

HOLIDAY HOMEWORK : CLASS IX : MATHEMATICS

Complete all the NCERT exercise Questions of chapter-1 and the following questions:

1. Simplify: $\sqrt{252} - 5\sqrt{6} + \sqrt{294} - 3\sqrt{\frac{1}{6}}$
2. Simplify: $\sqrt[4]{81} - 8\sqrt[3]{216} + 15\sqrt[5]{32} + \sqrt{225}$
3. Express $\frac{3}{\sqrt{5}-\sqrt{2}+\sqrt{5}}$ with a rational denominator.
4. Find the value of a and b.
(i) $\frac{\sqrt{2}+\sqrt{3}}{3\sqrt{2}-2\sqrt{3}} = a - b\sqrt{6}$ (ii) $\frac{7+\sqrt{5}}{7-\sqrt{5}} - \frac{7-\sqrt{5}}{7+\sqrt{5}} = a + 7\sqrt{5}b$
5. Simplify: (i) $\frac{3\sqrt{2}}{\sqrt{6}-\sqrt{3}} - \frac{4\sqrt{3}}{\sqrt{6}-\sqrt{2}} + \frac{2\sqrt{3}}{\sqrt{6}+2}$ (ii) $\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}} + \frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}$
6. Find the simplest R.F. of the following: (i) $2 + \sqrt{7 + 2\sqrt{10}}$ (ii) $\sqrt{3} + \sqrt{8 + 2\sqrt{15}}$
7. Find the value of : (i) $\frac{2(\sqrt{2}+\sqrt{6})}{3\sqrt{2}+\sqrt{3}}$ (ii) $\frac{\sqrt{(\sqrt{5}+2)}+\sqrt{(\sqrt{5}-2)}}{\sqrt{(\sqrt{5}+1)}} - \sqrt{3 - 2\sqrt{2}}$
8. If $x = \frac{1}{2-\sqrt{3}}$, find the value of $x^3 - 2x^2 - 7x + 5$
9. If $x = \frac{\sqrt{a+2b} + \sqrt{a-2b}}{\sqrt{a+2b} - \sqrt{a-2b}}$, prove that $bx^2 - ax + b = 0$
10. If $a^x = b$, $b^y = c$ and $c^z = a$. prove that $xyz = 1$
11. If $a^x = b^y = c^z$ and $b^2 = ac$, prove that $y = \frac{2xz}{x+z}$
12. If $abc=1$, show that: $\frac{1}{1+a+b^{-1}} + \frac{1}{1+b+c^{-1}} + \frac{1}{1+c+a^{-1}} = 1$
13. If $25^{x-1} = 5^{2x-1} - 100$, find x.
14. If $2^x = 3^y = 12^z$, show that $\frac{1}{z} = \frac{1}{y} + \frac{2}{x}$
15. Simplify: $\frac{16 \times 2^{n+1} - 4 \times 2^n}{16 \times 2^{n+2} - 2 \times 2^{n+2}}$
16. Represent $\sqrt{8.5}$ on number line by semicircle method.
17. Convert the following recurring decimals to $\frac{p}{q}$ form: (i) 39.46666..... (ii) -2.676767...
18. Visualise 3.777.... on the number line upto 4 places of decimal.
19. If $a = 7 - 4\sqrt{3}$ find the value of $\sqrt{a} + \frac{1}{\sqrt{a}}$
20. Rewrite the following irrational numbers in ascending order:
 $\sqrt[3]{12}, \sqrt{80}, \sqrt[4]{20}, \sqrt[6]{25}, \sqrt[12]{112}$

Holiday Homework STD IX

(1) Write an article on 'Assets of Modern World Boon or Bane' in not more than 150 words.

(2) Education is the potential instrument of a person's mental and moral make-up. The History of civilization bears testimony to the fact that, man a wild animal, has built a glorious heritage of culture, art, science, philosophy and religion. Write an article in not more than 150 words.

(3) Write a story in 200-250 words using the following clues:

(a) Today was an extraordinary morning of school for Jeff. He woke up late, and took his shower, and got on his bus to go to school.....

(b) Long ago there lived a little boy Sammy. He was a good boy. He was good in studies, obedient to his parents, more intelligent than many other boys in his class and kind to everyone.....

