# ISAT Practice Test **2**

**CLASS-9**

Time: 2 Hours
Maximum Marks: 336

### General Instructions

1. There are **84** questions in this question paper with internal choice.
2. Each test will have 5 sections.
3. Physics, Chemistry, Biology, Mathematics & Mental Ability.
4. Each Question will be **MCQ-Type** (Multiple Choice Question with One Option Correct.)
5. **Marking Scheme:**
   **+4** Correct Response, **-1** Incorrect Response, **0** No response

DATE: _____/ _____/ _____

NAME: _____

## PHYSICS

**(1)** Which of the following figures depicts the position of pole star correctly?



(a)   (b)

(c)   (d)
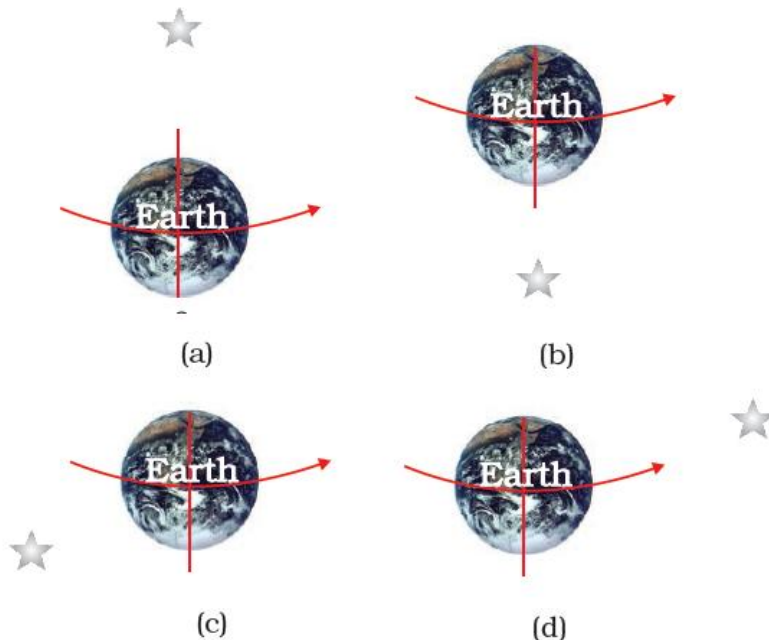
**(2)** The loudness of sound depends on:

(a) its amplitude.  (b) its frequency.   (c) its time period. (d) its speed.

**(3)** Electric current is to be passed from one body to another. For this purpose the two bodies must be joined by

(a) cotton thread   (b) plastic string   (c) copper wire     (d) rubber band

**(4)** We can see a non-luminous object when light:

(a) emitted by the object falls on the eye.

(b) is reflected from the object towards our eye.

(c) completely passes through the object.

(d) gets completely absorbed by the object.

**(5)**



In Fig., a boy is shown pushing the box from right to left. The force of friction will act on the box

(a) from right to left ($\leftarrow$)          (b) from left to right ($\rightarrow$)

(c) vertically downwards ($\downarrow$)          (d) vertically upwards ($\uparrow$)

**(6)** In the circuit shown in Fig., when the circuit is completed, the hammer strikes the gong. Which of the following force is responsible for the movement of hammer?
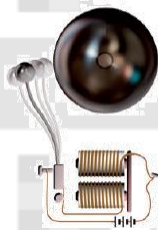


(a) gravitational force alone          (b) electrostatic force alone

(c) magnetic force alone          (d) frictional force alone

**(7)** Boojho and Paheli performed experiments taking similar bulbs and cells but two different solutions A and B as shown in Fig.



Solution A

Boojho's Experiment
(A)

Solution B

Paheli's Experiment
(B)
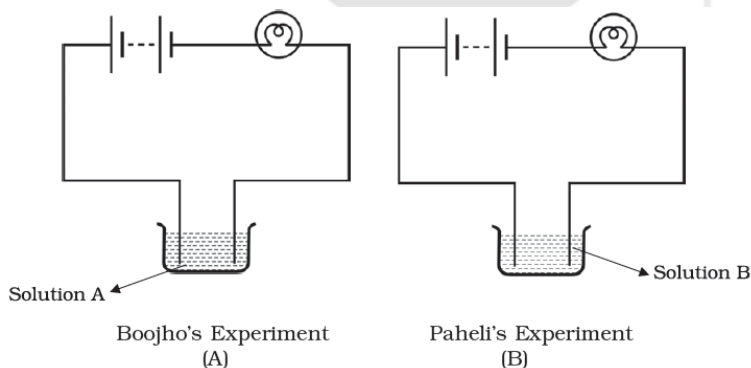
They found that the bulb in the setup A glows more brightly as compared to that of the setup B. You would conclude that

(a) higher current is flowing through the circuit in setup A.

