INFORMATION BULLETIN ResoFAST 2025

Currently Studying in Class X (JEE)

About ResoFAST

ResoFAST is a knowledge and aptitude test which is conducted by Resonance Schools, Hyderabad to assess the student's current academic performance and prospects.

For Foundation aspiring students ResoFAST would provide bench marking along with a real world feel of competitive spirit. It helps the student to showcase his/her talent in competitive exam pattern which will boost his/her confidence to perform well in future competitive examinations & make way for a bright career ahead.

Who can attend ResoFAST?

Students currently Studying 5th to 10th Classes are eligible to write ResoFAST exam.

How will ResoFAST help you?

- Students will get a comprehensive report, covering all domains in terms of subjects and aptitude, along with areas requiring improvement & percentile score.
- ResoFAST will evaluate your Analytical Skills & guide Students further to improve upon.
- Have a clear & personalised picture of your subject preparation concept wise.
- Qualify for a Resonance Schools and Colleges Classroom Programmes across all branches in Telugu states.

How to apply for ResoFAST ?

Students who want to apply for ResoFAST can login to **www.resofast.com** and apply by paying registration fee.

Registration Fee:

- Rs. 300/- per student – Payable Online using our secure payment gateway using Internet Banking, Debit/Credit card or any other online payment service
- You can also contact with ResoFAST Co-ordination Call for Registration Assistance on **9121219858 (9 AM to 7 PM)**

ResoFAST: Exam Process

ResoFAST exam is conducted in offline mode across all in Hyderabad as per the specific dates mentioned in website.

Disclaimer:

ResoFAST is an open excellence Test for motivating and rewarding students. Resonance doesn't ensure unconditional admissions on qualifying ResoFAST. Registration fee is nonrefundable. Resonance keeps all right for keeping details of the students confidential. Exam results cannot be challenged and reviewed.

ResoFAST 2025 Exam Pattern

Currently Studying in Class X (JEE)

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	10	Q1 to Q10	40 M
Part-B	Chemistry	10	Q11 to Q20	40 M
Part-C	Mathematics	15	Q21 to Q35	60 M
Part-D	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 are empty pages left at the end of this question paper for **rough work**.

Resonance® Junior Colleges with IIT-JEE & NEET — Hyderabad

RESONANCE SCHOOLS — THE EQUATION FOR EXCELLENCE

MEGA ResoFAST — Resonance Future Achievers Scholarship Test

ResoFAST 2025 Syllabus

Currently Studying in Class X (JEE)

SUBJECT: PHYSICS	
Chapter Name	**Topics**
Motion	Describing Motion, Measuring the Rate of Motion, Rate of Change of Velocity, Graphical Representation of Motion, Equations of Motion by Graphical Method, Uniform Circular Motion
Force and Laws of motion	Balanced And Unbalanced Forces, First Law of Motion, Inertia and Mass, Second Law of Motion, Third Law of Motion, Conservation of Momentum
Gravitation	Gravitation, Universal Law of Gravitation, Importance / Applications of Universal Law of Gravitation, Acceleration due to gravity (g), Free Fall, Mass, Weight
Fluid	Thrust and Pressure of The Liquid, Atmospheric Pressure, Upthrust and Buoyancy, Archimedes Principle, Density, Determination of Relative Density by Archimedes Principle, Using A Beam, Balance, Principle of Flotation, Laws of Flotation, Hydrometer
Work, Energy & Power	Work, Conditions for work, Positive/negative/zero work, Units of work, Energy, Kinetic energy, Potential energy, Work–energy theorem, Mechanical energy & conservation, Power, Units of power and commercial energy
Light	Reflection Of Light, Spherical Mirrors, Refraction of Light, The Human Eye, Defects of Vision and Their Correction, Refraction of Light Through a Prism, Dispersion of White Light by a Glass Prism, Atmospheric Refraction, Scattering of Light
Electricity	Electric Current and Circuit, Electric Potential and Potential Difference, Circuit Diagram, Ohm's Law, Factors on Which the Resistance of A, Conductor Depends, Resistance of a System of Resistors, Heating Effect of Electric Current, Electric Power

