

CLASS-IX
SAMPLE PAPER
PAPER-1

Reg. No.

PAPER CODE: A

Time allowed : 2 hours

Maximum Marks : 240

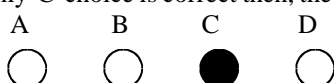
Name : _____

Please read the instructions in Question Booklet before answering the question paper.

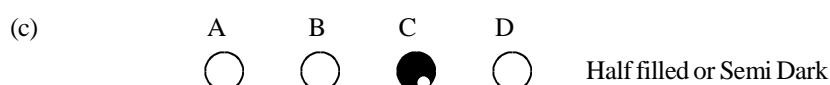
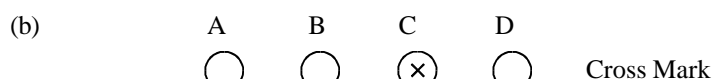
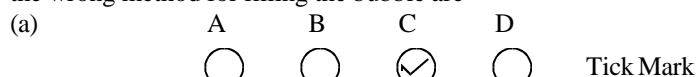
INSTRUCTIONS

01. The question paper has '00' printed pages. Please ensure that the copy of the question paper you have received contains all pages.
02. Before starting the paper, fill up the required details in the blank space provided in the answer sheet.
03. Write your name and Seven digit **Reg. No.** in the space provided at the top of this booklet.
04. The question paper consists of '60' objective type questions. Each question carry **4 marks** and all of them are compulsory.
05. Each question contains four alternatives out of which only **ONE** is correct.
06. There is **NEGATIVE** marking. **1 mark** will be deducted for each wrong answer.
07. Indicate the correct answer for each question by filling appropriate bubble in your answer sheet.
08. The answers of the questions must be marked by shading the circle against the question by dark **Black Ball point Pen** only.
09. For rough work, use the space provided at the bottom of each page. No extra sheet will be provided for rough work and you are not supposed to bring the same.
10. Use of **blank papers, clip boards, log tables, calculator, slide rule, mobile** or any other **electronic gadgets** in any form is "**NOT PERMISSIBLE**".
11. You must not carry mobile phone even if you have the same, give it to your Invigilator before commencement of the test and take it back from him/her after the exam.
12. The Answer Sheet will be checked through computer hence the answer of the questions must be marked by shading the circles against the question by dark **Black Ball point Pen** only.

For example if only 'C' choice is correct then, the correct method for filling the bubble is



the wrong method for filling the bubble are



The answer of the questions in wrong or any other manner will be treated as wrong.

USEFUL DATA

Take $g = 10 \text{ m/s}^2$ wherever required.

PHYSICS

- Q.1 When an apple falls from a tree :
- (1) only earth attracts the apple
 - (2) only apple attracts the earth
 - (3) both the earth and the apple attract each other
 - (4) none attracts each other
- Q.2 If a particle starting from rest has an acceleration that increases linearly with time as $a = 2t$, then the distance travelled in third sec will be :-
- (1) 9 m
 - (2) $\frac{8}{3}$ m
 - (3) $\frac{19}{3}$ m
 - (4) $\frac{11}{3}$ m
- Q.3 Binding energy of earth-moon system can be expressed as :
- (1) $GM_e M_m / 2r$
 - (2) $-GM_e M_m / r$
 - (3) $GM_e M_m / r$
 - (4) $-GM_e M_m / 2r$
- Q.4 Two projectiles A and B are projected with same speed at angles 30° and 60° to horizontal, then choose the wrong statement ? (symbols have their usual meaning)
- (1) $R_A = R_B$
 - (2) $H_B = 3H_A$
 - (3) $\sqrt{3} T_B = T_A$
 - (4) All of these
- Q.5 The ratio of the weight of a man in a stationary lift and in a lift accelerating downwards with a uniform acceleration 'a' is 3:2. The acceleration of the lift is-
- (1) $g/3$
 - (2) $g/2$
 - (3) g
 - (4) $2g$
- Q.6 A balloon has 5 g of air. A small hole is pierced into it. The air escapes at a uniform rate with a velocity of 4 cm s^{-1} . If the balloon shrinks completely in 2.5 second, then the average force acting on the balloon is
- (1) 2 dyne
 - (2) 50 dyne
 - (3) 8 dyne
 - (4) 8N
- Q.7 A long spring is stretched by 2 cm; its potential energy is U. If the spring is stretched by 10 cm, the potential energy stored in it will be :-
- (1) $U/25$
 - (2) $U/5$
 - (3) $5U$
 - (4) $25U$
- Q.8 The ratio of sound intensities of two waves of the same frequency is 1 : 16. Then the ratio of the amplitudes will be -
- (1) 1 : 2
 - (2) 1 : 4
 - (3) 1 : 8
 - (4) 1 : 16
- Q.9 A ball is allowed to fall from a height of 10 m. If there is 40% loss of energy due to impact, then after one impact ball will go upto :-
- (1) 10 m
 - (2) 8 m
 - (3) 4 m
 - (4) 6 m
- Q.10 The terms pitch, quality and loudness of sound are associated with the following, respectively –
- (1) Intensity, frequency and waveform
 - (2) Frequency, intensity and waveform
 - (3) Frequency, waveform and intensity
 - (4) Waveform, frequency and intensity

