

HOLIDAY HOME WORK
CLASS IX

ENGLISH

1. Write write-ups on the thematic stories of moments as per story allotment.
2. Write a description of your school highlighting the fun you have on being together
3. You are Shafique/Seema. You strongly believe that not enough is being done to promote tourism on all India scale in the country. The visitors are shown a few places while the rest of the country remains unknown to them. Even handicrafts are not exhibited. Write a letter in about 100-120 words to the editor of the Stait Times stating your views.
4. You are Subah Ali, a CLASS XII student. You are waiting for your class 12 result. Meanwhile you would like to do a short term course on personality development. Write a letter to the Director, Groom N Shine Institute Chandigarh, enquiring about course details. Your address is 1705 SECTOR 21-D Chandigarh.

HINDI :

- परियोजना कार्य- किसी एक पशु या पक्षी के विषय पर **नवीन व रोचक** जानकारी एकत्र कर लिखें।
- निबन्ध लेखन- (300 शब्दों में) पर्यावरण संरक्षण, बाल श्रम में खोता बचपन |
- उपसर्ग, प्रत्यय व समास की पुनरावृत्ति

SCIENCE

PHYSICS:

1. CERT questions given on page no.100,102,103 and question no. (1 to 4) given on page 112.
2. Prepare synopsis of project.

CHEMISTRY:

1. How is a Physical change different from a Chemical change? Give five examples of both changes with reason.
2. Discuss the practical utility, importance and advantages of preparing a solution.
3. Write five examples of solubility of gases in water.
4. Prepare synopsis of the project.

BIOLOGY:

1. Prepare synopsis of the project.
2. Do exercises on page no. 66 and 67 of NCERT book.
3. Conduct the activity on page no.67 and write your observations in your Biology copy.

HISTORY:

1. Read chapter Socialism in Europe and the Russian Revolution. Frame at least two questions from each paragraph along with their answers.
2. Write a synopsis on fall of Tsarist autocracy in 1917 in Russia.
3. Write a short essay on Nelson Mandela and his role in the freedom struggle of South Africa.

GEOGRAPHY:

- 1- Collect information about the 'Silk Route'. Also find out the new developments, which are improving communication routes in the regions of high altitude.
- 2- Identify and locate standard meridian of India, Tropic of Cancer and neighboring countries.
- 3- On the basis of your observations during your trip to adventure camp at Nainital, write a brief summary on the following –
 - a. Type of land
 - b. Type of climate and vegetation,
 - c. Occupations of people.
- 4- Visit a nearby village and find out the following –
 - Type of farming (traditional or modern)
 - Other occupations of people than agriculture
 - Status of literacy rate (if children go to school or not)

Note down in your note book.

COMPUTER APPLICATION

1. Create Chart on any one of the following topics:
 - a. Input and Output Devices
 - b. Block Diagram of Computer
 - c. Features of CD and DVD
 - d. Application and System Software
 - e. Social Networks
 - f. Payment Apps
2. Complete the notes in your assignment copy from the content provided on the school portal.

FINE ART:

1. Make two thank you cards [without any matter].
2. Complete last first class assignment with color.

MATHS:

- 1) Find which of the variables x , y , z and u represent rational numbers and which irrational numbers:

(i) $x^2 = 5$ (ii) $y^2 = 9$ (iii) $z^2 = .04$ (iv) $u^2 = \frac{17}{4}$

- 2) Find three rational numbers between

(i) -1 and -2 (ii) 0.1 and 0.11
(iii) $\frac{5}{7}$ and $\frac{6}{7}$ (iv) $\frac{1}{4}$ and $\frac{1}{5}$

- 3) Insert a rational number and an irrational number between the following :

(i) 2 and 3 (ii) 0 and 0.1 (iii) $\frac{1}{3}$ and $\frac{1}{2}$
(iv) $\frac{-2}{5}$ and $\frac{1}{2}$ (v) 0.15 and 0.16 (vi) $\sqrt{2}$ and $\sqrt{3}$
(vii) 2.357 and 3.121 (viii) $.0001$ and $.001$ (ix) 3.623623 and 0.484848
(x) 6.375289 and 6.375738

- 4) Represent the following numbers on the number line :

$$7, 7.2, \frac{-3}{2}, \frac{-12}{5}$$

- 5) Locate $\sqrt{5}$, $\sqrt{10}$ and $\sqrt{17}$ on the number line.