SUBJECT: CHEMISTRY	
Chapter Name	**Topics**
Matter in our surroundings	Physical nature of matter, Characteristics of particles of matter, States of matter and their properties, Change of state (melting, boiling, sublimation), Effect of temperature and pressure on states of matter, Evaporation and factors affecting evaporation
Is matter around us pure	Types of substances: elements, compounds, mixtures, Solutions: properties, concentration, types, Suspensions and colloids, Methods of separation of mixtures, Physical and chemical changes, Pure substances and mixtures – classification
Structure of atom	Subatomic particles (electron, proton, neutron), Thomson's model of atom, Rutherford's model of atom, Bohr's model of atom, Distribution of electrons in shells, Atomic number and mass number, Isotopes and isobars
Atoms and Molecules	Laws of chemical combination, Concept of atom and molecule, Chemical formulae and valency, Molecular mass and formula mass, Mole concept and numerical problems
Chemical Reactions & Equations	Chemical reactions and their characteristics, Writing and balancing chemical equations, Types of chemical reactions (combination, decomposition, displacement, double displacement, oxidation & reduction), Effects of oxidation reactions in daily life (generic correction), Corrosion and rancidity
Acids, Bases & Salts	Properties of acids and bases, Indicators and their uses, Strength of acids and bases (pH concept), Reactions of acids and bases with metals, metal carbonates, metal oxides, Neutralization and formation of salts, Important salts and their uses
Metal & Non-metals	Physical properties of metals and non-metals, Chemical properties of metals and non-metals, Reactivity series, Formation of ionic compounds, Occurrence of metals, Corrosion and prevention of corrosion

SUBJECT: MATHEMATICS	
Chapter Name	**Topics**
Number Systems	Irrational Numbers, Real Numbers, Representing Real Numbers on the Number Line, Operations on Real Numbers, Rationalizing the Denominator, Law of Exponents for Real Numbers
Polynomials	Polynomials in one Variable, Degree of the Polynomial, Zeroes of a Polynomial, Dividing Polynomials, factorising a polynomial, algebraic identities
Linear Equations in Two Variables	Linear Equations in Two Variables, Solution of a Linear Equation in two variables, Graph of a Linear Equation in Two Variables, Equation of Lines Parallel to X-axis and Y-axis, Equation of the X-axis and the Y-axis
Lines and Angles	Intersecting lines and non-intersecting lines, pairs of angles, lines and a transversal, lines parallel to the same line, angle sum property of a triangle
Surface Areas and Volumes	Surface areas and volumes of different shapes
Statistics	Collection of data, presentation of data, measures of central tendency, arithmetic mean, median, mode, deviation in values of central tendency
Coordinate Geometry	Cartesian system, locating a point, origin, plotting a point on the cartesian plane when its coordinates are given
Triangles	Criteria for congruence of tringles, congruence of triangles, other congruence rules, some properties of a triangle, some more criteria for congruency of triangles, inequalities in a triangle
Quadrilaterals	Properties of a Quadrilateral, Different Types of Quadrilaterals, Parallelogram and Their Properties, Diagonals of A Parallelogram, the Midpoint Theorem of Triangle
Area of Parallelogram and Triangles	Area of Planar Regions, Area of Rectangle, figures on the same base and between the Same Parallels, Parallelograms on the same base and between the same Parallel lines, Triangles on the same base and between the same Parallels
Circles	Angle subtended by a chord at a point on the circle, perpendicular from the centre to a chord, the three point that describe a circle, Chords and their distance from the centre of the circle, angle subtended by an arc of a circle, Angle subtended by an arc at a point on remaining part of circle, Angles in the same segment, cyclic quadrilateral
Probability	Probability, Random experiment and outcomes, equally likely outcomes, Trails and Events, Linking the chance to Probability
Real Numbers	The fundamental theorem of arithmetic, rational numbers and their decimal expansions, non-terminating, recurring decimals in rational numbers, irrational numbers, introduction to logarithms
Polynomials	Degree of a polynomial, value of a polynomial, zeroes of a polynomial, relationship between zeroes and coefficients of a polynomial, cubic polynomials, division algorithm for polynomials
Pair of Linear Equations in Two variables	Solutions of pairs of linear equations in two variables, graphical method of finding solution of a pair of linear equations, relation between coefficients and nature of system of equations, algebraic methods of finding the solutions for a pair of linear equations, substitution and elimination methods, equations reducible to a pair of linear equations in two variables
Quadratic Equations	quadratic equations, solution of a quadratic equation, nature of roots

