

**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. Which of the following is the best example of mechanical energy?

- (A) Light from a torch
- (B) Heat from a stove
- (C) Movement of a car
- (D) Sound from a bell

2. A falling apple from a tree is an example of:

- (A) Kinetic energy only
- (B) Potential energy changing into kinetic energy
- (C) Mechanical to chemical energy
- (D) Sound energy

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

Column - I	Column - II
<b>Action</b>	<b>Effect</b>
<b>P.</b> Squeezing a sponge	<b>1.</b> Change in shape
<b>Q.</b> Kicking a ball	<b>2.</b> Change in direction
<b>R.</b> Turning a steering wheel	<b>3.</b> Change in motion
<b>S.</b> Throwing a ball upward	<b>4.</b> Change in speed

**Code :**

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

4. A boy pushes a box, but it doesn't move. What could be the most possible reason?

- (A) There is no gravity acting
- (B) The box is too light
- (C) Friction and weight are more than the boy's force
- (D) The boy is pulling instead of pushing

5. What happens if two forces of equal strength act in opposite directions on an object?

- (A) The object moves faster
- (B) The object moves in one direction
- (C) The object remains still
- (D) The object disappears

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**6. Assertion (A) :** A rolling car loses some of its energy due to friction.

**Reason (R) :** Friction converts some mechanical energy into heat.

- (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**

Aman was helping his mother in the garden. He pulled the hose to water the plants and later pushed a wheelbarrow full of soil. While watering, he noticed that when he pulled the hose too quickly, it jerked. He also found it harder to push the wheelbarrow uphill.

- 7.** What type of force did Aman use to move the hose and the wheelbarrow?
- (A) Gravitational and magnetic
  - (B) Contact - Pulling and Pushing
  - (C) Friction and magnetic
  - (D) Only gravitational

**8.** Why did the wheelbarrow become harder to push uphill?

- (A) Because gravity helps on slopes
- (B) Because magnetic force increases
- (C) Because it required more muscular force
- (D) Because the wheelbarrow was electric

**9. Assertion (A) :** Pushing an object applies force on it.

**Reason (R) :** Force is only applied when we pull something.

- (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.** Sequence of actions in using a pulley:
- (A) Load rises → Rope pulled → Pulley rotates
  - (B) Pulley rotates → Load rises → Rope is tied
  - (C) Rope pulled → Pulley rotates → Load rises
  - (D) Pulley fixed → Load tied → Rope falls

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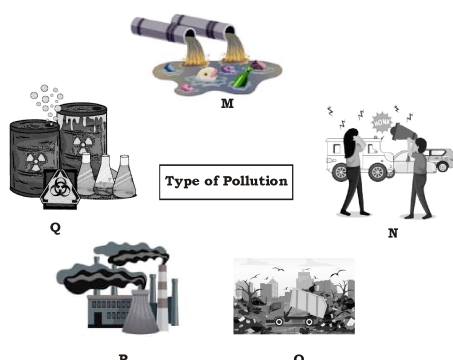
**PART II : CHEMISTRY**

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.** Matter is anything that has:

- (A) Weight and smell
- (B) Taste and smell
- (C) Mass and occupies space
- (D) Shape and energy

**12.** Name the **M, N, O, P** and **Q** from the image.



- (A) M = Oil pollution; N = Noise pollution; O = Land/Soil pollution; P = Radioactive Pollution; Q = Air pollution
- (B) M = Air pollution; N = Water pollution; O = Land/Soil pollution; P = light Pollution; Q = Radioactive pollution
- (C) M = Water pollution; N = Noise pollution; O = Radioactive pollution; P = Air Pollution; Q = Land/Soil pollution
- (D) M = Water pollution; N = Noise pollution; O = Land/Soil pollution; P = Air Pollution; Q = Radioactive pollution