(b) higher current is flowing through the circuit in setup B.

(c) equal current is flowing through both the circuits.

(d) the current flowing through the circuits in the two setups cannot be compared in this manner.

**(8)** A car is accelerated on a levelled road and attains a velocity 4 times of its initial velocity. In this process the potential energy of the car

(a) does not change

(b) becomes twice to that of initial

(c) becomes 4 times that of initial

(d) becomes 16 times that of initial

**(9)** A key of a mechanical piano struck gently and then struck again but much harder this time. In the second case

(a) sound will be louder but pitch will not be different

(b) sound will be louder and pitch will also be higher

(c) sound will be louder but pitch will be lower

(d) both loudness and pitch will remain unaffected

**(10)** The value of acceleration due to gravity

(a) is same on equator and poles      (b) is least on poles

(c) is least on equator      (d) increases from pole to equator

**(11)** According to the third law of motion, action and reaction

(a) always act on the same body

(b) always act on different bodies in opposite directions

(c) have same magnitude and directions

(d) act on either body at normal to each other

**(12)** A body is thrown vertically upward with velocity u, the greatest height h to which it will rise is,

(a) $u/g$      (b) $u^2/2g$      (c) $u^2/g$      (d) $u/2g$

**(13)** In which of the following cases of motions, the distance moved and the magnitude of displacement are equal?

(a) If the car is moving on straight road

(b) If the car is moving in circular path

(c) The pendulum is moving to and fro

(d) The earth is revolving around the Sun

**(14)** Loudness of sound is measured in units of

(a) decibel (dB)      (b) hertz (Hz)      (c) metre (m)      (d) metre/second (m/s)

# CHEMISTRY

**(15)** The clothes made from which of the following fibres will take lesser time than others to dry if soaked in water?

(a) Silk            (b) Wool            (c) Nylon            (d) Rayon

**(16)** Ice is floating on water in a beaker when ice completely melts then level of water in beaker:

(a) Increases                        (b) Decreases

(c) remains the same         (d) First increases decreases

**(17)** Which of the following is the best extinguisher for inflammable materials?

(a) Water                        (b) Sulphur dioxide

(c) Carbon dioxide           (d) Carbon monoxide

**(18)** Magnetism is most beneficial for separating

(a) gases and non-metallic liquids

(b) magnetic solids and solids such as sulphur

(c) non-metallic solids and solids such as sulphur

(d) non-magnetic solids from non-magnetic liquid

**(19)** The metal which can be cut with a knife:

(a) Sodium and potassium      (b) Barium and calcium

(c) Sodium and mercury        (d) Potassium and calcium

**(20)** Which thing is made from cotton?

(a) Nylon           (b) Terylene          (c) Rayon          (d) Acrylic

**(21)** The following that sublimes on heating is

(a) Ice.          (b) Dry ice.          (c) Water.          (d) Water vapors.

**(22)** Which one is called black gold?

(a) silver          (b) platinum          (c) petroleum        (d) coal

**(23)** Electric bell works on the principle of:

(a) chemical effect of current      (b) magnetic effect of current

(c) heating effect of current        (d) all of the above

**(24)** Which one of the following has the highest calorific value?

(a) $H_2$          (b) Wax          (c) Candle          (d) All of these

**(25)** The metal which is not corroded by air, water and acid is

(a) copper          (b) zinc          (c) aluminium        (d) gold

**(26)** The process by which a chemical change takes place in a substance when electric current is passed through it is called:

(a) electrolysis      (b) electroplating      (c) electrodes      (d) thermionic conduction

**(27)** The process by which a mixture of sodium chloride and ammonium chloride can be separated, is called

(a) sublimation                 (b) chromatography

(c) evaporation                (d) distillation

**(28)** The mass % of solvent in a solution is 65. The mass % of the solute in the same solution will be

(a) 90          (b) 65          (c) 55          (d) 35

## BIOLOGY

**(29)** Reproduction by budding takes place in

(a) hydra          (b) amoeba          (c) paramecium      (d) bacteria

**(30)** In human beings, after fertilisation, the structure which gets embedded in the wall of uterus is

(a) ovum          (b) embryo          (c) foetus          (d) zygote

**(31)** Aquatic animals in which fertilisation occurs in water are said to be:

(a) viviparous without fertilisation.

