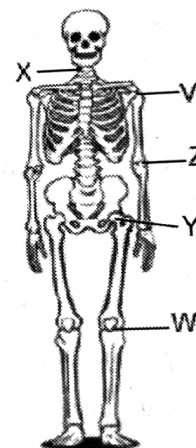
22. The organ X shown in the figure given below carries air from buccal cavity to lungs. Name the part X.



- (A) Rib cage
- (B) Food pipe
- (C) Trachea
- (D) Diaphragm

23. Match **Column - I** with **Column - II** and select the correct answer using the codes given below.

Refer to the given figure.



Column - I	Column - II
P. X	1. Ball and socket type joint
Q. Z and W	2. Hinge joint
R. V	3. Dissimilar type of joints
S. V and W	4. Pivot joint

Code :

	P	Q	R	S
(A)	1	2	3	4
(B)	4	3	2	1
(C)	3	1	4	2
(D)	4	2	1	3

Space for rough work

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24. Which of these do not have a regular cell structure?

- (A) Bacteria
- (B) Viruses
- (C) Algae
- (D) Fungi

25. Which of the following diseases is not caused by bacteria?

- (A) Tuberculosis
- (B) Typhoid
- (C) Cholera
- (D) Anaemia

26. **Assertion (A)** : The excretory system removes carbon dioxide from the body.

Reason (R) : The lungs, not the kidneys, help remove carbon dioxide.

- (A) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).
- (B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).
- (C) Assertion (A) is true and Reason (R) is false.
- (D) Assertion (A) is false and Reason (R) is true.

Paragraph for Questions 27 & 28

Microorganisms are tiny living things that are so small that we cannot see them with our eyes. They live all around us - in water, air, soil, and even inside our bodies. Some microorganisms help us in many ways, while others can cause diseases. Scientists use special tools like microscopes to observe them and study their shapes and behaviour.

27. Microorganisms can be best described as:

- (A) Always harmful to humans.
- (B) Visible to the naked eye.
- (C) Useful and harmful tiny living things.
- (D) Only found in dirty places.

28. Why do scientists study microorganisms under a microscope?

- (A) Because they are dangerous.
- (B) Because they are invisible to the eye.
- (C) Because they are very noisy.
- (D) Because they are colorful.

Space for rough work

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29. Assertion (A) : Yeast is used in baking because it helps make the dough rise.

Reason (R) : Yeast produces gas when it eats sugar, which causes the dough to become fluffy.

- (A) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).
- (B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).
- (C) Assertion (A) is true and Reason (R) is false.
- (D) Assertion (A) is false and Reason (R) is true.

Sequence Based

30. Which sequence correctly describes how the brain sends signals to the body?

- (A) Brain → Muscles → Nerves → Spinal Cord
- (B) Brain → Nerves → Spinal Cord → Muscles
- (C) Brain → Spinal Cord → Nerves → Muscles
- (D) Muscles → Brain → Spinal Cord → Nerves

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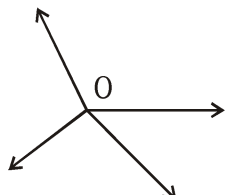
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PART IV : MATHEMATICS

This section contains **20 Single Choice Questions (Q : 31 to Q : 50)**. Each question has four choices **(A), (B), (C) and (D)** out of which **ONLY ONE** is correct.

- 31.** How many number of angles are formed in the given figure ?



- (A) 4
(B) 12
(C) 8
(D) 13

Sequence Based

- 32.** Arrange steps to identify rays in real life situations :-

- P.** Look for objects starting at a point and going in one direction.
Q. Observe examples like torchlight, sunrays.
R. Understand the concept of a ray.
S. Match the real-life examples to the definition.

Which list shows the steps in the correct order?

- (A) P, R, Q, S
(B) Q, S, P, R
(C) R, S, P, Q
(D) R, P, Q, S

- 33.** The sum of the predecessor and successor of the greatest 2-digit number is ?

- (A) 199
(B) 198
(C) 197
(D) 201

- 34. Assertion (A) :** Volume of a cuboid is calculated by multiplying all its edges.

Reason (R) : A cuboid has three different dimensions length, breadth and height.

- (A) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).
(B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).
(C) Assertion (A) is true and Reason (R) is false.
(D) Assertion (A) is false and Reason (R) is true.

