



ISAT Practice Test

3

Time: 2 Hours

Maximum Marks: 336

CLASS-10

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:

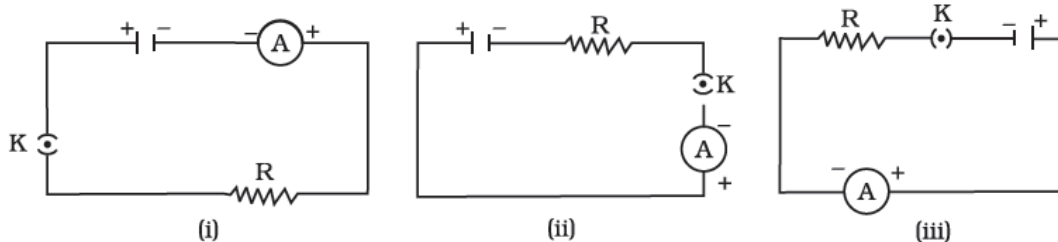
PHYSICS

- (1) 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
- (2) 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
- (3) 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

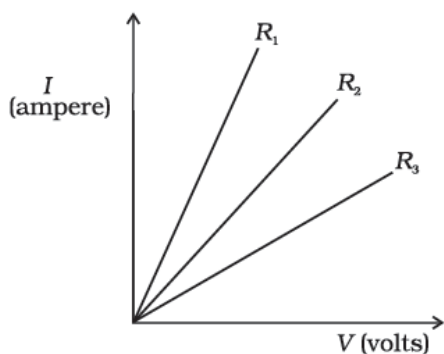
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- (4) Which of the following statement is not correct for an object moving along a straight path in an accelerated motion?
- (a) Its speed keeps changing
 - (b) Its velocity always changes
 - (c) It always goes away from the earth
 - (d) A force is always acting on it
- (5) A particle is moving in a circular path of radius r . The displacement after half a circle would be:
- (a) Zero
 - (b) πr
 - (c) $2r$
 - (d) $2\pi r$
- (6) Which of the following is a non-renewable source of energy?
- (a) Wood
 - (b) Sun
 - (c) Fossil fuels
 - (d) Wind
- (7) Choose the incorrect statement from the following regarding magnetic lines of field
- (a) The direction of magnetic field at a point is taken to be the direction in which the north pole of a magnetic compass needle points
 - (b) Magnetic field lines are closed curves
 - (c) If magnetic field lines are parallel and equidistant, they represent zero field strength
 - (d) Relative strength of magnetic field is shown by the degree of closeness of the field lines
- (8) Which of the following can make a parallel beam of light when light from a point source is incident on it?
- (a) Concave mirror as well as convex lens
 - (b) Convex mirror as well as concave lens
 - (c) Two plane mirrors placed at 90° to each other
 - (d) Concave mirror as well as concave lens
- (9) The laws of reflection hold good for
- (a) plane mirror only
 - (b) concave mirror only
 - (c) convex mirror only
 - (d) all mirrors irrespective of their shape
- (10) A person cannot see distinctly objects kept beyond 2 m. This defect can be corrected by using a lens of power
- (a) $+0.5\text{ D}$
 - (b) -0.5 D
 - (c) $+0.2\text{ D}$
 - (d) -0.2 D
- (11) The clear sky appears blue because
- (a) blue light gets absorbed in the atmosphere
 - (b) ultraviolet radiations are absorbed in the atmosphere
 - (c) violet and blue lights get scattered more than lights of all other colours by the atmosphere
 - (d) light of all other colours is scattered more than the violet and blue colour lights by the atmosphere

- (12) A cell, a resistor, a key and ammeter are arranged as shown in the circuit diagrams of Figure. The current recorded in the ammeter will be



- (a) maximum in (i) (b) maximum in (ii)
 (c) maximum in (iii) (d) the same in all the cases
- (13) What is the maximum resistance which can be made using five resistors each of $1/5 \Omega$?
- (a) $1/5 \Omega$ (b) 10Ω (c) 5Ω (d) 1Ω
- (14) A student carries out an experiment and plots the V-I graph of three samples of nichrome wire with resistances R_1 , R_2 and R_3 respectively (Figure.). Which of the following is true?