(b) oviparous with external fertilisation.

(c) viviparous with internal fertilisation.

(d) oviparous with internal fertilisation.

**(32)** The cell organelle involved in forming complex sugars from simple sugars are

(a) endoplasmic reticulum          (b) ribosomes

(c) plastids          (d) golgi apparatus

**(33)** Which out of the following is not a function of vacuole?

(a) Storage

(b) Providing turgidity and rigidity to the cell

(c) Waste excretion

(d) Locomotion

**(34)** The gas released during the preparation of bread is

(a) oxygen          (b) carbon dioxide

(c) nitrogen          (d) sulphur dioxide

**(35)** In desert plants, rate of water loss gets reduced due to the presence of

(a) cuticle          (b) stomata          (c) lignin          (d) suberin

**(36)** Parenchyma cells are

(a) relatively unspecified and thin walled

(b) thick walled and specialised

(c) lignified

(d) none of these

**(37)** Eukaryotic cells devoid of ER are:

(a) Liver cells      (b) Kidney cell      (c) Leucocyte      (d) Mature erythrocytes

**(38)** SER takes part in synthesis of :

(a) lipids and steroids          (b) vitamins

(c) carbohydrate          (d) all of the above

**(39)** Besides protein, ribosomes contain:

(a) DNA          (b) RNA

(c) Both RNA & DNA          (d) Lipids

**(40)** Most abundant organelle of the cells are:

(a) Mitochondria  (b) Plastids    (c) Ribosomes    (d) Golgi body

**(41)** Golgi apparatus is concerned with:

(a) excretion      (b) secretion    (c) ATP synthesis  (d) RNA synthesis

**(42)** Main function of lysosome is:

(a) Secretion                (b) Respiration

(c) Extracellular digestion     (d) Intra cellular digestion

# MATHEMATICS

**(43)** Every rational number is

(a) a natural number           (b) an integer

(c) a real number               (d) a whole number

**(44)** The product of any two irrational numbers is

(a) always an irrational number    (b) always a rational number

(c) always an integer           (d) sometimes rational, sometimes irrational

**(45)** The decimal expansion of the number $\sqrt{2}$ is

(a) a finite decimal           (b) 1.41421

(c) non-terminating recurring    (d) non-terminating non-recurring

**(46)** Zero of the zero polynomial is

(a) 0                    (b) 1

(c) Any real number         (d) Not defined

**(47)** One of the zeroes of the polynomial $2x^2 + 7x - 4$ is

(a) 2        (b) $\dfrac{1}{2}$        (c) $-\dfrac{1}{2}$        (d) −2

**(48)** If $x + 1$ is a factor of the polynomial $2x^2 + kx$, then the value of k is

(a) −3        (b) 4        (c) 2        (d) −2

**(49)** Point (−3, 5) lies in the

(a) first quadrant           (b) second quadrant

(c) third quadrant           (d) fourth quadrant

**(50)** Signs of the abscissa and ordinate of a point in the second quadrant are respectively

(a) +, +       (b) −, −       (c) −, +       (d) +, −

**(51)** The point at which the two coordinate axes meet is called the

(a) abscissa      (b) ordinate      (c) origin      (d) quadrant

**(52)** The graph of the linear equation $2x + 3y = 6$ cuts the y-axis at the point

(a) (2, 0)     (b) (0, 3)     (c) (3, 0)     (d) (0, 2)

**(53)** Any point on the line y = x of the form

(a) (a, a)     (b) (0, a)     (c) (a, 0)     (d) (a, −a)

**(54)** It is known that if x + y = 10 then x + y + z = 10 + z. The Euclid's axiom that illustrates this statement is:

(a) First Axiom     (b) Second Axiom  (c) Third Axiom     (d) Fourth Axiom

**(55)** The angles of a triangle are in the ratio 5 : 3 : 7. The triangle is
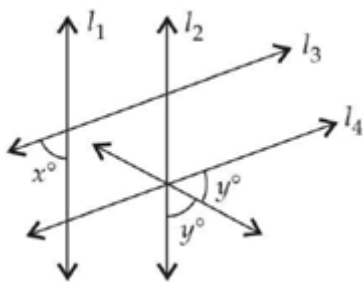
(a) an acute angled triangle          (b) on obtuse angled triangle

