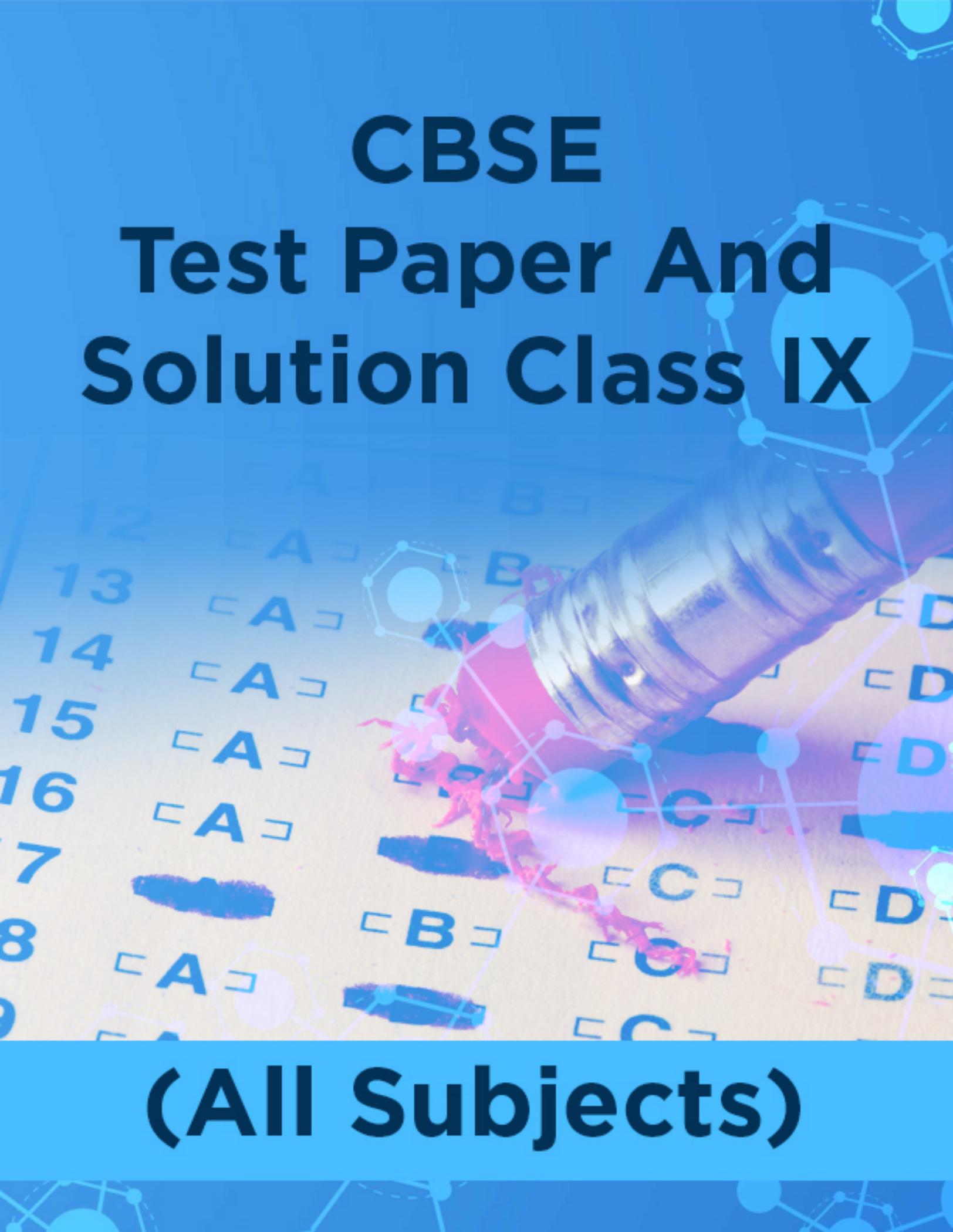


CBSE Test Paper And Solution Class IX



(All Subjects)