- (a) $R_1 = R_2 = R_3$ (b) $R_1 > R_2 > R_3$ (c) $R_3 > R_2 > R_1$ (d) $R_2 > R_3 > R_1$

CHEMISTRY

- (15) Which of the following are exothermic processes?
- (i) Reaction of water with quick lime
 (ii) Dilution of an acid
 (iii) Evaporation of water
 (iv) Sublimation of camphor (crystals)
- (a) (i) and (ii) (b) (ii) and (iii) (c) (i) and (iv) (d) (iii) and (iv)
- (16) Which of the following salts does not contain water of crystallisation?
- (a) Blue vitriol (b) Baking soda (c) Washing soda (d) Gypsum
- (17) Which of the following statements is correct about an aqueous solution of an acid and of a base?
- (i) Higher the pH, stronger the acid
 (ii) Higher the pH, weaker the acid
 (iii) Lower the pH, stronger the base
 (iv) Lower the pH, weaker the base
- (a) (i) and (iii) (b) (ii) and (iii) (c) (i) and (iv) (d) (ii) and (iv)

- (18) Out of the following, an example of matter which can be termed as fluid is:
(a) carbon (b) sulphur (c) oxygen (d) phosphorus
- (19) Which of the following represent the suitable conditions for the liquefaction of gases?
(a) low temperature, low pressure (b) high temperature, low pressure
(c) low temperature, high pressure (d) high temperature, high pressure
- (20) In order to prevent the spoilage of potato chips, they are packed in plastic bags in an atmosphere of:
(a) Cl_2 (b) H_2 (c) N_2 (d) O_2
- (21) Bee sting contains:
(a) an acidic liquid (b) a salt solution
(c) an alkaline liquid (d) an alcohol
- (22) The process of respiration is:
(a) an oxidation reaction which is endothermic
(b) a reduction reaction which is exothermic
(c) a combination reaction which is endothermic
(d) an oxidation reaction which is exothermic
- (23) One of the following is a medicine for indigestion. This is:
(a) sodium hydroxide (b) manganese hydroxide
(c) magnesium hydroxide (d) potassium hydroxide
- (24) An element is soft and can be cut with a knife. It is very reactive and cannot be kept open in the air. It reacts vigorously with water. The element is most likely to be:
(a) Mg (b) S (c) P (d) Na
- (25) In which of the following cases, cooking is very slow?
(a) Pressure cooker at sea level (b) Pressure cooker at higher altitude
(c) Open vessel at sea level (d) Open vessel at higher altitude
- (26) A solution reacts with zinc granules to give a gas which burns with a 'pop' sound. The solution contains:
(a) $\text{Mg}(\text{OH})_2$ (b) Na_2CO_3 (c) NaCl (d) HCl
- (27) Wasp stings can be treated with:
(a) baking soda (b) vinegar (c) washing soda (d) milk of magnesia
- (28) Which of the following non-metal is a liquid?
(a) carbon (b) sulphur (c) bromine (d) iodine

BIOLOGY

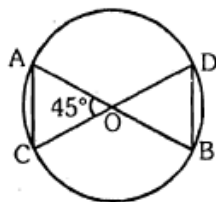
- (29) In which of the following groups of organisms, food material is broken down outside the body and absorbed?
(a) Mushroom, green plants, Amoeba
(b) Yeast, mushroom, bread mould
(c) Paramecium, Amoeba, Cuscuta
(d) Cuscuta, lice, tapeworm

- (30) In humans, the life processes are controlled and regulated by
(a) reproductive and endocrine systems
(b) respiratory and nervous systems
(c) endocrine and digestive systems
(d) nervous and endocrine systems
- (31) Junction between two neurons is called
(a) cell junction (b) neuro muscular junction
(c) neural joint (d) synapse
- (32) During deficiency of oxygen in tissues of human beings, pyruvic acid is converted into lactic acid in the
(a) cytoplasm (b) chloroplast (c) mitochondria (d) golgi body
- (33) In the list of organisms given below, those that reproduce by the asexual method are
(i) banana (ii) dog (iii) yeast (iv) Amoeba
(a) (ii) and (iv) (b) (i), (iii) and (iv) (c) (i) and (iv) (d) (ii), (iii) and (iv)
- (34) In a flower, the parts that produce male and female gametes(germ cells) are
(a) stamen and anther (b) filament and stigma
(c) anther and ovary (d) stamen and style
- (35) Which of the following is the correct sequence of events of sexual reproduction in a flower?
(a) pollination, fertilisation, seedling, embryo
(b) seedling, embryo, fertilisation, pollination
(c) pollination, fertilisation, embryo, seedling
(d) embryo, seedling, pollination, fertilisation
- (36) The filtration units of kidneys are called
(a) ureter (b) urethra (c) neurons (d) nephrons
- (37) The blood leaving the tissues becomes richer in
(a) carbon dioxide (b) water (c) heamoglobin (d) oxygen
- (38) Chromosomes are made up of
(a) DNA (b) protein
(c) DNA and protein (d) RNA
- (39) Which of these options are not a function of Ribosomes?
(i) It helps in manufacture of protein molecules
(ii) It helps in manufacture of enzymes
(iii) It helps in manufacture of hormones
(iv) It helps in manufacture of starch molecules
(a) (i) and (ii) (b) (ii) and (iii) (c) (iii) and (iv) (d) (iv) and (i)
- (40) Which of these is not related to endoplasmic reticulum?
(a) It behaves as transport channel for proteins between nucleus and cytoplasm
(b) It transports materials between various regions in cytoplasm
(c) It can be the site of energy generation
(d) It can be the site for some biochemical activities of the cell