(c) a right triangle                   (d) an isosceles triangle

**(56)** In the adjoining figure, if $l \parallel m$ then the value of x is
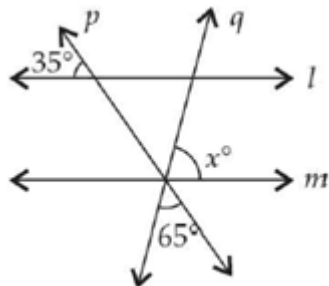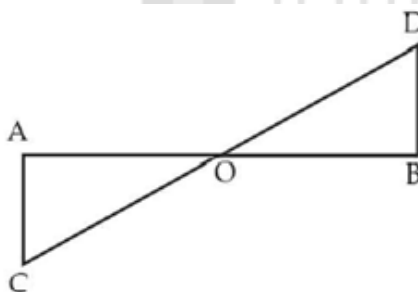


(a) 70°             (b) 100°           (c) 80°            (d) 85°

**(57)** In the adjoining figure, if $l_1 \parallel l_2$ and $l_3 \parallel l_4$ then the value of y in terms of x is
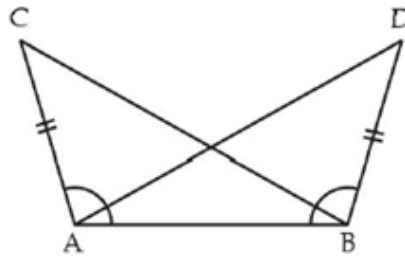


(a) 90 + x        (b) 90 – x        (c) 90 + 2x       (d) $90 - \dfrac{x}{2}$

**(58)** In the adjoining figure, O is mid-point of AB. If $\angle ACO = \angle BDO$, then $\angle OAC$ is equal to
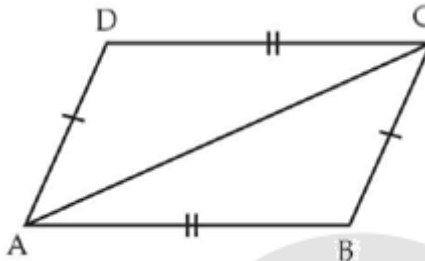


(a) $\angle OCA$       (b) $\angle ODB$       (c) $\angle OBD$       (d) $\angle BOD$

**(59)** In the adjoining figure, AC = BD. If ∠CAB = ∠DBA, then ∠ACB is equal to



(a) ∠BAD       (b) ∠ABC       (c) ∠ABD       (d) ∠BDA

**(60)** In the adjoining figure, ABCD is a quadrilateral in which AD = CB and AB = CD, then ∠ACB is equal to



(a) ∠ACD       (b) ∠BAC       (c) ∠CAD       (d) ∠BAD

**(61)** If the sides of a parallelogram are 9 cm and 4 cm, then the ratio of their corresponding altitudes is

(a) 2 : 3       (b) 3 : 2       (c) 9 : 4       (d) 4 : 9

**(62)** The width of each of five continuous classes in a frequency distribution is 5 and the lower class-limit of the lowest class is 10. The upper class-limit of the highest class is:

(a) 15       (b) 25       (c) 35       (d) 40

**(63)** Let m be the mid-point and $l$ be the upper class limit of a class in a continuous frequency distribution. The lower class limit of the class is:

(a) 2m + $l$       (b) 2m − $l$       (c) m − $l$       (d) m − 2$l$

**(64)** To draw a histogram to represent the following frequency distribution:

| Class interval | 5–10 | 10–15 | 15–25 | 25–45 | 45–75 |
|---|---|---|---|---|---|
| Frequency | 6 | 12 | 10 | 8 | 15 |

the adjusted frequency for the class 25–45 is:

(a) 6       (b) 5       (c) 3       (d) 2

**(65)** Arpita's present age is thrice of Shilpa. If Shilpa's age three years ago was x. Then Arpita's present age is

(a) 3(x − 3)       (b) 3x + 3       (c) 3x − 9       (d) 3(x + 3)

**(66)** How many diagonals does a hexagon have?

(a) 9       (b) 8       (c) 2       (d) 6

**(67)** Which of the following can never be the measure of exterior angle of a regular polygon?

(a) 22°       (b) 36°       (c) 45°       (d) 30°

**(68)** Find the value of x so that $(-2)^3 \times (-2)^{-6} = (-2)^{2x-1}$

(a) 1        (b) –2        (c) –1        (d) 0

**(69)** A cube of side 4 cm is cut into 1 cm cubes. What is the ratio of the surface areas of the original cubes and cut-out cubes?