INDEX

CLASS - IX

S.NO.	SUBJECT NAME	PAGE NO.
-------	--------------	----------

CBSE TEST PAPERS

1.	Test Paper # 1 (Mathematics)	1 - 2
2.	Test Paper # 2 (Mathematics)	3 - 5
3.	Test Paper # 2 (Science and Technology)	6 - 7
4.	Test Paper # 2 (Science and Technology)	8 - 9
5.	Test Paper # (Social Science)	10 - 12
6.	Test Paper # 2 (Social Science)	13 - 15
7.	Hints & Solutions # 1(Mathematics)	16 - 21
8.	Hints & Solutions # 2(Mathematics)	22 - 28
9.	Hints & Solutions # 1 (Science and Technology)	29 - 35
10.	Hints & Solutions # 2(Science and Technology)	36 - 39
11.	Hints & Solutions # 1 (Social Science)	40 - 45
12.	Hints & Solutions # 2 (Social Science)	46 - 52

GENERAL INSTRUCTIONS FOR CBSE TEST PAPERS 1 & 2

SUBJECT : MATHEMATICS

CLASS - IX

Time : 3 Hr.

Max. Marks : 80

GENERAL INSTRUCTION

1. All questions are compulsory.
2. The questions paper consists of 30 questions divided into the four sections A,B,C and D. Section A contains 10 questions of 1 mark each, section B is of 05 questions of 2 marks each, section C is of 10 questions of 3 marks each and section D is of 05 questions of 6 marks each.
3. Write the serial number of questions before attempting.
4. In questions of construction, the drawing should be neat and exactly as per the given measurements.
5. Use of calculator is not permitted. However, you may ask for mathematical tables.

INSTRUCTIONS :

Section A : Q 1 to Q . 10 carries 1 mark each.

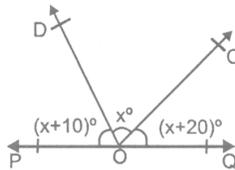
Section B : Q 11 to Q. 15 carries 2 marks each.

Section C : Q 16 to Q. 25 carries 3 marks each.

Section D : Q 26 to Q. 30 carries 6 marks each.

SECTION # A

1. Express $0.\overline{05}$ as a vulgar fraction.
2. Find the value of a if $(x - a)$ is a factor of the polynomial $x^4 - a^2x^2 + 3x - 6a$.
3. The cost of a book is one third the cost of a pen. Write a linear equation in two variables to represent this statement.
4. Find out how many non zero integer solutions can be possible for $3x + 2y = 18$.
5. In which quadrant do the following points lie ?
(i) $(-3, 2)$ (ii) $(2.5, 0)$
6. The difference of two supplementary angles is 40° , find the angles.
7. In the given figure, OP and OQ are opposite rays. Find x.



8. The class marks of distribution are : 6, 10, 14, 18, 22, 26, 30. Find the class size and the class interval.
9. If $\frac{\sqrt{7}-1}{\sqrt{7}+1} - \frac{\sqrt{7}+1}{\sqrt{7}-1} = a + b\sqrt{7}$, find the values of a and b.
10. Find the remainder when $x^{51} + 51$ is divided by $x + 1$.

SECTION # B

11. Plot the points $A(2, 0)$, $B(2, 2)$, $C(0, 2)$ and draw the line segments OA, AB, BC and CO. What figure do you obtain ?
12. Using factor theorem, show that $a - b$ is the factor of $a(b^2 - c^2) + b(c^2 - a^2) + c(a^2 - b^2)$
13. Three cubes each of side 6 cm are joined end to end. Find the surface area of the resulting cuboids.
14. The mean of 13 observation is 14. If the mean of the first 7 observation is 12 and that of last 7 observation is 16, find the 7th observation.
15. Find x^2 if $x = \frac{\sqrt{\sqrt{5}+2} + \sqrt{\sqrt{5}-2}}{\sqrt{\sqrt{5}+1}}$.