- (41) Which one of the following is not a viral disease?
 (a) Dengue (b) AIDS (c) Typhoid (d) Influenza
- (42) Which one of the following diseases is caused by protozoans?
 (a) Malaria (b) Influenza (c) AIDS (d) Cholera

MATHEMATICS

- (43) If the HCF of 65 and 117 is expressible in the form $65m - 117$, then the value of m is
 (a) 4 (b) 2 (c) 1 (d) 3
- (44) The largest number which divides 70 and 125, leaving remainders 5 and 8, respectively, is
 (a) 13 (b) 65 (c) 875 (d) 1750
- (45) If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then the value of k is
 (a) 10 (b) -10 (c) 5 (d) -5
- (46) Given that two of the zeroes of the cubic polynomial $ax^3 + bx^2 + cx + d$ are 0, the third zero is
 (a) $-\frac{b}{a}$ (b) $\frac{b}{a}$ (c) $\frac{c}{a}$ (d) $-\frac{d}{a}$
- (47) The pair of equations $5x - 15y = 8$ and $3x - 9y = \frac{24}{5}$ has
 (a) one solution (b) two solutions
 (c) infinitely many solutions (d) no solution
- (48) The sum of the digits of a two-digit number is 9. If 27 is added to it, the digits of the number get reversed. The number is
 (a) 25 (b) 72 (c) 63 (d) 36
- (49) Which one of the following is not a quadratic equation?
 (a) $(x + 2)^2 = 2(x + 3)$ (b) $x^2 + 3x = (-1)(1 - 3x)^2$
 (c) $(x + 2)(x - 1) = x^2 - 2x - 3$ (d) $x^3 - x^2 + 2x + 1 = (x + 1)^3$
- (50) Which of the following equations has 2 as a root?
 (a) $x^2 - 4x + 5 = 0$ (b) $x^2 + 3x - 12 = 0$
 (c) $2x^2 - 7x + 6 = 0$ (d) $3x^2 - 6x - 2 = 0$
- (51) The 10th term of the AP : 5, 8, 11, 14, ... is
 (a) 32 (b) 35 (c) 38 (d) 185
- (52) In an AP if $a = -7.2$, $d = 3.6$, $a_n = 7.2$, then n is
 (a) 1 (b) 3 (c) 4 (d) 5
- (53) If in Fig., O is the point of intersection of two chords AB and CD such that $OB = OD$, then triangles OAC and ODB are



- (a) equilateral but not similar (b) isosceles but not similar
(c) equilateral and similar (d) isosceles and similar
- (54) D and E are respectively the points on the sides AB and AC of a triangle ABC such that $AD = 2$ cm, $BD = 3$ cm, $BC = 7.5$ cm and $DE \parallel BC$. Then, length of DE (in cm) is
(a) 2.5 (b) 3 (c) 5 (d) 6
- (55) The distance of the point P(2, 3) from the x-axis is
(a) 2 (b) 3 (c) 1 (d) 5
- (56) The area of a triangle with vertices A(3, 0), B(7, 0) and C(8, 4) is
(a) 14 (b) 28 (c) 8 (d) 6
- (57) The value of $(\sin 30^\circ + \cos 30^\circ) - (\sin 60^\circ + \cos 60^\circ)$ is
(a) -1 (b) 0 (c) 1 (d) 2
- (58) Given that $\sin \theta = \frac{a}{b}$, then $\cos \theta$ is equal to
(a) $\frac{b}{\sqrt{b^2 - a^2}}$ (b) $\frac{b}{a}$ (c) $\frac{\sqrt{b^2 - a^2}}{b}$ (d) $\frac{a}{\sqrt{b^2 - a^2}}$
- (59) Construction of a cumulative frequency table is useful in determining the
(a) mean (b) median
(c) mode (d) all the above three measures
- (60) In the following distribution:

Monthly income range (in Rs)	Number of families
Income more than Rs 10000	100
Income more than Rs 13000	85
Income more than Rs 16000	69
Income more than Rs 19000	50
Income more than Rs 22000	33
Income more than Rs 25000	15