SUBJECT: MENTAL ABILITY	
Chapter Name	**Topics**
Numbers Series	Numbers Series
Missing term in figure	Missing term in figure
Coding Decoding	Coding Decoding, Letter-Letter Coding, Letter-Number Coding, Substitution Coding, Puzzle Based Coding, Column Coding
Mathematical Operations	Mathematical Operations, Application of BODMAS, Problems-Solving by Substitution, Interchange of Signs and Numbers, Deriving the Appropriate Conclusions, Alphanumeric Puzzle
Seating arrangement	Seating arrangements, Linear Seating Arrangements, Circular Seating Arrangements

Resonance® Educational Institutions — Telangana & Andhra Pradesh

MEGA ResoFAST — Resonance Future Achievers Scholarship Test

Class: Currently Studying in Class X (JEE)

Maximum Marks: 160 M

Duration: 60 Min.

Resonance Future Achievers Scholarship Test

Important Instructions to the Students

1. The question paper contains a total of **40 Multiple Choice Questions**, numbered from **Q1 to Q40**.
2. This question paper contains **FOUR PARTS**. **Part-A** is ***Physics***, **Part-B** is ***Chemistry,*** **Part-C** is ***Mathematics,*** **Part-D** is ***Mental Ability.***
3. The question paper consists of **10 questions** each from **Physics, and Chemistry, 15 questions** from **Mathematics,** and **5 questions** from **Mental Ability,** attempt all questions, each having only one correct answer.
4. For any question:
   - Each **correct answer** is awarded **+4 marks**.
   - Each **incorrect answer** will result in a deduction of **0 mark**.
   - **No marks (0)** will be awarded if the question is left unanswered.
5. **Pattern & Marking Scheme of each section:**

Parts	Subject	No. of questions	Questions Range	Marks
Part-A	Physics	10	Q1 to Q10	40 M
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All the Best

PHYSICS

1. ***Force in action: When time ticks twice, can you find the power behind the motion***

A constant force acts on a body of mass m at rest for t seconds and then ceases to act. In next t seconds the body travels a distance x, magnitude of force is:

(A) $\frac{mx}{t^2}$ (B) $\frac{\text{mx}}{\text{t}}$ (C) mxt (D) mxt^2

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2. ***Standing behind the object, can you reflect on how far the image really is?***

An object A is placed at a distance d in front of a plane mirror. If one stands directly behind the object at distance S from the mirror, then the distance of the image of A from the individual is:

(A) 2 S (B) 2 d (C) $S + d$ (D) $S + 2d$

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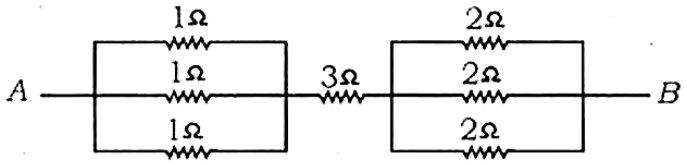
3. ***Resist the confusion! Can you crack the code between points A and B?***

What is the equivalent resistance of the given circuit between points A and B?



(A) 10Ω (B) 4Ω (C) $14/3\Omega$ (D) $17/6\Omega$

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4. ***Can your brain pump out the power needed to lift that tank?***

The power of a pump which takes 10 s to lift 100 kg of water tank situated at a height of 20 m is:

(A) $2\times10^4\text{ N}$ (B) $2\times10^3\text{ W}$ (C) $2\times10^2\text{ W}$ (D) None of these

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5. ***Tick-Tock, the Last-Second Drop!***

A body starts falling from height 'h' and travels distance h/2 during the last second of motion. The time of travel (in sec.) is:

(A) $\sqrt{2}-1$ (B) $2+\sqrt{2}$ (C) $\sqrt{2}+\sqrt{3}$ (D) $\sqrt{3}+2$

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6. ***From G to g — What's the Right Unit Key?***

The units for G/g will be: (symbols have their usual meanings)

(A) m^2/kg (B) kg/m (C) kg/m^2 (D) m/kg

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7. ***Floating Facts: What doesn't tip the Buoyant Balance?***

The buoyant force on an object submerged in a fluid does not depend on?

(A) The volume of the fluid displaced (B) The density of the fluid

(C) The weight of the object (D) The temperature of the object

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8. ***Mirror, Mirror with a Negative Power — What's your Focal Power?***

What is the focal length of a concave mirror with a power of –4 D?

