MEGA ResoFAST 2025

Resonance Future Achievers Scholarship Test

TEST PAPER

Duration
1 Hour

Currently Studying in
Class - VI

Max. Marks
160

Important Instructions to the Students

1. The question paper contains a total of **40 Multiple Choice Questions**, numbered from **Q1 to Q40**.
2. **Pattern & Marking Scheme of each section:**

Parts	Subject	No. of questions	Questions Range	Marks
Part-A	Physics	07	Q1 to Q7	28 M
Part-B	Chemistry	07	Q8 to Q14	28 M
Part-C	Biology	07	Q15 to Q21	28 M
Part-D	Mathematics	14	Q22 to Q35	56 M
Part-E	Mental Ability	05	Q36 to Q40	20 M
	Total	**40**	**Q1 to Q40**	**160 M**

3. Attempt all questions, each having only one correct answer.
4. Each question carries **4 marks**.
5. Candidates must ensure that the **OMR Sheet is not folded or damaged** in any way. Avoid making any **stray marks** on the OMR sheet. **Do not** write your **Roll Number** anywhere except in the designated space provided in the OMR Sheet.
6. The use of **white correction fluid** is **strictly prohibited** on the OMR Sheet.
7. The use of **blank papers, clipboards, log tables, slide rules, calculators, mobile phones**, or **any other electronic gadgets** is **strictly not permitted** inside the examination hall.
8. There is an empty page left at the end of this question paper for **rough work.**

PART A – PHYSICS

1. The Great Water Cycle Fill-In!

Water is an essential resource for all living things on Earth. The main sources of water include (i) and (ii). When water from rivers and oceans heats up due to the sun, it goes through the process of (iii), turning into water vapour and rising into the air.

Choose the correct option that fills in the blanks (i), (ii), and (iii) and makes the paragraph meaningful.

(A) (i) - Surface water, (ii) - Groundwater, (iii) - Evaporation

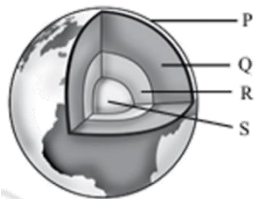
(B) (i) - Groundwater, (ii) - Surface water, (iii) - Transpiration,

(C) (i) - Rainwater, (ii) - Surface water, (iii) - Transpiration

(D) (i) - Surface water, (ii) - Rainwater, (iii) - Evaporation

2. The Earth's Core Conundrum

Refer to the given figure of the Earth. Identify points P to S and select the incorrect statement regarding them.



(A) P - Forms Ocean floor

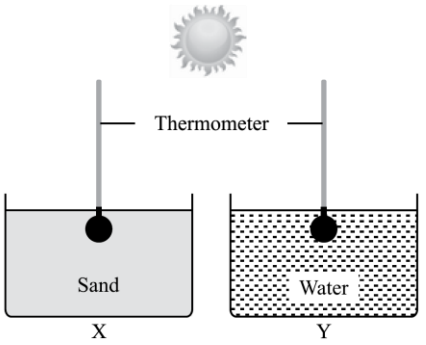
(B) Q - Rich in iron and magnesium

(C) R - Solid layer made of nickel-iron mixture

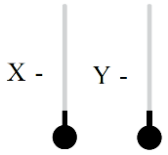
(D) S - Solid layer made up mainly of iron

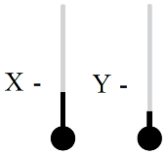
3. Which Thermometer Wins?

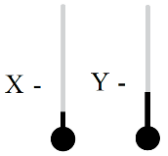
Sana set up an experiment as shown here.

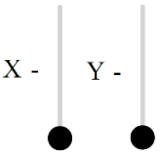


What will be the level of mercury in thermometers placed in beakers X and Y after 30 minutes?

(A) 

(B) 

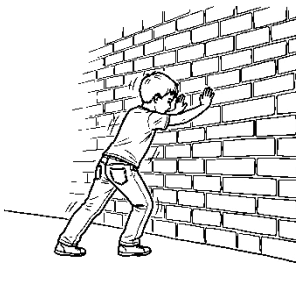
(C) 

(D) 

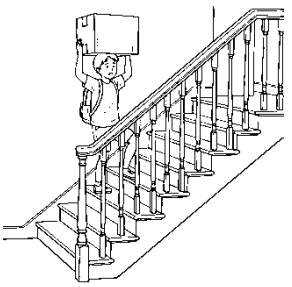
4. Who's Actually Doing Work?