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

Column - I	Column - II
<b>P.</b> Playing loud music on speakers near hospitals	<b>1.</b> Recycle
<b>Q.</b> Using the same gift bag multiple times	<b>2.</b> Reuse
<b>R.</b> Melting old plastic bottles to make toys	<b>3.</b> Noise pollution
<b>S.</b> Dumping chemical wastes into rivers	<b>4.</b> Water pollution

**Code :**

	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>
(A)	1	2	3	4
(B)	4	3	2	1
(C)	3	2	1	4
(D)	2	1	4	3

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14. Which of the following best describes a balanced ecosystem?
- (A) Only plants grow  
 (B) Only animals survive  
 (C) Equal number of herbivores and carnivores  
 (D) All living and non-living things interact and depend on each other
15. Identify the CORRECT matching of physical state and property:
- (A) Solid – flows easily and takes container’s shape  
 (B) Liquid – has fixed shape and volume  
 (C) Gas – easily compressible and no fixed volume  
 (D) Solid – particles far apart and move freely
16. **Assertion (A)** : Gases are highly compressible.  
**Reason (R)** : Intermolecular forces in gases are very strong.
- (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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**Paragraph for Questions 17 & 18**

When we light a candle, the wax near the flame melts, turning from solid to liquid. As the wax continues to burn, some of it vaporizes and forms gases that support the flame. In this simple activity, all three states of matter are present — solid wax, liquid melted wax, and gases produced during burning. Burning of the candle is a physical and chemical change involving change in states.

17. What makes this candle example useful for understanding states of matter?
- (A) It only involves solids.  
 (B) It involves conversion of states.  
 (C) It only shows evaporation.  
 (D) It shows ir-reversible changes only.
18. What change takes place in the wax at the bottom of candle?
- (A) It changes from gas to liquid.  
 (B) It changes from liquid to solid.  
 (C) It changes from gas to solid.  
 (D) It changes from liquid to gas.

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**19. Assertion (A) :**



**Reason (R) :** A food chain is a linear sequence of organisms through which energy and nutrients pass as one organism eats another.

- (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.** Which of the following is the correct sequence for decomposition of biodegradable waste?

- P.** Bacteria and Fungi release Enzymes
- Q.** Formation of humus
- R.** Breakdown of complex substances
- S.** Release of nutrients into the soil

Which list shows the steps in the correct order?

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

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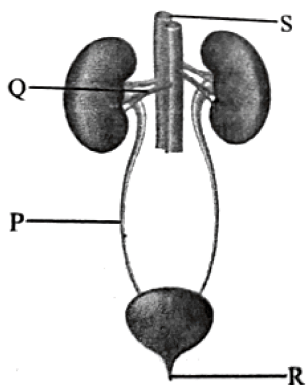
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**PART III : BIOLOGY**

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.** Which letter represents ureter in the figure given below?



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

**22.** The device used to hear the heart-beat is:

- (A) Microscope
- (B) Telescope
- (C) Sphygmomanometer
- (D) Stethoscope

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

<b>Column - I</b> <b>(Microorganism /Process)</b>	<b>Column - II</b> <b>(Use / Product Formed)</b>
<b>P.</b> Lactobacillus	<b>1.</b> Nitrification
<b>Q.</b> Nitrosomonas	<b>2.</b> Helps in making curd
<b>R.</b> Rhizopus	<b>3.</b> Conversion of sugar to alcohol
<b>S.</b> Fermentation	<b>4.</b> Spoilage of bread

**Code :**

	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>
(A)	2	1	3	4
(B)	4	3	2	1
(C)	3	1	4	2
(D)	2	1	4	3

**24.** Which microorganism is used in the preparation of idli and dhokla to make them soft and fluffy?



**Idli**



**Dhokla**

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- (A) Lactobacillus
- (B) Penicillium
- (C) Yeast
- (D) Rhizopus

**25.** What is the main role of *Lactobacillus* in the food industry?

- (A) Causes food poisoning
- (B) Makes alcohol
- (C) Helps in curd formation
- (D) Spoils bread