(A) –4 m (B) –0.25 m (C) +0.25 m (D) +4 m

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9. ***Air to water, speed takes a hit — the ray bends towards, that's the perfect fit***

When a ray of light passes from air into water, it:

(A) Bends away from the normal (B) Bends towards the normal

(C) Passes straight through (D) Reflects back into the air

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10. ***Small force in, big force out — that's what hydraulics are all about***

In a hydraulic press, a force of 10 N is applied on a piston of area 2cm². If the area of the second piston is 10cm², what is the force exerted on the second piston?

(A) 20 N (B) 50 N (C) 100 N (D) 200 N

CHEMISTRY

11. ***Metal Meets Water: The Fiery Reaction Revealed!"***

When a metal X is treated with cold water, it gives a base Y with molecular formula XOH (Molecular mass $= 40$) and liberates a gas Z which easily catches fire. Here X, Y and Z are

	X	Y	Z
(A)	Na	NaOH	H_2
(B)	H_2	NaOH	Na
(C)	H_2	Na	NaOH
(D)	NaOH	Na	H_2

12. ***Electron Counts tell the tale: Metals vs Non-Metals***

The electronic configurations of three elements X, Y and Z are $X-2,8;\ Y-2,8,7$ and $Z-2,8,2$. which of the following is correct?

(A) X is a metal. (B) Y is a metal.

(C) Z is a non-metal. (D) Y is a non-metal and Z is a metal.

13. ***The Water-Resistant metal: Who Stays Dry?***

Which one of the following metals do not react with cold as well as hot water?

(A) Na (B) Ca (C) K (D) Cu

14. ***Calcium meets water: Gentle or Wild?***

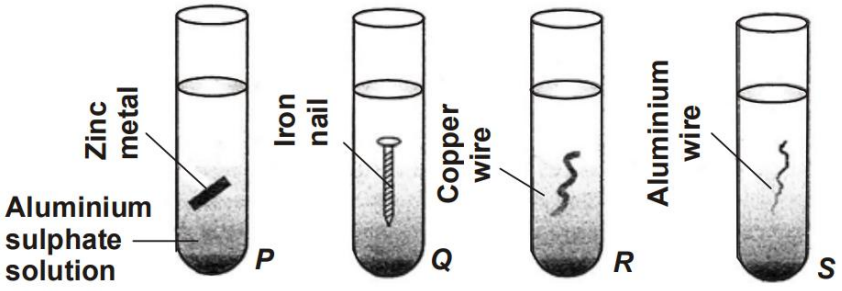
What happens when calcium is treated with water?

1. It does not react with water.
2. It reacts more violently with water.
3. It reacts less violently with water.
4. Bubbles of hydrogen gas formed stick to the surface of calcium.

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

15. ***Metal mix-up: Watch the colours change***

Four test tubes P, Q, R and S were taken and filled half with a solution of aluminium sulphate in water. Clean piece of metal zinc was placed in test tube P, iron nail in test tube Q, copper wire in test tube R and aluminium wire in test tube S. What colour change will be observed in all the four test tubes respectively?



(A) White, brown, blue, green (B) Colourless, colourless, colourless, colourless

(C) Colourless, brown, blue, colourless (D) Colourless, green, blue, colourless

16. ***Melting Points and Currents: How Do Alloys Compare?***

As compared to the pure metal, the electrical conductivity and melting point of an alloy is

(A) More (B) Less (C) Equal (D) Can't generalize

17. ***Nature of compound formed by Non-Metals***

Two non-metals X and Y combine with each other by sharing electrons to form compound Z. Which is the correct statement for compound ?

(A) Undergoes ionic reactions and soluble in organic solvents.

(B) Undergoes ionic reactions and soluble in water.

(C) Undergoes molecular reactions and soluble in organic solvents.

(D) Undergoes molecular reactions and soluble in water.

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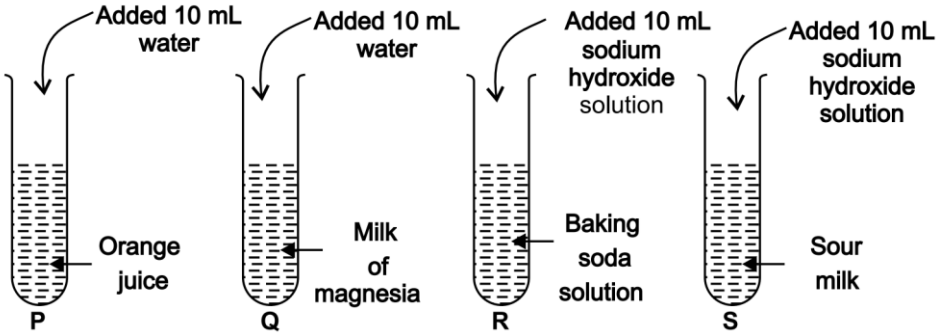
18. ***Methyl orange magic: which tube turns red***

Ashish took 4 test tubes P, Q, R and S each containing 10 mL of different solutions as shown in figure. Few drops of methyl orange are added to each tube. The solution in which tube will turn methyl orange to red?