In which of the following figures, work is done according to the scientific definition of work in physics?

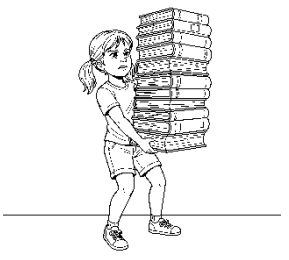
P (Porter standing on platform)



Q (Boy Pushing a Wall)



R (Boy Climbing the stairs)



S (Girl Lifting Books)

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

5. Who Sees Him Move More?

A boy travels a distance 20 m on a straight road on a trolley. Other boy lying down on the ground is watching his motion.

Statement I: The boy on the trolley covers 2000 cm distance with respect to the boy lying on the ground.

Statement II: The boy on the trolley covers 2000 cm distance with respect to himself.

Which of the following option is correct?

(A) Statement I is correct and Statement II is incorrect

(B) Statement I is incorrect and Statement II is correct

(C) Both statements I and II are correct

(D) Both statements I and II are incorrect

6. Shadow Secrets Exposed!

Consider the following statements.

(i) A shadow is formed on the same side of the object as the source of light.

(ii) The image formed by a pinhole camera is always erect.

(iii) We see stars because they reflect light from the sun.

(iv) The shadow of a pole is longest in the evening and shortest at the noon.

(v) Mirrors are good reflectors of light.

Choose the option with correct statement(s):

(A) (i), (ii) and (iii) only

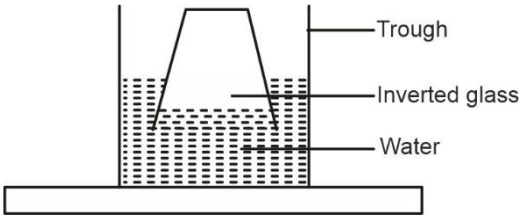
(B) (i), (ii) and (iv) only

(C) (iv) and (v) only

(D) (i), (ii), (iii) and (v) only

7. The Trapped Air Mystery!

Rohan held an inverted glass into a trough of water as shown in the given figure.



What conclusion can be drawn from this figure?

(A) Water has weight

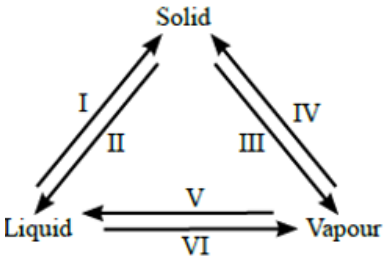
(B) Air does not dissolve in the water

(C) Air has weight

(D) The air present inside the glass occupies space

PART B – CHEMISTRY

8. The Shape-Shifting Matter Puzzle!

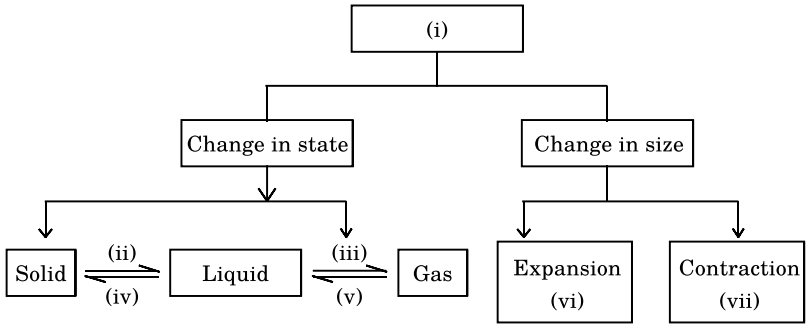


The given diagram shows the reversible changes that take place between different states of matter. Now, read the given passage and fill in the blanks by selecting an appropriate option. __P__ undergoes change III at room temperature. __Q__ Undergoes changes V and VI simultaneously at 373 K while __R__ can undergo change VI at room temperature. During change I, heat energy is __S__ while during change II, heat energy is __T__ .