**26. Assertion (A) :** Correct posture helps prevent back and neck pain.

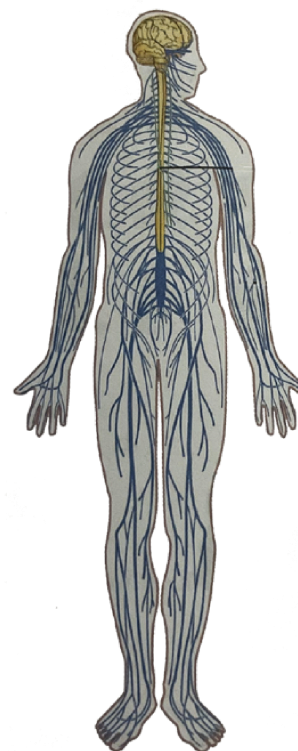
**Reason (R) :** A straight posture reduces strain on muscles and bones.



- (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**

The nervous system helps different parts of the body work together. It allows us to sense things around us and decide how to respond. It also stores information and helps us learn new things. It sends and receives signals quickly so that we can act almost immediately. The system includes a central part located in the head and a long structure that runs down the back, along with many tiny pathways spread throughout the body.



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27. What is the main function of the nervous system?

- (A) Pump blood
- (B) Help digestion
- (C) Control body activities and responses
- (D) Break down food

28. What part of the nervous system runs down the back?

- (A) Rib cage
- (B) Skull
- (C) Spinal cord
- (D) Windpipe

29. **Assertion (A)** : Pasteurization of milk kills harmful microorganisms.

**Reason (R)** : In pasteurization, milk is boiled at very high temperature for 10 minutes.

- (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 is the correct process of how pickles are preserved using microorganisms?

- (A) Add oil and salt → Heat → Add yeast → Refrigerate
- (B) Add vinegar/salt → Mix with spices → Store in airtight jar → Keep in sun
- (C) Boil the pickles → Mix with sugar → Keep open
- (D) Add lemon → Add sugar → Freeze it

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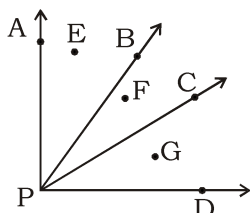
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**PART IV : MATHEMATICS**

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.** Name a point which is both in the exterior of  $\angle APB$  and  $\angle APC$



- (A) E, F
- (B) E, G
- (C) G
- (D) F

**Sequence Based**

**32.** A plank is 1325 cm long. A worker needs to check whether it falls within the range of 12 m to 14 m. Help him determine if it falls in that range by arranging the steps correctly.

- P.** Compare if 13 m 25 cm lies between 12 m and 14 m
  - Q.** Yes it lies in the given range
  - R.** Convert 1325 cm into metres and centimeters.
  - S.** Divide  $1325 \div 100 \rightarrow 13 \text{ m and } 25 \text{ cm}$
- Which list shows the steps in the correct order?
- (A) R, S, P, Q
  - (B) R, Q, S, P
  - (C) R, P, S, Q
  - (D) Q, R, P, S

**33.** The product of the place values of two 5's in 75352 is :

- (A) 2500
- (B) 25
- (C) 25000
- (D) 250000

**34. Assertion (A) :** The number 45836 is divisible by 7.

**Reason (R) :** If the sum of the digits is divisible by 7, then the number is divisible by 7.

- (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.

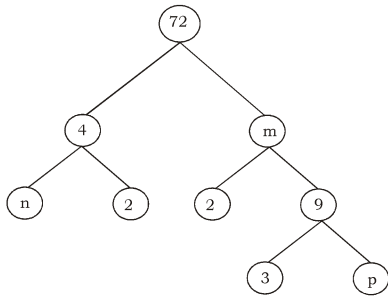
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35. Factor tree of 72 is shown here. Find

the value of  $\frac{m}{p.n}$  ?