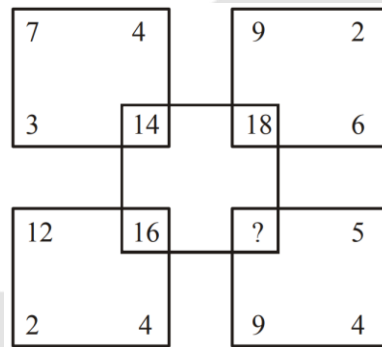
- the number of families having income range (in Rs) 16000 – 19000 is
(a) 15 (b) 16 (c) 17 (d) 19
- (61) Which of the following can be the probability of an event?
(a) -0.04 (b) 1.004 (c) $\frac{18}{23}$ (d) $\frac{8}{7}$
- (62) A card is selected at random from a well shuffled deck of 52 playing cards. The probability of its being a face card is
(a) $\frac{3}{13}$ (b) $\frac{4}{13}$ (c) $\frac{6}{13}$ (d) $\frac{9}{13}$
- (63) $\frac{1}{\sqrt{9} - \sqrt{8}}$ is equal to
(a) $\frac{1}{2}(3 - 2\sqrt{2})$ (b) $\frac{1}{3 + 2\sqrt{2}}$ (c) $3 - 2\sqrt{2}$ (d) $3 + 2\sqrt{2}$

- (64) Abscissa of a point is positive in
 (a) I and II quadrants (b) I and IV quadrants
 (c) I quadrant only (d) II quadrant only
- (65) If we multiply or divide both sides of a linear equation with a non-zero number, then the solution of the linear equation:
 (a) Changes
 (b) Remains the same
 (c) Changes in case of multiplication only
 (d) Changes in case of division only
- (66) Degree of the zero polynomial is
 (a) 0 (b) 1
 (c) Any natural number (d) Not defined
- (67) Which of the following is not a criterion for congruence of triangles?
 (a) SAS (b) ASA (c) SSA (d) SSS
- (68) Diagonals of a parallelogram ABCD intersect at O. If $\angle BOC = 90^\circ$ and $\angle BDC = 50^\circ$, then $\angle OAB$ is
 (a) 90° (b) 50° (c) 40° (d) 10°
- (69) If $AB = 12$ cm, $BC = 16$ cm and AB is perpendicular to BC, then the radius of the circle passing through the points A, B and C is:
 (a) 6 cm (b) 8 cm (c) 10 cm (d) 12 cm
- (70) The total surface area of a cube is 96 cm^2 . The volume of the cube is:
 (a) 8 cm^3 (b) 512 cm^3 (c) 64 cm^3 (d) 27 cm^3

MENTAL ABILITY

- (71) 1, 5, 7, 14, 18, 20, 40, 44, 46, ?
 (a) 48 (b) 50 (c) 52 (d) 92
- (72) Q 1 F S 2 E U 6 D W 21 C ?
 (a) Y 66 B (b) Y 88 B (c) Z 88 B (d) Y 44 B
- (73) How many such pairs of letters are there in the word CORPORATE each of which has as many letters in the same sequence between them in the word as in the english alphabet?
 (a) None (b) One (c) Two (d) Three
- (74) If it is possible to make a meaningful word with the third, fifth, eighth and tenth letters of the word 'DISTRIBUTE', which of the following will be the third letter of that word ? If no such word can be made give X as the answer.
 (a) S (b) R (c) E (d) X
- (75) In a certain code, 3456 is coded as ROPE, 15526 is coded as APPLE. Then how is 54613 coded as?
 (a) POEAR (b) PROEA (c) PEORA (d) RPOEA
- (76) In a certain code if FRIEND is written as DNEIRF. Then, what will be the code for DESERT?
 (a) TRESED (b) DSERET (c) TRSEED (d) TESERD

- (77) If a test score goes up 15% from x to 69, what was the previous test score?
 (a) 52 (b) 60 (c) 65 (d) 68
- (78) What will be the difference between the sum of the odd digits and the sum of the even digits in the number 857423
 (a) 0 (b) 1 (c) 2 (d) 4
- (79) If $5 \times 9 = 144$; $7 \times 8 = 151$; $4 \times 6 = 102$, then $2 \times 5 = ?$
 (a) 73 (b) 77 (c) 37 (d) 97
- (80) If P denotes \div , Q denotes \times , R denotes $+$ and S denotes $-$, then the value of $18 Q 12 P 4 R 5 S 6$ when simplified gives
 (a) 36 (b) 53 (c) 59 (d) 65
- (81) A,B,C and D are playing cards. A and B are partners. D faces towards North. If A faces towards west, then who faces towards south?
 (a) B (b) C (c) D (d) Data inadequate
- (82) Divya journeys 10 km to east then 10 km to south-west. He turns again and journeys 10 km to North-West. Which direction is he in from the starting point?
 (a) South (b) North (c) West (d) East
- (83) What number should replace the question mark?



- (a) 45 (b) 30 (c) 52 (d) 18
- (84) Find the mirror image

NEWS | ?

- (a) 2WEN (b) 2WEN (c) 2WEN (d) 2WEN

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