SECTION # C

16. Factorise : $p^2 + pq + \frac{q^2}{4} + 1 + 2p + q$
17. Let A and B are the remainder when the polynomial $y^3 + 2y^2 - 5ay - 7$ and $y^3 + ay^2 - 12y + 6$ are divided by $y + 1$ and $y - 2$ respectively. If $2A + B = 6$ then find the value of a.
18. If the work done by a body on application of a constant force is directly proportional to the distance traveled by the body. Express this in the form of an equation in two variables and draw the graph of the same by taking the constant forces as 5 units. Also read from the graph the work done when the distance traveled by the body is (i) 2 units (ii) 0 units.
19. Prove that the sum of the three sides of a triangle is greater than the sum of its three median.
20. Construct a triangle ABC in which $BC = 4.5$ cm, $\angle B = 45^\circ$ and $AB - AC = 2.5$ cm.
21. The perimeter of a triangle is 36 cm and its sides are in the ratio 3 : 4 : 5. Find the area of the triangle.
22. A park in the shape of a quadrilateral ABCD has $\angle C = 90^\circ$. $AB = 18$ m, $BC = 24$ m, $CD = 10$ m and $AD = 16$ m. How much area does it occupy ?
23. A solid cylinder has a total surface area 462 sq. cm. Its curved surface area is one-third of the total surface area. Find the volume of the cylinder.
24. The record of a weather station shows that out of the past 250 consecutive days, its weather forecasts were correct 175 times..
 (i) What is the probability that on a given day it was correct ?
 (ii) What is the probability that it was not correct on a given day ?
25. Plot the points $A(0, 5)$, $B(8, 0)$, $(8, 5)$ and join them. What figure do you obtain ?

SECTION # D

26. Prove that $(a + b)^3 + (b + c)^3 + (c + a)^3 - 3(a + b)(b + c)(c + a) = 2(a^3 + b^3 + c^3 - 3abc)$
27. In figure, ABC is a triangle, D is the mid-point of AB, P is any point on BC. Line CQ is drawn parallel to PD to intersect AB at Q. PQ is joined. Show that $\text{ar}(\triangle ABP) = \frac{1}{2} \text{ar}(\triangle ABC)$.
28. O_1 and O_2 are the centres of two congruent circles intersecting each other at points C and D. The line joining their centres intersects the circles in points A and B such that $AB > O_1O_2$. If $CD = 6$ cm and $AB = 12$ cm, determine the radius of either circle.
29. Students of a school stages a rally for cleanliness campaign. They walked through the lanes in two groups. One group walked through the lanes AB, BC and CA; while the other through AC, CD and DA. Then they cleaned the area enclosed within their lanes. If $AB = 9$ m, $BC = 40$ m, $CD = 15$ m, $DA = 28$ m and $\angle B = 90^\circ$, which group cleaned more area and by how much ? Find the total area cleaned by the students.
30. Draw a Histogram and frequency polygon from the following data :

Class Interval	21-24	26-29	31-34	36-39	41-44	46-49
Class frequency	30	24	52	28	46	10

TEST PAPER # 2

INSTRUCTIONS :

Section A : Q. 1 to Q. 10 carry 1 mark each.

Section B : Q. 11 to Q. 15 carry 2 marks each.

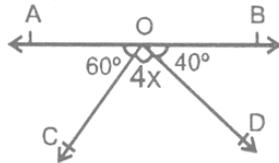
Section C : Q. 16 to Q. 25 carry 3 marks each.

Section D : Q. 26 to Q. 30 carry 6 marks each.

SECTION # A

Directions : Answer the questions (1 to 10)

- Express $0.\overline{418}$ as a vulgar fraction.
- Find the zero of the polynomial in each of the following cases :
 $p(x) = cx + d$, $c \neq 0$, c, d are real numbers.
- Find a value for a so that each of the following equations may have $x = 1, y = 1$ as a solution :
 $3x + ay = 6$
- In supplementary angles one is twice the other. Find the angles.
- In the given figure, AOB is a line, determine x .