- (A) 4
- (B) 6
- (C) 2
- (D) 3

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

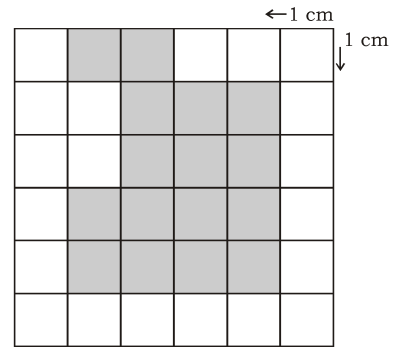
Rohan bought 3 pens for Rs 15 each and 2 pencils for Rs 10 each. He paid with a Rs 100 note. Read and answer the following statements-

- (i) The total cost of pen is Rs 45
- (ii) The total cost of pencil is Rs 25
- (iii) He spent Rs 80 in total
- (iv) He should get Rs 30 back as change

**Code :**

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

37. Find the perimeter of the shaded region in the given figure



- (A) 15 cm
- (B) 20 cm
- (C) 24 cm
- (D) 26 cm

**Paragraph for Questions 38 & 39**

We know that June 5, is celebrated every year as 'world environment day' as a part of its celebration. Arun and two of his friends decided to have a cycling race to promote environment friendly transport they started at 12 noon and took 3 minutes 20 sec, 3 minutes 40 sec and 4 minutes respectively to cycle on a circular track to cycle complete a circle.

Based on the above information answer the following questions by selecting the correct options.

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38. The LCM of 3 minutes 20 sec, 3 minutes 40 sec and 4 minutes is :

- (A) 240 minutes
- (B) 220 minutes
- (C) 480 minutes
- (D) 260 minutes

39. Number of cycles completed by Arun (first) in 220 minutes is :

- (A) 66
- (B) 60
- (C) 11
- (D) 70

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

Column - I	Column - II
<b>P.</b> $5\text{m}^3$	<b>1.</b> $1000\text{ cm}^3$
<b>Q.</b> 1 litre	<b>2.</b> 10000 L
<b>R.</b> 1 kilolitre	<b>3.</b> 5000 litres
<b>S.</b> $10\text{ m}^3$	<b>4.</b> $1000000\text{ cm}^3$

**Code :**

	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>
(A)	1	2	3	4
(B)	4	3	2	1
(C)	3	1	4	2
(D)	4	1	3	2

41. A boat is sailing N-E. A little later it is formed sailing south. Through what angle has it turned ?

- (A)  $150^\circ$
- (B)  $180^\circ$
- (C)  $135^\circ$
- (D)  $90^\circ$

**Sequence Based**

42. LCM of two numbers are 1488. The number are in ratio 3:4 all the steps needed to the ratio arrange numbers.

**P.**  $12x = 1488$

**Q.** LCM of  $3x$  and  $4x = 3 \times 4 \times x = 12x$

**R.** The numbers are 372 and 496.

**S.**  $3x = 3 \times 124$ ,  $4x = 4 \times 124 = 496$

Which list shows the steps in the correct order?

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

43. A cuboidal container of  $1\text{m}^3$  is filled using small cubes of 10 cm. side. How many such cubes are needed ?

- (A) 10000 cubes
- (B) 100000 cubes
- (C) 1000 cubes
- (D) 100 cubes

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**44. Assertion (A) :** If A, B, C are 3 collinear points, and  $AB + BC \neq AC$ , then 'B' lies between A and C.

**Reason (R) :** The measure of line segment AB is represented by  $\overline{AB}$ .

- (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.** Rina had Rs 500. She bought 3 pens at Rs 25 each, a book for Rs 230 and 2 pencils for Rs 15 each. How much money left with her

- (A) Rs 165
- (B) Rs 140
- (C) Rs 170
- (D) Rs 135

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

- (i) A water bottle with 2 litre capacity holds 2000 ml.
- (ii) The volume of a cube with side 6 is  $243 \text{ cm}^3$
- (iii) A matchbox is an example of sphere.
- (iv) If length, breadth or height is zero volume becomes zero

