# I SAT

# ISAT Practice Test ①

**Time: 2 Hours**
**Maximum Marks: 336**

## CLASS-9

### 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)** Morning star is the name given to
(a) pole star
(b) star Sirius
(c) planet Jupiter
(d) planet Venus

**(2)** A list of mediums is given below.
(i) wood (iii) air
(ii) water (iv) vacuum
In which of these mediums can sound travel?
(a) i & ii only
(b) i, ii & iii only
(c) iii & iv only
(d) ii, iii & iv only

**(3)** An electroscope is a device which is used to find if an object is
(a) charged
(b) magnetic
(c) free of cracks
(d) hot

**(4)** Part of the eye which controls the light entering is called
(a) iris
(b) cornea
(c) lens
(d) retina

**(5)** Whenever the surfaces in contact tend to move or move with respect to each other, the force of friction comes into play
(a) only if the objects are solid.
(b) only if one of the two objects is liquid.

(c) only if one of the two objects is gaseous.

(d) irrespective of whether the objects are solid, liquid or gaseous.

**(6)** In Fig, two boys A and B are shown applying force on a block. If the block moves towards the right, which one of the following statements is correct?



(a) Magnitude of force applied by A is greater than that of B.

(b) Magnitude of force applied by A is smaller than that of B.

(c) Net force on the block is towards A.

(d) Magnitude of force applied by A is equal to that of B.

**(7)** An electric current can produce

(a) heating effect only.

(b) chemical effect only.

(c) magnetic effect only.

(d) chemical, heating, and magnetic effects.

**(8)** When a body falls freely towards the earth, then its total energy

(a) increases                    (b) decreases

(c) remains constant             (d) first increases and then decreases

**(9)** Note is a sound

(a) of mixture of several frequencies  (b) of mixture of two frequencies only

(c) of a single frequency            (d) always unpleasant to listen

**(10)** Two objects of different masses falling freely near the surface of moon would

(a) have same velocities at any instant

(b) have different accelerations

(c) experience forces of same magnitude

(d) undergo a change in their inertia

**(11)** Which of the following statement is not correct for an object moving along a straight path in an accelerated motion?

(a) Its speed keeps changing

(b) Its velocity always changes

(c) It always goes away from the earth

(d) A force is always acting on it

**(12)** A particle is moving in a circular path of radius r. The displacement after half a circle would be:

(a) Zero         (b) $\pi r$         (c) 2 r         (d) $2\pi$ r

**(13)** Slope of a velocity – time graph gives

(a) the distance                  (b) the displacement

(c) the acceleration            (d) the speed

**(14)** Suppose a boy is enjoying a ride on a merry-go-round which is moving with a constant speed of 10 m s$^{-1}$. It implies that the boy is

(a) at rest                      (b) moving with no acceleration

(c) in accelerated motion       (d) moving with uniform velocity

# CHEMISTRY

**(15)** The boiling point of a gas is –80°C. This temperature is equivalent to

(a) –193 K         (b) 193 K         (c) 353 K         (d) – 353 K

**(16)** While bursting crackers it is safe to wear clothes made of:

(a) nylon         (b) polyesters         (c) cotton         (d) silk

**(17)** Rate of evaporation is highest in

(a) an open vessel of diameter 25 cm.

(b) an open vessel of diameter 30 cm.

(c) an open vessel of diameter 27.5 cm.

(d) an open vessel of radius 26 cm

**(18)** Insulators have

(a) low resistance               (b) high resistance

(c) high conductance           (d) all of the above

**(19)** The metal which is stored in kerosene:

(a) Phosphorus     (b) Magnesium     (c) Sodium     (d) Zinc

**(20)** Shaving cream is colloidal solution of-

(a) gas in liquid     (b) liquid in liquid   (c) solid in liquid    (d) gas in solid