	P	Q	R	S	T
(A)	Naphthalene	Water	Acetone	Evolved	Absorbed
(B)	Petrol	Camphor	Spirit	Evolved	Absorbed
(C)	Wet sponge	Water	Petrol	Absorbed	Evolved
(D)	Petrol	Dry ice	Kerosene	Evolved	Absorbed

9. State Changes: Truth or Trick?

Study the given flow chart and select the correct statement(s).



I. (i) refers to physical irreversible changes.

II. All the changes (ii) to (vii) are endothermic in nature.

III. (i) refers to chemical changes as changes in state and size are accompanied by gain or loss of heat.

IV. Changes (ii) and (iii) are endothermic in nature while changes (iv) and (v) are exothermic in nature.

(A) I only (B) IV only (C) I, II and III only (D) I, III and IV only

10. Air in Action: All or One?

Which of the following activities require(s) air?

(A)  (B)  (C)  (D) All of these

11. Aarav's Crystal Clue Quest!

While exploring a cave, Aarav finds shiny crystals inside large grey blocks. To move ahead safely, he must identify the key difference between minerals and rocks. What is the primary difference between them?

(A) Minerals are made of different substances; rocks are made of only one substance

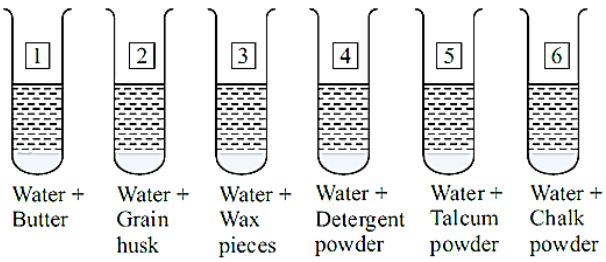
(B) Rocks are solid; minerals are liquid

(C) Minerals are naturally occurring inorganic compounds with a specific chemical composition and crystalline structure and rocks, on the other hand, are naturally occurring solid aggregates composed of one or more minerals or mineral-like substances.

(D) Minerals are made of metals; rocks are made of non-metals

12. The Six Test-Tube Challenge!

Study the given experimental set-up and select the correct observation.



(A) A homogeneous mixture will be formed in test tubes 4 and 5.

(B) A heterogeneous mixture will be formed in test tubes 2 and 3 and solute particles will settle at the bottom after some time if left undisturbed.

(C) Components in test tubes 5 and 1 are too small in size and hence cannot be separated by filtration.

(D) A heterogeneous mixture is formed in test tubes 1 and 2 and solute particles will float on the surface of water.

13. The Separation Table Trap!

Depending upon the nature of the constituents present in a mixture, Suhana suggested some methods of separation as shown in the table.

	Types of mixture	Methods of separation
1.	Solid - Solid	Handpicking, Sieving
2.	Solid - Liquid (insoluble)	Sedimentation - Decantation, Filtration
3.	Liquid - Liquid (immiscible)	Decantation, Separating funnel
4.	Solid - Liquid (soluble)	Filtration, Decantation
5.	Liquid - Liquid (miscible)	Distillation

Which of these is/are **incorrect** method(s) of separation?

(A) 1 and 2 only (B) 3 only (C) 1 and 5 only (D) 4 only

14. The Secret of Comfy Bedsheets

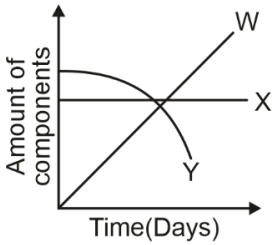
Riya notices bedsheets made of different fabrics and wonders why her mother prefers cotton in summer. To answer her mother's quiz, she must choose the correct reason for using cotton bedsheets and pillow covers.

(A) It is very shiny and looks elegant
(B) It is soft, breathable, and comfortable
(C) It is very durable and waterproof
(D) It is light and easy to clean

PART C – BIOLOGY

15. The Rotting Rubbish Graph Mystery!

A rubbish bin containing discarded food was carelessly left uncovered for five days. Various components during these days changed, which are plotted in the given graph.



Select the correct option regarding the components (W-Y).

(A) X can be non-biodegradable material.
(B) W can be the number of flies found at the rubbish bin.
(C) Y can be the amount of biodegradable material present in the rubbish bin.
(D) All of these

16. The Nutrient Detective Challenge!

Read the following.