- ABCD is a parallelogram. If the two diagonals are equal, find the measure of $\angle ABC$.
- Find the lateral surface area of a cube of edge 20 m.
- The mean of 10, 12, 16, 20, p and 26 is 17. Find the value of p .
- Which of the following points lie on the x-axis >
(i) (1, 1), (ii) (1, 0), (iii) (0, 1) (iv) (0, 0)
- Calculate the mean of all possible factor of 10.

SECTIONS # B

- Simplify $\frac{7\sqrt{3}}{\sqrt{10+\sqrt{3}}} - \frac{2\sqrt{5}}{\sqrt{6+\sqrt{5}}} - \frac{3\sqrt{2}}{\sqrt{15+3\sqrt{2}}}$
- Determine the number of sides of polygon whose exterior and interior angles are in the ratio 1 : 5.
- Plot the points A(4, 4) and B(-4, 4) and join the lines OA, OB and BA. What figure do you obtain ?
- The taxi fare in a city is as follows. For the first kilometre, the fare is Rs. 8 and for the subsequent distance it is Rs. 5 per km. Taking the distance covered as x km. and the total fare as Rs. y , write a linear equation for this information and draw its graph.
- Find the area of triangle two sides of which are 16 cm and 22 cm and perimeter is 64 cm.

SECTION # C

16. Two regular polygons are such that the ratio between their number of sides is 1 : 2 and the ratio of measures of their interior angles is 3 : 4. Find the number of sides of each polygon.
17. Construct a triangle ABC whose perimeter is 12 cm, $\angle B = 60^\circ$ and $C = 45^\circ$
18. How many spherical lead shots each 4.2 cm in diameter can be obtained from a rectangular solid lead with dimensions 66 cm, 42 m and 21 m?

19. Find the mean of each of the following distributions :

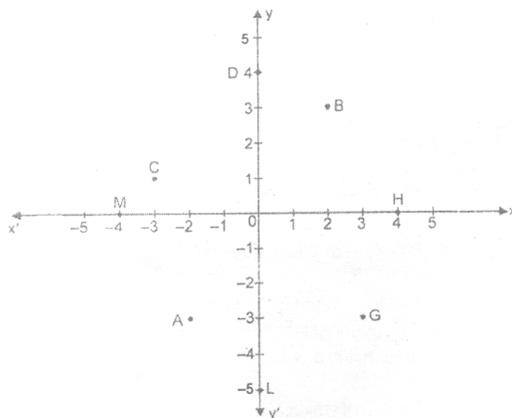
x:	10	15	20	25	30	35	40
f:	4	6	8	18	6	5	3

20. An insurance company selected 2000 drivers at random (i.e., without any preference of one driver over another) in a particular city to find a relationship between age and accidents. The data obtained are given in the following table :

Age of drivers (in years)	Accidents in one yeasr				
	0	1	2	3	Over 3
18 - 29	440	160	110	61	35
30 - 50	505	125	60	22	18
Above 50	360	45	35	15	9

Find the probabilities of the following events for a driver chosen at random form the city :

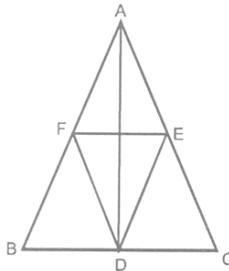
- (i) being 18 - 29 years of age and having exactly 3 accidents in one year.
- (ii) being 30 - 50 years of age and having one or more accidents in a year.
- (iii) having no accident in one year.
21. Factorise :
 $y^3 - 7y + 6$
22. See the given figure and write the following :



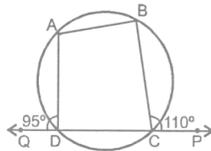
- (i) The point identified by the coordinates of (-2, -3).
 - (ii) The point identified by the coordinates of (3, -3).
 - (iii) The abscissa of point D.
 - (iv) The abscissa of the point H.
 - (v) The coordinates of the point L.
 - (vi) The coordinates of the point M.
23. Find the area of quadrilateral PQRS whose sides are 9 m, 40 m, 28 m and 15 m respectively and the angle between first two sides is a right angle.
24. The diameter of a sphere is 42 cm. It is melted and drawn into a cylindrical wire of 28 cm diameter. Find the length of the wire.
25. Sunita has a piece of land which is in the shape of a rhombus. She wants her one daughter and one son to work on the land and produce different crops to suffice the needs of their family. She divided the land in two equal parts. If the perimeter of the land is 400 m and one of the diagonal is 160 m, how much area each of them will get >

SECTION # D

26. In the given figure, $\triangle ABC$ is isosceles with $AB = AC$. D, E and F are respectively the mid-points of sides BC, CA and AB. Show that the line segment AD is perpendicular to the line segment EF and is bisected by it.