**(21)** The distillation of crude petroleum to obtain various commercially useful fraction is called:

(a) compression     (b) refining         (c) mining         (d) none of these

**(22)** While determining the boiling point of water, the thermometer should be kept in such a way that its bulb

(a) remains dipped in water

(b) remains just above the surface of water

(c) in touch with the bottom of container

(d) remains near the cork of the container

**(23)** What kind of combustion is undergone by ignition of a cracker?

(a) Explosive combustion          (b) Spontaneous combustion

(c) Rapid combustion                (d) Slow combustion

**(24)** Which zone produces yellow light during burning of candle?

(a) Non-Luminous zone (b) Dark zone

(c) Luminous zone (d) Blue zone

**(25)** Bauxite is an ore of

(a) boron (b) aluminium (c) barium (d) chromium

**(26)** Flax is a kind of

(a) animal skin (b) synthetic fibre (c) plant fibre (d) none of these

**(27)** Bakelite is a/an:

(a) semi conductor (b) Conductor

(c) insulator (d) None of the above

**(28)** The more effective in cooling is

(a) water at 0°C (b) water at 100°C (c) ice at 0°C (d) gas at 0°C

# BIOLOGY

**(29)** Intestine absorb the digested food materials. What type of epithelial cells are responsible for that?

(a) Stratified squamous epithelium (b) Columnar epithelium

(c) Spindle fibres (d) Cuboidal epithelium

**(30)** While doing work and running, you move your organs like hands, legs etc. Which among the following is correct?

(a) Smooth muscles contract and pull the ligament to move the bones

(b) Smooth muscles contract and pull the tendons to move the bones

(c) Skeletal muscles contract and pull the ligament to move the bones

(d) Skeletal muscles contract and pull the tendon to move the bones

**(31)** Meristematic tissues in plants are

(a) localised and permanent (b) not limited to certain regions

(c) localised and dividing cells (d) growing in volume

**(32)** A disease in human beings caused by virus is _____.

(a) typhoid (b) influenza (c) dysentry (d) cholera

**(33)** The two micro-organisms which live in symbiotic association in lichens are

(a) fungus and protozoa (b) alga and bacteria

(c) bacteria and protozoa (d) alga and fungus

**(34)** The disease caused by a protozoan and spread by an insect is_____.

(a) dengue (b) malaria (c) polio (d) measles

**(35)** Voluntary muscles are found in

(a) alimentary canal (b) limbs

(c) iris of the eye (d) bronchi of lungs

**(36)** The dead element present in the phloem is

(a) companion cells (b) phloem fibres

(c) phloem parenchyma (d) sieve tubes

**(37)** Find out the correct sentence

(a) Enzymes packed in Lysosomes are made through RER (rough endoplasmic reticulum)

(b) Rough endoplasmic reticulum and smooth endoplasmic reticulum produce lipid and protein respectively

(c) Endoplasmic reticulum is related with the destruction of plasmamembrane

(d) Nucleoid is present inside the nucleoplasm of eukaryotic nucleus

**(38)** Which cell organelle plays a crucial role in detoxifying many poisons and drugs in a cell?

(a) Golgi apparatus                     (b) Lysosomes

(c) Smooth endoplasmic reticulum    (d) Vacuole

**(39)** Plasmolysis in a plant cell is defined as

(a) break down (lysis) of plasma membrane in hypotonic medium

(b) shrinkage of cytoplasm in hypertonic medium

(c) shrinkage of nucleoplasm

(d) none of them

**(40)** The undefined nuclear region of prokaryotes are also known as

(a) nucleus       (b) nucleolus       (c) nucleic acid       (d) nucleoid

**(41)** Sets of reproductive terms are given below. Choose the set that has an incorrect combination.

(a) sperm, testis, sperm duct, penis

(b) menstruation, egg, oviduct, uterus

(c) sperm, oviduct, egg, uterus

(d) ovulation, egg, oviduct, uterus

**(42)** In humans, the initial development of fertilised egg takes place in the

(a) ovary            (b) testis            (c) oviduct            (d) uterus

# MATHEMATICS

**(43)** Which of the following is not equal to $\left[ \left( \dfrac{5}{6} \right)^{\frac{1}{5}} \right]^{-\frac{1}{6}}$ ?

(a) $(5/6)^{1/5 - 1/6}$      (b) $1/[(5/6)^{1/5}]^{1/6}$    (c) $(6/5)^{1/30}$      (d) $(5/6)^{-1/30}$

**(44)** Decimal representation of a rational number cannot be

(a) terminating                   (b) non-terminating

(c) non-terminating repeating      (d) non-terminating non-repeating

**(45)** Between two rational numbers

(a) there is no rational number

(b) there is exactly one rational number

(c) there are infinitely many rational numbers

(d) there are only rational numbers and no irrational numbers

**(46)** Which of the following is a polynomial?

(a) $\dfrac{x^2}{2} - \dfrac{2}{x^2}$  (b) $\sqrt{2x} - 1$  (c) $x^2 + \dfrac{3x^{\frac{3}{2}}}{\sqrt{x}}$  (d) $\dfrac{x-1}{x+1}$