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Space for rough work

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35. If 'L' denotes \times , M denotes \div , 'N' denotes $-$ and Q denotes $+$, then find the value of

$$85 \text{ M } 17 \text{ L } 4 \text{ Q } 18 \text{ N } 5$$

- (A) 25
- (B) 28
- (C) 30
- (D) 33

36. Which of the following statement/s is/ are **True(T)** or **False(F)** ?

- (i) The LCM of two even numbers is their product.
- (ii) The LCM of two numbers is always greater than either of the numbers.
- (iii) The LCM of two prime numbers is always their product.
- (iv) If one of the two numbers is a factor of the other then their LCM is always equal to the factor

Code :

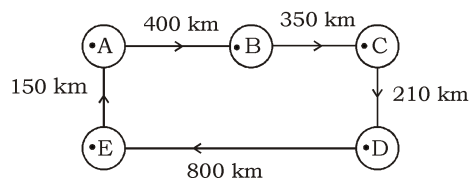
- | | (i) | (ii) | (iii) | (iv) |
|-----|-----|------|-------|------|
| (A) | F | F | T | F |
| (B) | T | F | T | T |
| (C) | T | T | F | T |
| (D) | T | F | T | F |

37. What is the LCM of two consecutive odd number ?

- (A) Their product
- (B) Their sum
- (C) Their difference
- (D) 1

Paragraph for Questions 38 & 39

A bus started its journey and reached different places with a speed of 50 km/hour. The journey is shown below :-



38. The total distance covered by the bus, if it starts from A and returns back to A is :

- (A) 1900 km
- (B) 1760 km
- (C) 950 km
- (D) 1910 km

39. The time taken by the bus to reach B

from A where $\frac{\text{distance}}{\text{speed}} = \text{time}$

- (A) 4 hrs
- (B) 8 hrs
- (C) 7 hrs
- (D) 3 hrs

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Space for rough work

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40. Match **Column – I** with **Column – II** and select the correct answer using the codes given below.

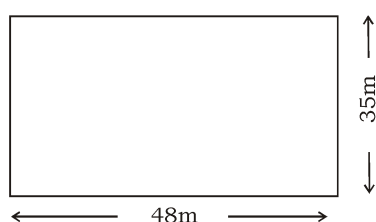
Column – I	Column – II
------------	-------------

- | | |
|--------------------------|---|
| P. Right angle | 1. Between $1/4$ and $1/2$ of a revolution |
| Q. Acute angle | 2. Less than one-fourth revolution |
| R. Obtuse angle | 3. One-fourth of a revolution |
| S. Complete angle | 4. Four right angle |

Code :

- | | P | Q | R | S |
|-----|----------|----------|----------|----------|
| (A) | 3 | 2 | 1 | 4 |
| (B) | 4 | 3 | 2 | 1 |
| (C) | 3 | 1 | 4 | 2 |
| (D) | 2 | 1 | 4 | 3 |

41. The length of the given rectangular field is decreased by 6m. Find its new width, if the area remains unchanged.



- (A) 46 m
(B) 42 m
(C) 40 m
(D) None of these

Sequence Based

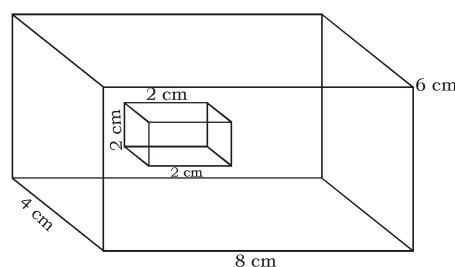
42. Arrange the following numbers in order from least to greatest LCM Tabs Given (Numbers) :

- P.** 4 and 6
Q. 5 and 10
R. 3 and 9
S. 2 and 8

Which list shows the steps in the correct order?

- (A) Q, P, R, S
(B) S, R, Q, P
(C) Q, R, P, S
(D) Q, R, S, P

43. How many 2 cm cubes would fit inside the larger cuboid ?



- (A) 20
(B) 24
(C) 18
(D) 30

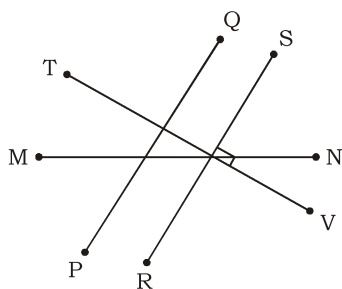
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44. Assertion (A) : If the cost of one glass tumbler Rs. 25, 4 such glasses cost Rs. 100.

Reason (R) : Cost is calculated by multiplying price per item by number of items.

- (A) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).
 (B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).
 (C) Assertion (A) is true and Reason (R) is false.
 (D) Assertion (A) is false and Reason (R) is true.