- 6) Represent geometrically the following numbers on the number line :

(i) $\sqrt{4.5}$ (ii) $\sqrt{5.6}$ (iii) $\sqrt{8.1}$ (iv) $\sqrt{2.3}$

- 7) Express the following in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$:

(i) 0.2 (ii) $0.888\dots$ (iii) $5\bar{2}$ (iv) $0\overline{001}$
(v) $0.2555\dots$ (vi) $0.1\overline{34}$ (vii) $.00323232\dots$ (viii) $.404040\dots$

- 8) Show that $0.142857142857\dots = \frac{1}{7}$

9) Simplify the following:

(i) $\sqrt{45} - 3\sqrt{20} + 4\sqrt{5}$

(ii) $\frac{\sqrt{24}}{8} + \frac{\sqrt{54}}{9}$

(iii) $\sqrt[4]{12} \times \sqrt[3]{6}$

(iv) $4\sqrt{28} \div 3\sqrt{7} \div \sqrt[3]{7}$

(v) $3\sqrt{3} + 2\sqrt{27} + \frac{7}{\sqrt{3}}$

(vi) $(\sqrt{3} - \sqrt{2})^2$

(vii) $\sqrt[4]{81} - 8\sqrt[3]{216} + 15\sqrt[3]{32} + \sqrt{225}$

(viii) $\frac{3}{\sqrt{8}} + \frac{1}{\sqrt{2}}$

(ix) $\frac{2\sqrt{3}}{3} - \frac{\sqrt{3}}{6}$

10) Rationalise the denominator of the following:

(i) $\frac{2}{3\sqrt{3}}$

(ii) $\frac{\sqrt{40}}{\sqrt{3}}$

(iii) $\frac{3 + \sqrt{2}}{4\sqrt{2}}$

(iv) $\frac{16}{\sqrt{41} - 5}$

(v) $\frac{2 + \sqrt{3}}{2 - \sqrt{3}}$

(vi) $\frac{\sqrt{6}}{\sqrt{2} + \sqrt{3}}$

(vii) $\frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$

(viii) $\frac{3\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}}$

(ix) $\frac{4\sqrt{3} + 5\sqrt{2}}{\sqrt{48} + \sqrt{18}}$

11) Find the values of a and b in each of the following:

(i) $\frac{5 + 2\sqrt{3}}{7 + 4\sqrt{3}} = a - 6\sqrt{3}$

(ii) $\frac{3 - \sqrt{5}}{3 + 2\sqrt{5}} = a\sqrt{5} - \frac{19}{11}$

(iii) $\frac{\sqrt{2} + \sqrt{3}}{3\sqrt{2} - 2\sqrt{3}} = 2 - b\sqrt{6}$

(iv) $\frac{7 + \sqrt{5}}{7 - \sqrt{5}} - \frac{7 - \sqrt{5}}{7 + \sqrt{5}} = a + \frac{7}{11}\sqrt{5}b$

12) If $a = 2 + \sqrt{3}$, then find the value of $a - \frac{1}{a}$.

13) Rationalise the denominator in each of the following and hence evaluate by taking $\sqrt{2} = 1.414$, $\sqrt{3} = 1.732$ and $\sqrt{5} = 2.236$, upto three places of decimal.