**(47)** Degree of the polynomial $4x^4 + 0x^3 + 0x^5 + 5x + 7$ is

(a) 4  (b) 5  (c) 3  (d) 7

**(48)** Degree of the zero polynomial is

(a) 0  (b) 1

(c) Any natural number  (d) Not defined

**(49)** Point (–10, 0) lies

(a) on the negative direction of the x-axis

(b) on the negative direction of the y-axis

(c) in the third quadrant

(d) in the fourth quadrant

**(50)** Abscissa of all the points on the x-axis is

(a) 0  (b) 1  (c) 2  (d) any number

**(51)** Point (0, –7) lies

(a) on the x-axis  (b) in the second quadrant

(c) on the y-axis  (d) in the fourth quadrant

**(52)** The equation $2x + 5y = 7$ has a unique solution, if x, y are:

(a) Natural numbers  (b) Positive real numbers

(c) Real numbers  (d) Rational numbers

**(53)** Any solution of the linear equation $2x + 0y + 9 = 0$ in two variables is of the form

(a) $\left(-\dfrac{9}{2}, m\right)$  (b) $\left(n, -\dfrac{9}{2}\right)$  (c) $\left(0, -\dfrac{9}{2}\right)$  (d) (–9, 0)
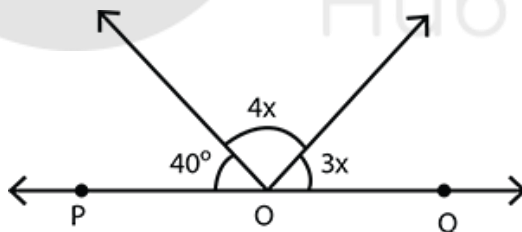
**(54)** The number of dimensions, a surface has:

(a) 1  (b) 2  (c) 3  (d) 0

**(55)** If one of the angles of a triangle is 130°, then the angle between the bisectors of the other two angles can be
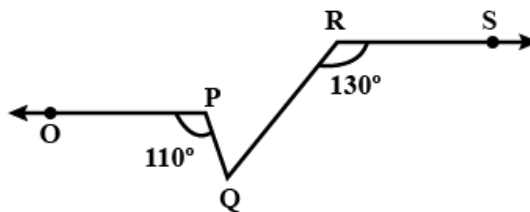
(a) 50°  (b) 65°  (c) 145°  (d) 155°

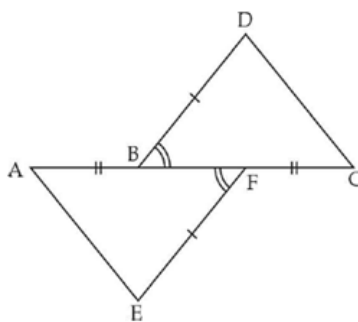**(56)** In Fig., POQ is a line. The value of x is



(a) 20°  (b) 25°  (c) 30°  (d) 35°

**(57)** In Fig., if OP||RS, ∠OPQ = 110° and ∠QRS = 130°, then ∠PQR is equal to



(a) 40°          (b) 50°          (c) 60°          (d) 70°

**(58)** It is given that ΔABC ≅ ΔFDE, AB = 5 cm, ∠B = 40° and ∠A = 80°. Then which of the following is true?

(a) DF = 5 cm, ∠F = 60°          (b) DF = 5 cm, ∠E = 60°

(c) DE = 5 cm, ∠E = 60°          (d) DE = 5 cm, ∠D = 40°

**(59)** In the adjoining figure, AB = FC, EF = BD and ∠AFE = ∠CBD. Then the rule by which ΔAFE ≅ ΔCBD is



(a) SAS          (b) ASA          (c) SSS          (d) AAS

**(60)** In the adjoining figure, AB ⊥ BE and FE ⊥ BE. If AB = FE and BC = DE, then
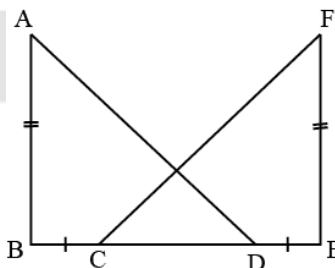


(a) ΔABD ≅ ΔEFC   (b) ΔABD ≅ ΔFEC   (c) ΔABD ≅ ΔECF   (d) ΔABD ≅ ΔCEF

**(61)** An isosceles right triangle has area 8 cm². The length of its hypotenuse is

(a) $\sqrt{32}$ cm          (b) $\sqrt{16}$ cm          (c) $\sqrt{48}$ cm          (d) $\sqrt{24}$ cm