CHEMISTRY

- Q.11 A sample of pure water, irrespective of its source contains 11.1% hydrogen and 88.9% oxygen. The data supports
(1) law of constant proportions (2) law of conservation of mass
(3) law of reciprocal proportions (4) law of multiple proportions
- Q.12 In compound A, 1.00g nitrogen combines with 0.57 g oxygen. In compound B, 2.00g nitrogen combines with 2.24g oxygen. In compound C, these results obey the following law
(1) law of constant proportion (2) law of multiple proportion
(3) law of reciprocal proportion (4) law of partial pressure
- Q.13 The indivisibility of an atom was proposed by
(1) Rutherford (2) Dalton (3) Bohr (4) Einstein
- Q.14 Molecules of phosphorus and ammonia are respectively
(1) monoatomic and triatomic (2) monoatomic and diatomic
(3) tetra-atomic and triatomic (4) tetra-atomic and tetra-atomic
- Q.15 Rutherford's model of an atom could not explain its stability. This was overcome by another atomic model. The postulates of the new model of atom are
(i) an atom consists of a positively charged sphere and the electrons are embedded in it.
(ii) each shell or orbit corresponds to a definite energy. Therefore, these circular shell are also known as energy shells.
(iii) as long as the electrons revolves in the stationary orbit it neither radiates nor absorbs energy
(1) (i) and (ii) (2) (ii) and (iii) (3) (i) and (iii) (4) (i), (ii) and (iii)
- Q.16 Which experiment find out charge on the electron?
(1) Oil drop experiment (2) X-ray scattering experiment
(3) Cathode-ray experiment (4) Anode-ray
- Q.17 The increasing order (lowest first) for the values of e/m (charge /mass) is
(1) e, p, n, α (2) n, p, e, α (3) n, p, α, e (4) n, α, p, e
- Q.18 The total number of neutrons in dipositive zinc ions with mass number 70 is
(1) 34 (2) 40 (3) 36 (4) 38
- Q.19 Which of the following does not make sense?
(1) solids have fixed shape and fixed volume.
(2) we can easily compress a liquid but not a gas.
(3) solids have negligible kinetic energy of the particles
(4) property of diffusion is maximum in the gaseous state
- Q.20 Which is not an example of macromolecular colloids?
(1) Nylon (2) Plastics (3) Rubber (4) Soaps

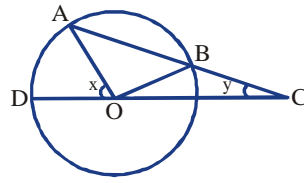
BIOLOGY

- Q.11 Detoxification site in the liver cell is
(1) Golgi apparatus (2) Free ribosomes (3) RER (4) SER
- Q.22 Photorespiration occurs in plant cells in
(1) Dictyosomes (2) Glyoxisomes (3) Peroxisome (4) Endoplasmic reticulum
- Q.23 Middle lamella is chemically formed of
(1) Cellulose (2) Hemicellulose (3) Pectin (4) Lignin
- Q.24 Protein present in the matrix of cartilage is known as
(1) Chondrin (2) Casein (3) Actin (4) Ossein
- Q.25 Which type of tissue is responsible for contraction that allow movement of organs or the entire body?
(1) Muscle tissue (2) Nervous tissue (3) Epithelial tissue (4) Connective tissue
- Q.26 Crossbreeding between different genera is
(1) Inter varietal (2) Interspecific (3) Intrageneric (4) Intergeneric
- Q.27 Warm blooded animals have
(1) Body temperature similar to climatic temperature
(2) Body temperature is always constant
(3) Blood is cold
(4) None of them
- Q.28 Connecting link between reptiles and bird is
(1) Dodo (2) Archaeopteryx (3) Rhea (4) Sphenodon
- Q.29 "Corals" belongs to the phylum
(1) Porifera (2) Coelenterata (3) Mollusca (4) Echinodermata
- Q.30 Vaccination is not available for
(1) Polio (2) Common cold (3) Tetanus (4) Tuberculosis