(i) $\frac{4}{\sqrt{3}}$ (ii) $\frac{6}{\sqrt{6}}$ (iii) $\frac{\sqrt{10} - \sqrt{5}}{2}$

(iv) $\frac{\sqrt{2}}{2 + \sqrt{2}}$ (v) $\frac{1}{\sqrt{3} + \sqrt{2}}$

14) Simplify:

(i) $(1^3 + 2^3 + 3^3)^{\frac{1}{2}}$

(ii) $\frac{3}{5}^4 \frac{8}{5}^{-12} \frac{32}{5}^6$

(iii) $\frac{1}{27}^{\frac{-2}{3}}$

(iv) $(625)^{\frac{-1}{2} \frac{-1}{4}^2}$

(v) $\frac{9^{\frac{1}{3}} \times 27^{-\frac{1}{2}}}{3^6 \times 3^{-\frac{2}{3}}}$

(vi) $64^{-\frac{1}{3}} 64^{\frac{1}{3}} - 64^{\frac{2}{3}}$

(vii) $\frac{8^{\frac{1}{3}} \times 16^{\frac{1}{3}}}{32^{-\frac{1}{3}}}$

- 15) Let x and y be rational and irrational numbers, respectively. Is $x + y$ necessarily an irrational number? Give an example in support of your answer.
- 16) Let x be rational and y be irrational. Is xy necessarily irrational? Justify your answer by an example.
- 17) State whether the following statements are true or false? Justify your answer.

(i) $\frac{\sqrt{2}}{3}$ is a rational number.

(ii) There are infinitely many integers between any two integers.

(iii) Number of rational numbers between 15 and 18 is finite.

(iv) There are numbers which cannot be written in the form $\frac{p}{q}$, $q \neq 0$, p, q both are integers.

(v) The square of an irrational number is always rational.

(vi) $\frac{\sqrt{12}}{\sqrt{3}}$ is not a rational number as $\sqrt{12}$ and $\sqrt{3}$ are not integers.

(vii) $\frac{\sqrt{15}}{\sqrt{3}}$ is written in the form $\frac{p}{q}$, $q \neq 0$ and so it is a rational number.

- 18) Classify the following numbers as rational or irrational with justification :

(i) $\sqrt{196}$ (ii) $3\sqrt{18}$ (iii) $\sqrt{\frac{9}{27}}$ (iv) $\frac{\sqrt{28}}{\sqrt{343}}$

(v) $-\sqrt{0.4}$ (vi) $\frac{\sqrt{12}}{\sqrt{75}}$ (vii) 0.5918

(viii) $(1 + \sqrt{5}) - (4 + \sqrt{5})$ (ix) 10.124124... (x) 1.010010001...

19) Express $0.6 + 0.\overline{7} + 0.4\overline{7}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

20) Simplify: $\frac{7\sqrt{3}}{\sqrt{10} + \sqrt{3}} - \frac{2\sqrt{5}}{\sqrt{6} + \sqrt{5}} - \frac{3\sqrt{2}}{\sqrt{15} + 3\sqrt{2}}$.

21) If $\sqrt{2} = 1.414$, $\sqrt{3} = 1.732$, then find the value of $\frac{4}{3\sqrt{3} - 2\sqrt{2}} + \frac{3}{3\sqrt{3} + 2\sqrt{2}}$.

22) If $a = \frac{3 + \sqrt{5}}{2}$, then find the value of $a^2 + \frac{1}{a^2}$.

23) If $x = \frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$ and $y = \frac{\sqrt{3} - \sqrt{2}}{\sqrt{3} + \sqrt{2}}$, then find the value of $x^2 + y^2$.

24) Simplify: $(256)^{-\left(\frac{3}{4}\right)}$

25) Find the value of $\frac{4}{(216)^{-\frac{2}{3}}} + \frac{1}{(256)^{-\frac{3}{4}}} + \frac{2}{(243)^{-\frac{1}{5}}}$

ACTIVITY

Draw $\sqrt{2}$, $\sqrt{3}$, $\sqrt{4}$ $\sqrt{10}$ on same number line and can we say that shape formed by these square roots a spiral?

Represent $\sqrt{5.6}$ geometrically. Write steps of construction.

PROJECT:

Select any one topic from the following and do research work mentioning the following points

Polynomial

- Types
- Degree
- Order
- Coefficient

Euclid Geometry

- history
- achievements of Sir Euclid
- Euclid axiom
- Euclid postulates