27. ABCD is a rhombus and AB is produced to E and F such that $AE = AB = BF$. Prove that ED and FC are perpendicular to each other.
28. Prove that the sum of either pair of opposite angles of a cyclic quadrilateral is 180° .
Using the above, do the following :
In the given figure ABCD is a cyclic quadrilateral.
Side CD is produced on both sides such that $\angle BCP = 110^\circ$ and $\angle ADQ = 95^\circ$
Find the value of $\angle A$ and $\angle B$.



29. If $x^3 + mx^2 + nx + 6$ has $x - 2$ as a factor and leaves a remainder 3, when divided by $x - 3$, find the values of m and n.
30. Plot a cumulative frequency diagram for the following distribution :

C.I.	0-9	10-19	20-29	30-39	40-49	50-59	60-69
Frequency	5	15	20	23	17	11	9

GENERAL INSTRUCTIONS FOR CBSE TEST PAPER 1 & 2

SUBJECT : SCIENCE AND TECHNOLOGY

CLASS - IX

Time : 2 1/2 Hr.

Max. Marks : 60

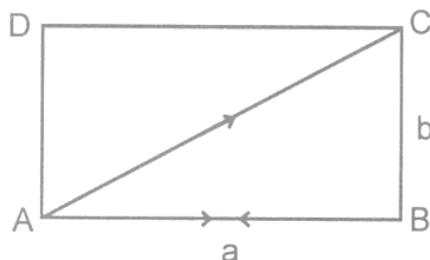
GENERAL INSTRUCTION

1. The question paper comprises of two Section A and B. Attempt both the Sections.
2. The candidates are advised to attempt all the questions of Section A and Section B separately.
3. All questions are compulsory.
4. Marks allocated to each question are indicated against it.
5. Question number 1 to 6 in Section A and 19 to 21 in Section B are very short answer question. These are to be answered in one word or one sentence only.
6. Question number 7 to 12 in Section A and 22 to 24 in Section B are short answer questions. These are to be answered in about 30-40 words each.
7. Question number 13 to 16 in Section A and 25, 26 in Section B are also short answer questions. These are to be answered in about 40-50 words each.
8. Question number 17 to 18 in Section A and 27 in Section B are long answer questions. These are to be answered in about 70 words each.

TEST PAPER # 1

SECTION # A

1. Write the formula for distance covered in n^{th} second. [1]
2. Convert 1 radian (c) in to degree ($^{\circ}$) [1]
3. Define Newton's second law of motion. [1]
4. Sponge is considered as solid yet we are able to compress it. Why? [1]
5. What is the meaning of 15% solution of NaCl? [1]
6. Write the names of gases which can be separated from air by fractional distillation. [1]
7. Define scalar and vector quantities and given two examples of each. [2]
8. A body moves from A to B and come back to A and then goes to C point. Find distance and displacement of the body. [2]



9. Convert 1 KWh into Joule.
10. Write the two reasons of using ultrasonic waves is SONAR [2]
11. (a) Write the conditions to liquefy atmospheric gases [2]
(b) What do LPG and CNG stand for? [2]
12. The mass number of an element is 63. It contains 29 electrons. What is the number of protons and neutrons in its nucleus? Write the electronic configuration of the element? [2]
13. Two bodies A and B having mass m and $2m$ respectively are kept at a distance d apart. Where should a small particle be placed so that the net gravitational force on it due to the bodies A and B is zero? [3]