S is a modified underground stem and is an energy giving food. **M** is a root that stores food and gets swollen. Nutrient present in **M** keeps eyes and skin healthy. **I** and **L** are edible seeds. Nutrient in **I** gets stored in the body and keeps the body warm, while nutrient in **L** helps in growth and repair of body. **E** is edible leaf, the nutrient of which helps in formation of blood and its deficiency affects blood clotting. Which of the following statements hold true regarding it?

(i) **S** could be potato and the deficiency of main nutrient present in it causes kwashiorkor.
(ii) **M** could be carrot which contains vitamin A.
(iii) **I** could be groundnut that majorly yields oil.
(iv) **L** could be rajma or gram which is rich in fat.
(v) **E** could be spinach with main nutrients iron and vitamin K.

(A) (i) and (ii) only
(B) (iii) and (iv) only
(C) (ii), (iii) and (v) only
(D) (i), (iii) and (v) only

17. Spot the Real Lifesaver Rule!

Read the given statements and select the option stating which ones are True (T) and which ones are False (F).

(i) For a minor burn, ice should not be applied directly on the skin; instead, the burn should be cooled under running water.

(ii) In case of a nosebleed, the person should lean forward slightly and pinch the soft part of the nose.

(iii) A fracture should not be moved; the injured area must be supported with a splint until medical help arrives.

(iv) Electric switches must never be touched with wet hands, as this increases the risk of electric shock.

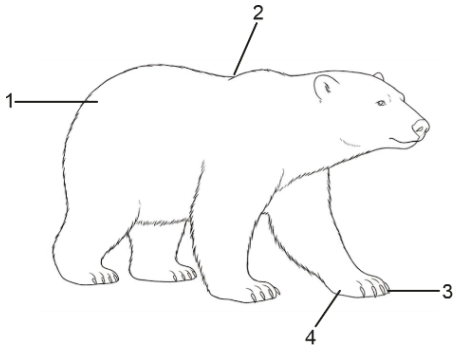
(v) During an electrical fire, sand or a suitable fire extinguisher should be used – not water.

(vi) If someone faints, their legs should be raised slightly to help blood flow back to the brain.

	(i)	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**
(A)	T	T	T	T	T	T
(B)	T	T	F	F	T	F
(C)	F	F	T	T	T	T
(D)	T	T	T	F	F	F

18. Match the Adaptation to the Beast!

A polar bear is shown here with some of its body parts labelled **1–4**. Some adaptations of the polar bear are given in the following list. **Select the correct match of the adaptation and the body part.**



a. Thick layer of fat provides insulation from extreme cold

b. Large paws help in walking on snow without sinking

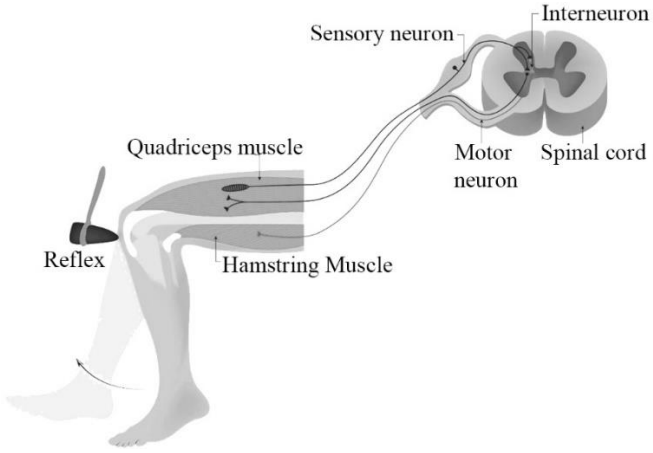
c. White fur helps in camouflage in snowy surroundings

d. Sharp claws help in catching and holding prey

(A) a-3, b-2, c-1, d-4
(B) a-3, b-4, c-1, d-2
(C) a-1, b-4, c-2, d-3
(D) a-4, b-1, c-3, d-2

19. The Knee-Jerk Mystery Path!

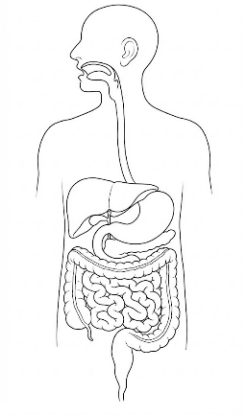
A doctor uses a small hammer to tap the knee of a patient, causing the lower leg to kick forward automatically. This rapid, involuntary action is an example of a reflex arc. Which statement correctly identifies the path of the nerve impulse for this action?