**(62)** The mean of five numbers is 30. If one number is excluded, their mean becomes 28. The excluded number is:

(a) 28          (b) 30          (c) 35          (d) 38

**(63)** The class mark of the class 90–120 is:

(a) 90          (b) 105          (c) 115          (d) 120

**(64)** In a frequency distribution, the mid value of a class is 10 and the width of the class is 6. The lower limit of the class is:

(a) 6          (b) 7          (c) 8          (d) 12

**(65)** The digit in the tens place of a two digit number is 3 more than the digit in the units place. Let the digit at units place be b. Then the number is

(a) 11b + 30    (b) 10b + 30    (c) 11b + 3    (d) 10b + 3

**(66)** If two adjacent angles of a parallelogram are $(5x - 5)°$ and $(10x + 35)°$, then the ratio of these angles is

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

**(67)** Length of one of the diagonals of a rectangle whose sides are 10 cm and 24 cm is

(a) 25 cm    (b) 20 cm    (c) 26 cm    (d) 3.5 cm

**(68)** Find multiplicative inverse of $\left(-\dfrac{5}{9}\right)^{-99}$ is

(a) $\left(-\dfrac{5}{9}\right)^{99}$    (b) $\left(\dfrac{5}{9}\right)^{99}$    (c) $\left(\dfrac{9}{-5}\right)^{99}$    (d) $\left(\dfrac{9}{5}\right)^{99}$

**(69)** A cube of side 5 cm is painted on all its faces. It if is sliced into 1 cubic centimetre cubes, how many 1 cubic centimetre cubes will have exactly one of their faces painted?

(a) 27    (b) 42    (c) 54    (d) 142

**(70)** Number of factors of $(a + b)^2$ is

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

# MENTAL ABILITY

**(71)** Complete the series : 13, 24, 46, 90, 178, .........

(a) 354    (b) 266    (c) 364    (d) 344

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

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

**(73)** If the first three letters of the word COMPREHENSION are reversed, then the last three letters are added and then the remaining letters are reversed and added, then which letter will be exactly in the middle.?

(a) H    (b) N    (c) R    (d) S

**(74)** If the first and second letters in the word DEPRESSION were interchanged, also the third and the fourth letters, the fifth and the sixth letters and so on, which of the following would be the seventh letter from the right ?

(a) R    (b) O    (c) S    (d) None of these

**(75)** If in a certain code, HAT is 782, RABBIT is 681192. Then how will HABIT be coded as?

(a) 78139    (b) 78192    (c) 68192    (d) 78129

**(76)** In a certain code, ELEPHANT is written as TNPEAHLE, the CROCODILE will be written as?

(a) RCCOOIDEL    (b) ELCOOIDRC    (c) ELCIOODRC    (d) ELCOIODRC

**(77)** Manish ranked sixteenth from the top and twenty-nineth from the bottom among those who has passed an examination. Six boys did not participate in the examination and five failed in it. How many boys were there in the class?

(a) 40      (b) 44      (c) 50      (d) 55

**(78)** Roshan ranked 11th from the top and thirty one from the bottom in a class. How many students are there in the class?

(a) 42      (b) 43      (c) 41      (d) 40

**(79)** In the following questions which one of the four interchanges in signs and numbers would make the given equation correct? (3 ÷ 4) + 2 = 2

(a) + and ÷, 2 and 3          (b) + and ÷, 2 and 4

(c) + and ÷, 3 and 4          (d) No interchanges, 3 and 4

**(80)** If A stands for +, B stands for –, C stands for x, then what is the value of (10 C4) + (4 C 4) B 6?

(a) 60      (b) 56      (c) 50      (d) 20

**(81)** A child is looking for his father. He went 90 metres in the East before turning to his right. He went 20 metres before turning to his right again to look for his father at his uncle's place 30 metres from this point. His father was not there. From here he went 100 metres to the North before meeting his father in a street. How far did the son meet his father from the starting point?

(a) 80 metres      (b) 100 metres      (c) 140 metres      (d) 260 metres

**(82)** If A to the south of B and C is to the east of B, in what direction is A with respect to C?

(a) North-east      (b) North-west      (c) South-east      (d) South-west

**(83)** Find the missing number

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      9              41              24
72 ( 13 ) 28    48 ( ? ) 32     9 ( 9 ) 36
     60              23              12
```

(a) 12      (b) 15      (c) 17      (d) 18

**(84)** Find the mirror image.

D R E A M | ?

(a) MAEЯD      (b) MAERD      (c) MAEЯD      (d) MAEЯD

# Class VIII, IX & X
# Foundation Program
# NTSE / Olympiads



# Class XI & XII
# Classroom Program



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