45. Rashi drew the line segments shown here. Which of the following appear to be perpendicular ?



- (A) \overline{PQ} and \overline{MN}
 (B) \overline{RS} and \overline{TV}
 (C) \overline{MN} and \overline{TV}
 (D) None of these

46. Which of the following statement/s is/ are **True(T)** or **False(F)** ?

- (i) The perimeter of square whose area is 25 cm^2 is 20 cm.
 (ii) If the side of a square is doubled the perimeter of the square is halved.
 (iii) The breadth of a rectangle of area 24 cm^2 and length 8 cm is 6 cm.
 (iv) If we need to find the cost a levelling a square play ground, we need to find its perimeter.

Code :

- (i) (ii) (iii) (iv)
 (A) T F T F
 (B) T F F F
 (C) T T F T
 (D) F T T F

47. A number leaves a remainder of 1 when divided by 2, 3 and 4. What is the smallest such number ?

- (A) 12
 (B) 16
 (C) 13
 (D) 15

Space for rough work

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Paragraph for Questions 48 & 49

Two plots of land have same perimeter. One is a square of side 40 m while the other is a rectangle whose breadth is 15 m.

48. What is the length of a rectangular plot?

- (A) 65 cm
- (B) 160 cm
- (C) 165 cm
- (D) 65 m

49. What is the area of the square plot ?

- (A) 160 m²
- (B) 1600 m²
- (C) 1650 m²
- (D) 1720 m²

50. Match **Column - I** with **Column - II** and select the correct answer using the codes given below.

Column - I	Column - II
P. 1 cubic centimeter (cm ³)	1. 1000 cm ³
Q. Volume of a cube of side 3 cm	2. 10000 mL
R. 10 litres	3. 27 cm ³
S. 1 cubic decimeter (dm ³)	4. Volume of a cube of side 1cm.

Code :

	P	Q	R	S
(A)	1	2	3	4
(B)	4	3	2	1
(C)	3	1	4	2
(D)	2	1	4	3

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Space for rough work

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PART V : LOGICAL REASONING & IQ

This section contains **10 Single Choice Questions (Q : 51 to Q : 60)**. Each question has four choices **(A), (B), (C) and (D)** out of which **ONLY ONE** is correct.

Direction (51 - 52) : What should come in place of the question mark '?' in the following series ?

51. 14, 16, 19, 23, 28, ?

- (A) 34
- (B) 30
- (C) 31
- (D) 33

52. Z, W, T, Q, ?, ?

- (A) N, K
- (B) Q, L
- (C) O, P
- (D) P, Q

53. In alphabet series, some alphabets are missing which are give in that order as one of the alternative below it. Choose the correct alternative :

_ _ aba _ _ ba _ ab

- (A) abbba
- (B) bbaba
- (C) baabb
- (D) abbab

54. Janki started from her house and walked 2 km towards North. Then she took a right turn and covered 1 km. Then she took again a right and walked for 2 km. In which direction is she facing now?

- (A) North
- (B) East
- (C) South
- (D) West

55. Find the mirror-image of the given letters (AB is a mirror) :

INFORMATIONS



- (A) INFOIRMALIONS
- (B) INFOIRMATIONS
- (C) 2NOITAMRIONS
- (D) 2NOITAMRION

56. Rakesh is on 9th position from upwards and 38th position from downwards in a class. How many students are in the class ?

- (A) 47
- (B) 45
- (C) 46
- (D) 48

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Space for rough work

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57. In a line of boys, there are 45 boys. Ranjan is 15th from the right side. What is the position of Ranjan from the left side ?

- (A) 30th
- (B) 29th
- (C) 32nd
- (D) 31st

58. Select the correct combination of mathematical signs to sequentially replace the (*) signs and balance the given equation :

$$17 * 6 * 3 * 7 * 55 * 82$$

- (A) ×, ÷, -, +, =
- (B) -, ÷, +, ×, =
- (C) ÷, +, -, ×, =
- (D) -, +, ÷, ×, =

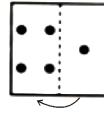
59. Determine the value of given expression (Using BODMAS) :

$$24 \div (6 - 2) + 5 \times 10 - 2$$

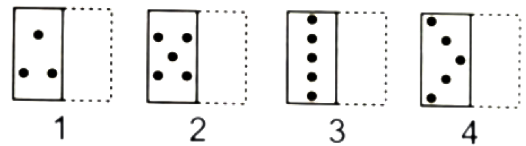
- (A) 54
- (B) 46
- (C) 50
- (D) 58

60. Figure out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.

Transparent Sheet



Response Figures



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

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