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

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19. ***From fermentation to esters: The Journey of X, Y, and Z***

Compound X has the molecular formula C_2H_6O.

1. X can be made by fermentation process. 2. X can be oxidised to Y.

3. X can react with Y to form Z and water.

To which homologous series do X, Y and Z belong?

	X	Y	Z
A	Alcohols	Carboxylic Acids	Esters
B	Alcohols	Esters	Carboxylic Acids
C	Carboxylic Acids	Alcohols	Esters
D	Carboxylic Acids	Esters	Alcohols

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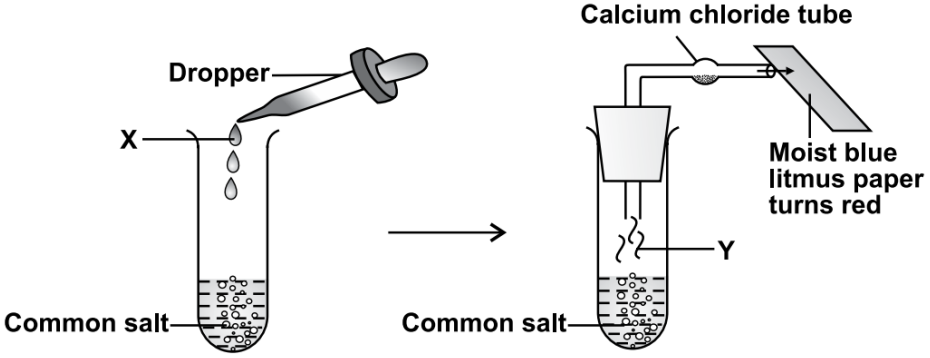
20. ***Chemical Clues: What's X and Y in the Reaction Mix?***

Study the given diagram carefully and identify X and Y respectively.



(A) Conc. HCl, CO_2 (B) Conc. H_2SO_4, HCl (C) Conc. HNO_3, H_2 (D) Conc. $NaOH, Cl_2$

21. ***Modulo Mystery: Crack the Leftover Code***

The remainder when 7^{103} is divided by 24 is:

(A) 1 (B) 7 (C) 19 (D) 23

22. ***Divide and Conquer: Unlocking external section coordinates***

A point P divides the line segment joining A(–2, 4) and B(6, –8) externally in the ratio 3:1. The coordinates of P are:

(A) (–6, 16) (B) (10, –14) (C) (10, –20) (D) (0, 0)

23. ***Rolling the Odds: When is the product divisible by 6?***

If two dice are rolled, the probability that the product of the numbers is divisible by 6 is:

(A) 1/3 (B) 5/12 (C) 1/2 (D) 7/12

24. ***Crack the code: Find the 15th term of this arithmetic progression***

The 15th term of the AP whose nth term is $T_n = 5n - 3$ is:

(A) 67 (B) 72 (C) 75 (D) 77

25. ***Solve for k: When roots meet the quadratic equation***

If α, β are roots of $x^2 - 4x + k = 0$ and $\alpha^2 + \beta^2 = 20$, then the value of k is:

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

26. ***Right triangle challenge: Solve for the altitude***

In triangle ABC, angle $\angle A = 90°$ deg. If AD is the altitude from A, and AB = 10, AC = 24, then AD = ?

(A) 9.2 (B) 10 (C) 12 (D) 12.5

27. ***Mix and Match: Calculate the probability of different colored draws***

A box contains 5 red, 4 blue, and 3 green balls. Two balls are drawn one after another without replacement. The probability that both are of different colours is:

(A) 11/13 (B) 22/33 (C) 47/66 (D) 31/33

28. ***Roots Revealed: Calculate α4+β4\alpha^4 + \beta^4α4+β4 using polynomial Identities***

If alpha, beta are roots of $2x^2 - 5x + 7 = 0$, $\alpha^4 + \beta^4$.