(4) You are Shweta Barik, paid a visit to an exhibition on Sunday. Record your experience by preparing a diary entry on that day in not more than 150 words.

(5) You are Koshal. Write Your Diary entry about travelling in a crowded bus (words limit-150)

PHYSICS

1. What is distance? Write its S I unit.
2. What is displacement? Write its S I unit.
3. What is speed? Write its S I unit.
4. What is velocity? Write its S I unit.
5. What is acceleration? Write its S I unit.
6. Define scalar quantity. Write four examples of scalar quantity.
7. Define vector quantity. Write four examples of vector quantity.
8. A body is moving on a circular path of radius 42m. Find the distance travelled and displacement if it completed 3 and 14 revolution on the circular path.
9. A car is moving with velocity 54 km/h. After 20 seconds its velocity changed to 90 km/h. Find its acceleration.
10. Write three differences between speed and velocity.

CHEMISTRY

1. Which of the following are matters? Chair, air, love, smell, almonds, thought, cold, cold drinks, smell of perfumes
2. What are the characteristics of particles of matter?
3. Give reasons why the smell of hot sizzling food reaches you several meters away but to get the smell of cold food you have to go close?
4. A diver is able to cut through water in a swimming pool, Which properties of matter does its observation?
5. What are the conditions for something to be called matter?
6. What is the scientific name of the particles which make up matter.
7. When an incense stick burned in one corner of a room its fragrance spreads whole the room quickly, Which characteristics of particles of matter is illustrated by this observation?
8. Name two processes which provide the best evidence for motion of particles in matter.
9. Describe an activity to show that particles of matter are very small.
10. Describe an activity to show that particles of matter have spaces between them.

BIOLOGY

1. Lal has been cultivating wheat crop year after year in the same field. He then observed a decline in the yield in spite of best inputs. Give reason for the decline in the wheat yield. What would you suggest him for the best yield?
2. You are going to a market place where you see organic foods and conventional foods. Which food would you buy? Give reason.
3. In vegetable market you can see varieties of different vegetables such as tomatoes, potatoes, chilies, capsicum etc
 - a) What is the need of producing varieties of vegetables?
 - b) Give the name of branch of science which deals with the crop variety improvement.
 - c) What are the steps included in the methods used by plant breeders to produce varieties?
4. Make a list of weeds and insect pests in the field by visiting a weed infested field. Write the control measures of these pests.
5. Why is irrigation of crops essential? Mention the harmful effects of excessive irrigation.
6. Compare different cropping patterns.
7. Cultivation practices and crop yield are related to environmental conditions—Explain.
8. Discuss why the pesticides are used in very accurate concentration and at very appropriate time.
9. Describe fertilizers and compare them with bio fertilizers and composts.
10. Discuss in brief different ways of incorporating desirable characteristics into crop

varieties.

SANSKRIT

अधोलिखितानिशाब्दरूपाणिधातुरूपाणि च उत्तरपुस्तिकायां लिखत

शाब्दरूपाणि – बालक, लता, मुनि, नदी, फल, वारि, तत्, किम्, अस्मत्, युष्मत्

धातुरूपाणि- पठ्, भू – लट्, लृट्, लङ्

HISTORY/CIVICS

1. Make a list of ten important Revolutions of the world and along with the leaders.
2. Prepare a collage of Parliaments of five different countries of the world and their Preambles.
3. Write the Fundamental Rights and Duties sanctioned by the constitution of India.

GEOGRAPHY

1. On the Political map of India, locate and label all the Capitals of the States and Union Territories.
2. On the Physical map of India, locate all the major physical divisions of India.
3. Write a short note on the size and location of India.
4. Write short notes on latitude and longitude. Verify the relationship between longitude and time.

ECONOMICS

1. Give a Reflective writing on the social and economic conditions of villages in India.
2. What is Capital? Distinguish between fixed capital and working capital.
3. Make an Analytical study on the different sources of capital in India.

HOLIDAY HW HINDI

हिंदी

(प्रश्नोत्तरपूराकरो)

१. धूल

२. दुःखका अधिकार

३. गिल्लू

अनुच्छेद लिखें ।

१. परोपकार , आदर्श विद्यार्थी

ODIA

Kaha Mukha Anai Banchibi, Budhasankhari– Write all Question and Answers .