14. A bullet of mass 10 g is fired from a gun of mass 5.0 kg. If the velocity of bullet is 250m/s. Find the recoil velocity of the gun. [3]
15. Calculate the weight of iron which is converted into its oxide by the action of 18g of steam. [3]
16. (a) Define the term mole.
 (b) If 1 g of carbon contains x atoms, what will be the number of atoms in 1 g of magnesium ?
 [C = 12u, Mg = 24u] [3]
17. Prove mathematically that the mechanical energy of a freely falling body remains constant. [5]
18. (a) On heating, potassium chlorate decomposes to potassium chloride and oxygen. In one experiment 30g of potassium chlorate generates 14.9g of potassium chloride and 9.6g of oxygen. What mass of potassium chlorate remains unrecompensed ?
 (b) Write two characteristic properties of nucleus. Compare these with the properties of an electron. [5]

SECTION # B

19. What do you mean by semiautonomous cell organelles ? [1]
20. Which tissue is responsible for the outer most covering in animals > [1]
21. What are acute diseases ? Name any three acute diseases. [1]
22. Draw a well labelled diagram of plant cell. [2]
23. Explain the main characteristic of phylum thallophytic. Write any two groups included in it. [2]
24. Write the difference between blood, lymph and serum. [2]
25. Fertilizers which are used in farming are good and bad both, explain why ? [3]
6. Write down four main differences between prokaryotic and eukaryotic cells. [3]
27. Write the difference between striated, non striated and cardiac muscle ? [5]

TEST PAPER # 2

SECTION # A

1. Can the internal forces acting among the parts of a system change the linear momentum of the system ? [1]
2. In which of the three media-air, water or steel does sound travel the fastest ? [1]
3. A particle is moving with a uniform velocity. What is its acceleration ? [1]
4. State two characteristics of matter demonstrated by : [1]
(a) diffusion (b) Brownian motion
5. Define valence shell. [1]
6. What are the fourth and fifth states of matter ? [1]
7. If a bulb of 100 W is lit for 6 hours, how much electric energy would be consumed ? [2]
8. A car moves through 10 km at a speed of 50 km/h and the next 10 km at a speed of 40 km/h. Calculate its average speed. [2]
9. A dog barks in a park and hear its echo after 2.5 s. If the sound of its bark got reflected by a nearby building, find the distance between the dog and the building. Take the speed of sound in air as 340 m/s. [2]
10. A man pushes a box of 50 kg with a force of 200 N. What will be the acceleration of the box due to this force ? What would be the acceleration if the mass is halved ? [2]
11. Describe the drawbacks of Rutherford's atomic model. [2]
12. Differentiate between solid, liquid and gas on the basis of rigidity and compressibility ? [2]
13. How much momentum will a dumb-bell of mass 15 kg transfer to the floor if it falls from a height of 19.6 m ? (Take $g = 9.8 \text{ m/s}^2$) [3]
14. Derive the first and second equation of motion [3]

15. Write the constituents of gun powder. How can you separate different constituents of gun powder ? [3]
16. Which method is used for the separation of a mixture of alcohol and water. Draw a well labelled diagram of the apparatus used in above separating technique. [3]
17. Explain the working of human ear with the help of a diagram [5]
18. (a) The average atomic mass of sample of element X is 16.2 u. What are the percentage of isotopes $^{16}_8\text{X}$ and $^{18}_8\text{X}$ is the sample ?
- (b) Name an element whose nucleus does not contain any neutrons.
- (c) Hydrogen has three isotopes written as :
- $^1_1\text{H}, ^2_1\text{H}, ^3_1\text{H}$
- Explain why these isotopes have almost identical chemical properties. [5]

SECTION # B

19. What are chronic disease ? Write the three name of chronic diseases. [1]
20. In plant which tissue is responsible for growth ? [1]
21. Write the name of substance. Which is responsible for ozone layer depletion ? [1]
22. Define the term hermaphrodite. Give two examples. [2]
23. Describe the "Green house effect". [2]
24. Write the difference between mixed cropping and Inter cropping. [2]
25. Draw an outline of Echiler classification and write down the characteristic features of bryophyte. [3]
26. Write the three main difference between animal cell and plant cell. [3]
27. Write in brief about the five kingdom as explained in 'Five kingdom classification'. [5]

GENERAL INSTRUCTIONS FOR CBSE TEST PAPERS 1 & 2

SUBJECT : SOCIAL SCIENCE

CLASS - IX

Time : 3 Hr.