**Code :**

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

**47.** The area of rectangle is  $72 \text{ cm}^2$  and its length is 9 cm. Find the breadth.

- (A) 9 cm
- (B) 8 cm
- (C) 10 cm
- (D)  $8 \text{ cm}^2$

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**Paragraph for Questions 48 & 49**

It was Art. Day at Arya's school she drew a clock showing 9:00, where the hands made a right angle. Next she sketched a kite and marked its intersecting lines (the sticks). Her teacher asked her to find how many angles were formed at the point where the sticks crossed. Later, Arya made a hill road drawing using two slanting lines meeting at a point, forming an acute angle.

**48.** In the kite, the two sticks cross each other. What type of lines are they ?

- (A) Parallel
- (B) Perpendicular
- (C) Intersecting
- (D) Curved

**49.** What type of angle is formed by two slanting lines that meet to form a hill shape ?

- (A) Obtuse angle
- (B) Reflex angle
- (C) Acute angle
- (D) Right angle

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

Column - I	Column - II
<b>P.</b> Right angle	<b>1.</b> $180^\circ < \text{angle} < 360^\circ$
<b>Q.</b> Acute angle	<b>2.</b> $90^\circ$
<b>R.</b> Obtuse angle	<b>3.</b> $90^\circ < \text{angle} < 180^\circ$
<b>S.</b> Reflex angle	<b>4.</b> $0^\circ < \text{angle} < 90^\circ$

**Code :**

	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>
(A)	1	2	3	4
(B)	4	3	2	1
(C)	3	1	4	2
(D)	2	4	3	1

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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 questions mark ‘?’ in the following series ?**

**51.** 3, 17, 45, 87, ?, 213

- (A) 133
- (B) 143
- (C) 153
- (D) 152

**52.** A, G, L, P, S, ?

- (A) U
- (B) W
- (C) X
- (D) Y

**53.** A man walks 5 km towards South and then turns to the right. After walking 3 km, he turns right and walks 5 km. Now how far is he from the starting point ?

- (A) 7 km
- (B) 3 km
- (C) 5 km
- (D) 4 km

**54.** A man started walking West. He turned right, then right again and finally turned left. Towards which direction was he walking now ?

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

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



- (A) EFFECTIVE
- (B) EVITCFEEF
- (C) EVITCFEFE
- (D) EFFECTIVE

**56.** Roshan ranked 11<sup>th</sup> place from the top and 31<sup>st</sup> place from the bottom in a class. How many students are there in the class ?

- (A) 42
- (B) 43
- (C) 41
- (D) 40

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57. In a row boys, Suresh is 7<sup>th</sup> from the left and Rohit is 12<sup>th</sup> from the right. If they interchange their positions, Suresh becomes 22<sup>nd</sup> from the left. How many boys are there in a row ?

- (A) 19
- (B) 31
- (C) 33
- (D) Cannot be found

58. Which two signs should be interchanged to make the given equation correct ?

$$10 \div 5 - 4 \times 3 + 6 = 13$$

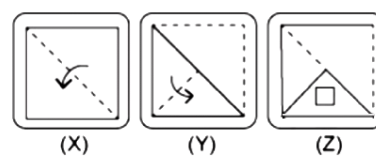
- (A) + and ÷
- (B) - and ×
- (C) ÷ and ×
- (D) + and -

59. From the given alternatives, select the combination of mathematical symbols, when put sequentially in the place of A, B, C, D and E in the following equation, will balance the equation.

$$(38 \text{ A } 17) \text{ B } 9 \text{ C } 117 \text{ D } 13 \text{ E } 94 = 104$$

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

60. In following question consists of a set of three figures X, Y and Z showing a sequence of folding of a piece of paper. Figure Z shows the manner in which the folded paper has been cut. Choose a figure which most closely resembles the unfolded form of figure Z from the four answer figures given below.



- (A)
- (B)
- (C)
- (D)

*Space for rough work*

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