MATHEMATICS

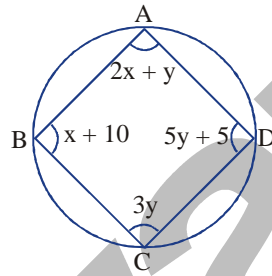
- Q.31 The value of $0.\overline{34} + 0.\overline{34}$
- (1) $\frac{68}{99}$ (2) $\frac{681}{990}$ (3) $\frac{34}{990}$ (4) None of these
- Q.32 The king, queen, jack of clubs are removed from a deck of 52 cards and then well shuffled. One card is selected at random from the remaining cards. What is the probability of getting a king
- (1) $\frac{13}{49}$ (2) $\frac{1}{39}$ (3) $\frac{3}{49}$ (4) $\frac{3}{52}$
- Q.33 A paper is in the form of a rectangle ABCD in which $AB = l$ and $BC = b$. A semicircular portion with BC as diameter is cut off. The area of the remaining paper is
- (1) $\frac{b(4l - \pi b)}{4}$ (2) $\frac{b(8l - \pi b)}{8}$ (3) $\frac{b(4l - \pi b)}{8}$ (4) $\frac{b(8l - \pi b)}{4}$
- Q.34 The diameter of a sphere is decreased by 25% by what percentage its surface area decreases
- (1) 25% (2) 43.75% (3) 43.50% (4) 50%
- Q.35 A polynomial of degree greater than 2 yields a remainder of 2 when divided by $(x - 1)$ and a remainder of 1 when divided by $(x - 2)$. If the polynomial is divided by $(x - 1)(x - 2)$ then the remainder is
- (1) $2x + 1$ (2) x (3) $3 - x$ (4) $1 - x$
- Q.36 If two chords of lengths $2a$ each, of a circle of radius R , intersect each other at right angles then the distance of their point of intersection from the centre of the circle is
- (1) $2\sqrt{R^2 - a^2}$ (2) $\sqrt{2(R^2 - a^2)}$ (3) $4\sqrt{R^2 - a^2}$ (4) $2(R^2 - a^2)$
- Q.37 The mean of 25 observations is 36. Out of these observations, if the mean of 13 observations is 32 and that of the last 13 observations is 40, the 13th observation is
- (1) 23 (2) 36 (3) 38 (4) 40
- Q.38 P is the product of all the prime numbers between 1 to 50. Then the number of Zeroes at the end of P are:
- (1) 1 (2) 10 (3) 0 (4) none of these
- Q.39 E and F are respectively the mid points of the non-parallel sides AD and BC of trapezium $ABCD$. Find the length of EF if $AB = 60$ cm and $CD = 50$ cm
- (1) 50 cm (2) 55 cm (3) 10 cm (4) 110 cm

- Q.40 In the given figure, AB is the chord of a circle with centre O. AB is produced to C such that BC = OB. CO is joined and produced to meet the circle in D. If $\angle ACD = y$ and $\angle AOD = x$, then which is true



- (1) $x = y + 25^\circ$ (2) $x = 3y$ (3) $y = 3x$ (4) $y = 2x$

- Q.41 Find the values of x and y respectively for the given figure

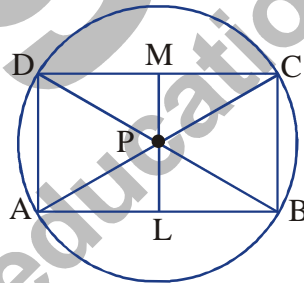


- (1) $40^\circ, 35^\circ$ (2) $40^\circ, 25^\circ$ (3) $25^\circ, 40^\circ$ (4) $35^\circ, 40^\circ$

- Q.42 If ABC is an equilateral triangle & D is the mid point of BC, ΔBDE is also an equilateral triangle. What is the ratio between ar (ABC) and ar (BDE)

- (1) 4 : 1 (2) 1 : 4 (3) 1 : 8 (4) 8 : 1

- Q.43 In the given figure $\angle BPC = 90^\circ$, $LM \perp CD$. If AB is 10 cm find BL. (P is centre)



- (1) $\frac{10}{3}$ cm (2) $\frac{20}{3}$ cm (3) 5 cm (4) None of these

- Q.44 Which one of the following cannot be the ratio of angles in a right angled triangle

- (1) 1 : 2 : 3 (2) 1 : 1 : 2 (3) 1 : 3 : 6 (4) 1 : 3 : 4

- Q.45 Water in a river, 3m wide and 1.2 m deep, is flowing at the rate of 20 km per hour. How much area will it irrigate in half an hour, if 10 cm of standing water is desired