Max. Marks : 80

GENERAL INSTRUCTIONS

1. There are 29 questions in all. All questions are compulsory.
2. Questions from serial number 1 to 10a are 1 mark questions.
Answer to these questions may be from one word to one sentence.
3. Questions from serial number 11 to 18 are 3 marks questions
Answers to these questions should not exceed 80 words each.
4. Questions from serial number 19 to 28 are 4 marks questions.
Answers to these questions should not exceed 100 words each.
5. Questions No. 29 is map question. Attach the map inside your answer book.

TEST PAPER # 1

1. Name of the first Indian cricket club. When was it established

OR

What is Gandhian Cap ?

2. Give the extent of India in latitudes and longitudes
3. What does the 'breaking of monsoon' mean ?
4. Why are Himalayan rivers called Perennial rivers ?
5. Explain the term 'universal adult franchise'.
6. What is EVM ?
7. Name the three categories of ministers
8. What are the functions of FCI ?
9. What is food security ?
10. What is poverty ?

Below are given three groups A, B & C of questions 11 and 12. Select any one group for answering these two questions.

GROUP - A

11. The introduction of railways had an adverse impact on the forest. Justify by giving examples.
12. Who were Kalangs ? Mention any four characteristics of this community ?

GROUP - B

11. Explain the major characteristics of pastoral nomadism.
12. The pastoral groups have been sustained by a careful consideration of a host of factors. Explain these factors.

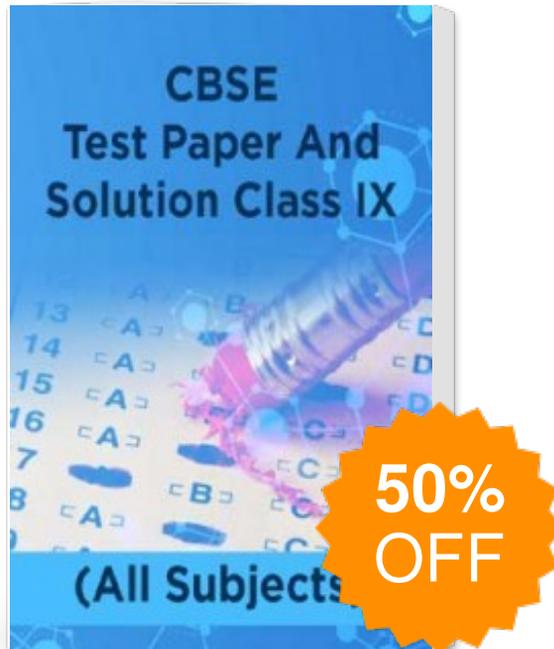
GROUPS - C

11. Who was Captain Swing ? What did the name symbolise or represent ?
12. Why were threshing machines opposed by the poor in England ?
- 13.1 What was Rabindranath Tagore's opinion regarding the national dress ?

OR

- 13.2 How was the cricket used by the Britishers to spread their policy of racism ?
14. Distinguish between : Evergreen and deciduous forests.
15. What are the Fundamental Rights guaranteed in our Constitution ?
16. In which field do you think India can build the maximum employment opportunity ? Explain ? Explain.
17. What are the major objectives of Prime Minister Rozgar Yozana ?
18. How is Lok Sabha more powerful than Rajya Sabha ?
19. Who was Napoleon ? Mention any two steps taken by him to modernise France. Explain the racial policy of Hitler or Nazis.

CBSE Test Paper And Solution Class IX (All Subjects)



Publisher : Faculty Notes

Author : Panel Of Experts

Type the URL : <http://www.kopykitab.com/product/11456>



Get this eBook