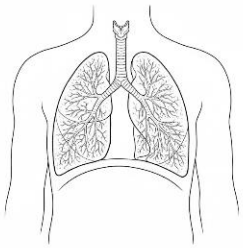
(A) Sensory Neuron → Brain → Motor Neuron → Muscle
(B) Stimulus → Sensory Neuron → Spinal Cord → Motor Neuron → Muscle
(C) Receptor → Motor Neuron → Spinal Cord → Muscle
(D) Motor Neuron → Spinal Cord → Brain → Sensory Neuron

20. The Organ-Function Match Game!

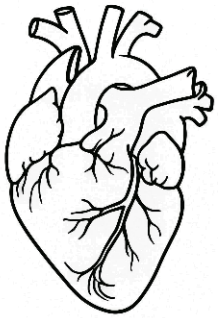
Directions: Study the four figures (A–D) showing different **organ systems**. Then match them with the correct **functions (1–4)**.



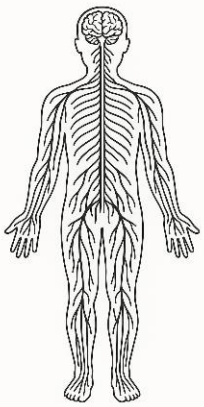
(a)



(b)



(c)



(d)

1. Controls and coordinates all activities of the body.

2. Breaks down food into simpler substances for absorption.

3. Transports oxygen, nutrients, and wastes through the body.

4. Enables exchange of gases between body and environment.

Which option correctly matches the figures with their functions?

(A) a–2, b–4, c–3, d–1(B) a–3, b–1, c–4, d–2 (C) a–4, b–2, c–1, d–3 (D) a–1, b–3, c–2, d–4

21. The Great Plant-Part Match-Up!

Match each item of column I with columns II and III and select the correct option.

	List-I		**List-II**		**List-III**
P	Spine	**a**	Attached to the thalamus	**1**	Protection for bud
Q	Tendril in pea	**b**	Modified leaf	**2**	Reticulate venation
R	Scale leaf	**c**	Onion	**3**	Modified for defence
S	Sepal	**d**	Modified root	**4**	Modified for support
T	Tap root	**e**	Carrot	**5**	Modified to store food

	P	**Q**	**R**	**S**	**T**
(A)	b, 3	b, 4	b, 5	a, 5	e,2
(B)	a, 1	d, 3	c, 5	a, 1	e,2
(C)	b, 3	c, 1	d, 5	a, 2	e,2
(D)	b, 3	b, 4	c, 5	a, 1	e,5

PART D – MATHEMATICS

22. Light Maze: Triple-Split Challenge

At a science fair in Hyderabad, a student creates a model called a "Light Maze." She replaces mirrors with specially designed beam-splitting prisms. Each prism in her model is constructed to divide an incoming laser beam into 3 separate beams. She begins with 1 laser beam, and after passing through each prism, every beam again splits into 3 beams. If the light passes through 4 prisms in sequence, how many beams emerge at the end of the maze?

(A) 27 (B) 81 (C) 108 (D) 243

23. Defective Sheet, Missing Tiles!

A craft shop in Shilparamam sells special "Hyderabadi Mosaic Sheets." Each sheet is a rectangle made by arranging **23 identical tiles in each row** and **17 such rows**. However, due to a printing glitch, the shopkeeper removed **one full row** and **five tiles from another row** before packaging the sheet. What is the **exact number of tiles** left in the package?

(A) 346 (B) 371 (C) 363 (D) 384

24. Rescue the Remaining Biscuits!

A baker in Attapur prepares rectangular biscuit trays. Each tray holds **27 biscuits in each row** and has **14 rows**. Before packaging, a helper mistakenly eats **16 biscuits**, all from random spots across the tray. How many biscuits remain on the tray?