(a) 1 : 2        (b) 1 : 3        (c) 1 : 4        (d) 1 : 6

**(70)** Coefficient of y in the term $\dfrac{-y}{3}$ is

(a) –1        (b) –3        (c) $\dfrac{-1}{3}$        (d) $\dfrac{1}{3}$

## MENTAL ABILITY

**(71)** 3, 6, 18, 72, 360, .....

(a) 1296        (b) 2160        (c) 2254        (d) 4329

**(72)** 5, 9, 21, 37, 81, .......

(a) 153        (b) 150        (c) 158        (d) 151

**(73)** If the positions of the third and tenth letters of the word DOCUMENTION are interchanged, and likewise the positions of the fourth and seventh letters, the second and sixth letters is interchanged, which of the following will be eleventh from the right end?

(a) C        (b) I        (c) T        (d) U

**(74)** Arrange the given words in alphabetical order and tick the one that comes in the 2nd position.

(a) Restrict        (b) Rocket        (c) Robber        (d) Radom

**(75)** In a certain code, if AFFAIR is FAAFRI, then FERRARIS is coded as?

(a) EFRRARIS        (b) EFRRRASI        (c) EFRRRAIS        (d) EFRRARSI

**(76)** In a certain code, APPLE is XNNZM and BAT is HXC, then BATTLE will be coded as?

(a) XHCCZH        (b) HXCCZM        (c) HXCCMZ        (d) HXMCCZ

**(77)** A number is greater than 3 but less than 8. Also, it is greater than 6 but less than 10. The number is

(a) 5        (b) 6        (c) 7        (d) 8

**(78)** If it is possible to make a number which is perfect square of a two- digit odd number with the second , the sixth and the ninth digits of the number 187642539, which of the following is the digit in the unit's place of that two- digit odd number?

(a) 1        (b) 7

(c) 9        (d) No such number can be made

**(79)** If + means ÷ ,– means ×, ÷ means + and × means –, then 36 × 8 + 4 ÷ 6 +2 –3 =?

(a) 2        (b) 18        (c) 43        (d) 13/2

**(80)** It being given that :> denotes +, < denotes −, + denotes ÷, − denotes =, = denotes 'less than' and × denotes 'greater than' , find which of the following is a correct statement:

(a) 3 + 2 > 4 = 9 + 3 < 1

(b) 3 > 2 > 4 = 18 + 3 < 2

(c) 3 > 2 < 4 × 8 + 4 < 2

(d) 3 + 2 < 4 × 9 + 3 < 3

**(81)** Sobha was facing East. She walked 20 metres. Turning left she moved 15 metres and then turning right moved 25 metres. Finally, she turned right and moved 15 metres more. How far is she from her starting point?

(a) 25 metres      (b) 35 metres      (c) 50 metres      (d) 45 metres

**(82)** Jatin leaves his house and walks 12 km towards North. He turns right and walks another 12 km. He turns right again, walks 12 km more and turns left to walk 5 km. How far is he from his home and in which direction?

(a) 7 km East      (b) 10 km East      (c) 17 km East      (d) 24 km East

**(83)** What number should replace the question mark?

Circle 1: 7, 8, 5, 4 — center 36
Circle 2: 9, 3, 5, 2 — center 17
Circle 3: 8, 5, 6, 3 — center ?
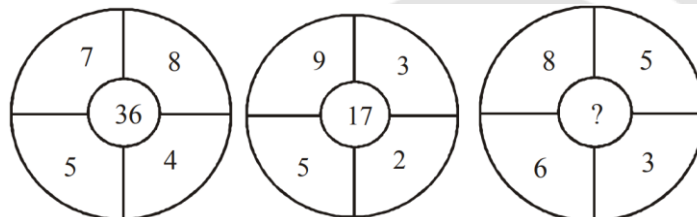
(a) 18      (b) 22      (c) 36      (d) 19

**(84)** jealous | ?

(a) ¡ǝɒlouƨ      (b) ¡ǝɒlous      (c) soulɒǝj      (d) ƨʋolɒǝ¡

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