(A) $51/4$ (B) $-383/16$ (C) $73/4$ (D) $89/4$

29. ***Circle Secrets: Find the equation with center on the x-axis***

The equation of the circle passing through $(1,2),(3,4)$, and having its centre on the x-axis is:

(A) $x^2 + y^2 - 4x - 2y + 3 = 0$ (B) $x^2 + y^2 - 2x - 4y + 3 = 0$

(C) $x^2 + y^2 - 2x - 2y + 1 = 0$ (D) $x^2 + y^2 - 4x - 4y + 5 = 0$

30. ***Double Draw Drama: Probability of At Least One Spade***

From a deck of 52 cards, two cards are drawn together. The probability that at least one is a spade is:

(A) $39/102$ (B) $117/221$ (C) $15/34$ (D) $25/51$

31. ***Radical Riddle: Can You Solve for x?***

Solve for x: $\sqrt{(x+6)} - \sqrt{(x-2)} = 2$.

(A) 3 (B) 5 (C) 6 (D) 7

32. ***Cone vs Cylinder: Can you find the missing height?***

A cone and a cylinder have the same base radius and height. If their volumes differ by $264\ cm^3$ and the radius is 6 cm, find the height.

(A) 7 cm (B) 3.5 cm (C) 21 cm (D) 28 cm

33. ***Upstream vs Downstream: Solve the Speed Puzzle***

A man travels 48 km downstream in 6 hours and returns the same distance upstream in 8 hours. Find his speed in still water.

(A) 5 km/h (B) 6 km/h (C) 7 km/h (D) 8 km/h

34. ***Series Secrets: Uncover the Missing Term***

The sum of n terms of a series is given by $Sn = n^2 + 2n$. Then the 15th term is:

(A) 31 (B) 32 (C) 33 (D) 34

35. ***River Riddle: Find the Rowing Speed***

A man rows 18km downstream in 2 hours and 12km upstream in 3 hours. His speed in still water is:

(A) 3 km/h (B) 4 km/h (C) 5 km/h (D) 6.5 km/h

MENTAL ABILITY

36. ***Number swap mystery: What comes next in the series?***

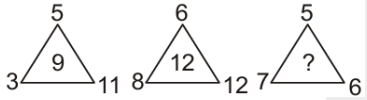
Find the missing number

12, 21, 23, 32, 34, 43, 45, ?

(A) 54 (B) 48 (C) 77 (D) 9

37. ***"Figure it out: What's the missing term?***

Find the missing term in figure



(A) 12 (B) 9 (C) 8 (D) 6

38. ***Code crack: Decode the secret behind GIGANTIC → GIGTANCI***

In a certain code, **GIGANTIC** is written as **GIGTANCI**. How is **MIRACLES** written in that code ?

(A) MIRLCAES (B) MIRLACSE (C) RIMCALSE (D) RIMLCAES

39. ***Crack the code: What must follow from these Inequalities?***

If A + B > C + D, B + E = 2C and C + D > B + E, it necessarily follows that

(A) A + B > 2 C (B) A + B > 2D (C) A + B > 2E (D) A > C

40. ***Circle the seats: Who's where in this seating puzzle?***

There are eight people A, B, C, D, E, F, G and H sitting around a circular table facing centre. B is sitting second to the left for G who is sitting third to the right of F. Only E is sitting between A and C. C is sitting third to the left of B. Only one person is sitting between E and H. Which of the following is correct ?

(A) D is sitting third to the left of H (B) F is sitting third to the left of G

(C) C is sitting third to the left of D (D) H is sitting second to the right of C

SPACE FOR ROUGH WORK

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Resonance®
Junior Colleges with IIT-JEE & NEET
Hyderabad

3 OUT OF EVERY 4

Resonance Hyderabad Students Secured Merit Seats in 2025

6100+ students have secured seats in IITs, NITs, IIITs, AIIMS & other top institutes in just 7 years

Think Results. Think Resonance.

2025 Result Highlights

- 175 IIT Seat Selections
- 323 NIT,IIIT,BITS Selections
- 550 Merit Seats in Top 10 EAPCET Colleges
- 910 Merit Seats in Top 30 EAPCET Colleges
- 600 Merit Seats in Top National and State Deemed universities
- 90+ Merit Seats in Top Medical Colleges
- 955 Students in State Top 10 Marks of Telangana Intermediate