(A) 362 (B) 378 (C) 350 (D) 382

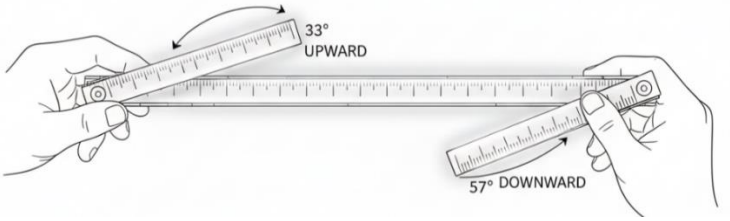
25. Track the Robot's Final Turn!

A delivery robot in Gachibowli moves in straight paths but turns at checkpoints. From Checkpoint A, it turns **left by 70°**, then **right by 40°**, then **left by 20°**, and finally **right by 30°** to reach Checkpoint B All turns are measured from the robot's *current facing direction*. What is the **net turning angle** from its original direction?

(A) 20° left (B) 20° right (C) 30° left (D) 30° right

26. Carpenter's Ruler Challenge!

A carpenter uses a special folding ruler with glowing joints. When fully straight, it forms a 180° line. He folds one segment by **33°** upward and another segment by **57°** downward.

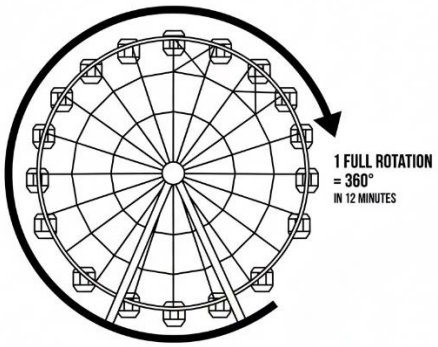


What is the **angle between the two folded segments**? *(Assume the original straight line as reference.)*

(A) 90° (B) 120° (C) 100° (D) 110°

27. Wonderla's Slowed-Down Spin!

A Ferris wheel at Wonderla completes one full rotation (360°) in **12 minutes**. A rider wants to know how many **degrees the wheel turns each minute**. But here's the twist: During one particular minute, maintenance slows the wheel to **only 70% of its usual speed.** How many degrees does the wheel turn in **that slowed minute**?

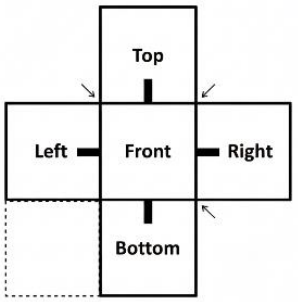


(A) 21° (B) 30°
(C) 28° (D) 42°

28. Decode Gokul's Cube Net!

A cube net shows the Front face with Top above it, Left and Right on its sides, Bottom below it, and one extra face (dotted) attached under the Left face. Which face is opposite Front?

(A) Top
(B) Bottom
(C) Left
(D) Extra face



29. Tilted Board, Surprising Shadow!

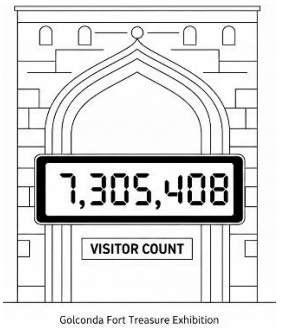
A streetlamp projects the shadow of a **tilted rectangular signboard** onto the road. When sunlight hits the signboard, only the **top edge** casts a **shadow segment of length 6 m**, while the **right edge** casts a **shadow of length 8 m**. If the sun's rays strike the signboard at 45°, which of the following shapes best represents the **shadow outline** on the ground?

(A) A perfect square (B) A rectangle

(C) A right-angled scalene triangle (D) A circle

30. The Glitched Visitor Counter!

During a treasure exhibition at Golconda Fort, a digital counter displays the visitor count as: **7,305,408.** But due to a glitch, the digits representing **ten-thousands** and **hundreds** suddenly drop to zero, while all other digits remain unchanged. What number now appears on the counter?