- (1) 18000 m^2 (2) 360000 m^2 (3) 18000 m^3 (4) 285790 m^2

- Q.46 Find the probability that a leap year will have 53 Wednesday's

- (1) $\frac{1}{7}$ (2) $\frac{2}{7}$ (3) $\frac{3}{7}$ (4) 0

Q.47 If $\frac{x^2+1}{x} = 2\frac{1}{2}$, then $x - \frac{1}{x}$ is equals to

- (1) $\frac{9}{4}$ (2) $\pm \frac{3}{2}$ (3) $\pm \frac{\sqrt{5}}{2}$ (4) $7\frac{7}{8}$

Q.48 If the sum of the two numbers is 7 and the sum of their cubes is 133, find the sum of their squares

- (1) 29 (2) 10 (3) 30 (4) 45

Q.49 Three cubes each of side 6 cm are joined together side by side to form a cuboid. Find the surface area of the cuboid

- (1) 504 cm² (2) 648 cm² (3) 948 cm² (4) none of these

Q.50 Find the square root of $7 - 4\sqrt{3}$

- (1) $2 + \sqrt{3}$ (2) $\sqrt{2 + \sqrt{3}}$ (3) $7 - \sqrt{3}$ (4) $2 - \sqrt{3}$

MENTAL ABILITY

Directions (51 to 52) : What will come in the place of question mark in the following series?

Q.51 64, 36, 22, 15, ?, 9.75

- (1) 11.75 (2) 12.5 (3) 11.5 (4) 12.25

Q.52 114, 115, 107, 134, 70, ?

- (1) 140 (2) 195 (3) 35 (4) 150

Q.53 Forty boys are standing in a row facing the north. Amit is eleventh from the left and Deepak is thirty first from the right end of the row. How far will Shreya who is third to the right of Amit in the row, be from Deepak

- (1) 2nd (2) 3rd (3) 4th (4) 5th

Q.54 In a row of girls facing North, Reena is 10th to the left of Pallavi who is 21st from the right end. If Malini who is 17th from the left end, is fourth to the right of Reena, how many girls are there in the row?

- (1) 37 (2) 43 (3) 44 (4) Data inadequate

Q.55 Imagine that you are walking towards south. After sometime you turn left. Then again you turn left. After that you turn right and once again turn to the right. In which direction you are walking now?

- (1) South (2) East (3) West (4) North

Q.56 Kamla is between Mohan and Suresh. Ramesh is on the immediate Left of Suresh and Sohan is on the immediate right of the Mohan. All are standing facing South, then who is on the extreme right?

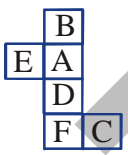




- (1) Mohan (2) Suresh (3) Ramesh (4) Sohan


Directions (57 to 58) : In each of the questions below are given two / three statements followed by some conclusions, numbered I, II, and so on. You have to take the given statements to be true even if they seem to at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

- Q.57 **Statements:** Some pillows are beds.
Some leaders are pillows.
All ministers are beds.
- Conclusions:** (I) Some pillows are not beds.
(II) No pillow is a minister.
(III) Some ministers are pillow.
(IV) Some leaders are not pillows.
- (1) Either (I) or (IV) follows (2) Neither (II) nor (III) follows
(3) Either (II) or (III) follows (4) Only (IV) and either (II) or (III) follows

- Q.58 **Statements:** Some bells are flowers.
Some cards are bells.
No cards are papers.
- Conclusions:** (I) Some bells are not papers.
(II) Some Papers are not bells.
(III) Some flowers are cards.
- (1) Only (I) follows (2) Only (I) and (II) follows
(3) Only (I), (II) and (III) follows (4) None follows

Directions (Q.59) : In each question an explanatory figure of dice is given. Study the figure and identify the correct dice formed by that figure.

- Q.59
- 
- (1)  (2)  (3)  (4) 

- Q.60 Which symbol will be opposite to (↕)
- 
- (1) ↑ (2) * (3) ◻ (4) #

ANSWER KEY

Q.1	3	Q.2	3	Q.3	1	Q.4	3	Q.5	1	Q.6	3	Q.7	4
Q.8	2	Q.9	4	Q.10	3	Q.11	1	Q.12	2	Q.13	2	Q.14	4
Q.15	2	Q.16	1	Q.17	4	Q.18	2	Q.19	2	Q.20	4	Q.21	4
Q.22	3	Q.23	3	Q.24	1	Q.25	1	Q.26	4	Q.27	2	Q.28	2
Q.29	2	Q.30	2	Q.31	2	Q.32	3	Q.33	2	Q.34	2	Q.35	3
Q.36	2	Q.37	2	Q.38	1	Q.39	2	Q.40	2	Q.41	2	Q.42	1
Q.43	3	Q.44	3	Q.45	2	Q.46	2	Q.47	2	Q.48	1	Q.49	1
Q.50	4	Q.51	3	Q.52	2	Q.53	3	Q.54	2	Q.55	1	Q.56	4
Q.57	3	Q.58	1	Q.59	4	Q.60	1						

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