(A) 7,300,408 (B) 7,305,008

(C) 7,005,408 (D) 7,300,008

31. The 5-Digit Mega Number Challenge!

A math club sets a challenge using the digits: **2, 5, 7, 9, 0.** Students must form the **largest possible 5-digit number** that is **exactly divisible by 5**. Which number wins the challenge?

(A) 97520 (B) 95720 (C) 97250 (D) 95702

32. How Many Runners Really?

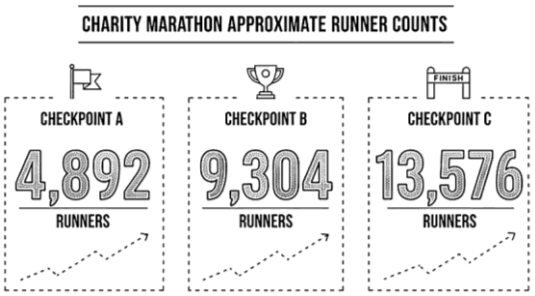
A charity marathon reports approximate runner counts from checkpoints:

Checkpoint A: **4,892 runners**

Checkpoint B: **9,304 runners**

Checkpoint C: **13,576 runners**

Estimate the **total** number of runners using *nearest thousand* rounding



(A) 27,000 (B) 28,000 (C) 29,000 (D) 30,000

33. How Big Is a Micro-City?

The population of a futuristic "Smart Micro-City" near Hyderabad is estimated as **18,72,000 people.**

A scientist says: "To the nearest power of 10, our population is roughly 10^x."

What is the value of **x**?

(A) 5 (B) 6 (C) 7 (D) 8

34. When a Number Refuses to Appear

In a digital art installation at Tank Bund, glowing tiles light up in sequence starting from **0**. Each second, the system lights the **next whole number**. But at certain moments, the tile corresponding to number **37** flickers and skips directly to **38**, without showing 37 at all. Which of the following statements is TRUE about the set of whole numbers?

(A) Skipping 37 means 37 is no longer a whole number.

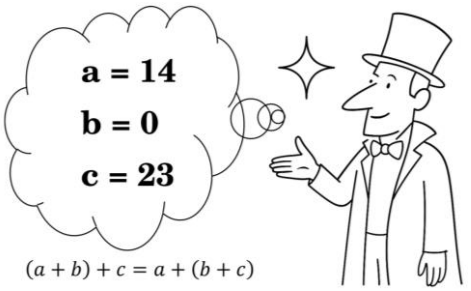
(B) Whole numbers include 1 but not 0.

(C) Whole numbers include 0 and all positive integers including 37.

(D) Whole numbers include all integers, including negative numbers.

35. Does Zero Break the Rule?

A magician places three glowing numbers on stage:
a = 14, **b = 0**, **c = 23**
He performs the trick: $(a + b) + c = a + (b + c)$
He tells the audience:
"Because of the mysterious nature of **0**, this equality might fail!"
Which of the following is correct?



(A) The equation fails because adding 0 changes the order.
(B) The equation always holds due to the associative property.
(C) The equation holds only if c = 0.
(D) The equation holds only if a = b

PART E – MENTAL ABILITY

36. Can You Build the Secret Word?

Consider making a meaningful word with the third, fifth, seventh, and tenth letters of the word OUTRAGEOUS. If more than one such word can be formed, write X as the answer, if no such word can be formed, write Y as the answer, and if only one such word can be formed write the second letter of that word.

(A) E (B) A (C) Y (D) X

37. Right, Right, Right… Which Letter?

Which letter is 7th to the right of the 18th letter from the right end in the following series?
ZABCDOPQRSTIJKLMNUVWXHGFEY

(A) N (B) ∪ (C) M (D) W

38. Matching Distances, Hidden Pairs!

How many such pairs of letters are there in the word 'SUGGESTION', each of which has as many letters between them in the word (both forward and backward direction) as they have between them in the English alphabetical series?

(A) One (B) Two (C) Three (D) Four

39. Who's missing?

Find the missing term in the following sequence.
ACH, FAI, JYK, MWN, ?

(A) PVS (B) OUR (C) PTQ (D) OTS

40. What Fits in the Blanks?

Which sequence of letters when placed at the blanks one after the other will complete the given letter series?
ba_cb_b_bab_

(A) acbb (B) bacc (C) bcaa (D) cabb