

SAINIK SCHOOL BHUBANESWAR

SUMMER VACATION TASK

Class- IX

SUB- CHEMISTRY

2023-24

CHAPTER-1. MATTER IN OUR SURROUNDINGS

QUESTIONS

(To be done in separate vacation notebook)

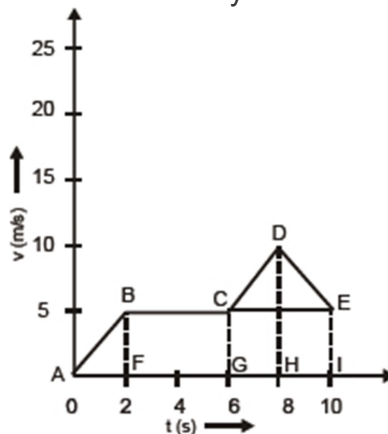
1. Tabulate the differences in the characteristics of states of matter.
2. Convert the following temperatures to the Celsius scale.
 - (a) 293 K
 - (b) 470 K.
3. Why is ice at 273 K more effective in cooling than water at the same temperature??
4. What are the characteristics of the particles of matter?
5. How do we liquefy the gases?
6. A sample of water under study was found to boil at 102 °C at normal pressure. Is the water pure? Will this water freeze at 0 °C? Comment.
7. Classify the following into osmosis/diffusion:-
 - (a) Swelling up of a raisin on keeping in water.
 - (b) Spreading of virus on sneezing.
 - (c) Earthworm dying on coming in contact with common salt.
 - (d) Shrinking of grapes kept in thick sugar syrup.
8. Water as ice has a cooling effect, whereas water as steam may cause severe burns. Explain these observations.
9. Alka was making tea in a kettle. Suddenly she felt intense heat from the puff of steam gushing out of the spout of the kettle. She wondered whether the temperature of the steam was higher than that of the water boiling in the kettle. Comment.
10. You are provided with a mixture of naphthalene and ammonium chloride by your teacher. Suggest an activity to separate them with a well-labelled diagram.
11. It is a hot summer day, Priyanshi and Ali are wearing cotton and nylon clothes respectively. Who do you think would be more comfortable and why?
12. You want to wear your favourite shirt to a party, but the problem is that it is still wet after a wash. What steps would you take to dry it faster?
13. Why does the temperature of a substance remain constant during its melting point or boiling point?
14. Comment on the following statements:-
 - (a) Evaporation produces cooling.
 - (b) Rate of evaporation of an aqueous solution decreases with increase in humidity.
15. Why are we able to sip hot tea or milk faster from a saucer rather than a cup?

PRACTICALS WRITTEN PART
(To be done in practical record notebook)

1. Preparation of:
 - a) a true solution of common salt, sugar and alum
 - b) a suspension of soil, chalk powder and fine sand in water
 - c) a colloidal solution of starch in water and egg albumin/milk in water and distinguish between these on the basis of
 - (i) transparency
 - (ii) filtration criterion
 - (iii) stability
2. Preparation of
 - a) A mixture
 - b) A compound using iron filings and sulphur powder and distinguishing between these on the basis of:
 - i) appearance, i.e., homogeneity and heterogeneity
 - ii) behaviour towards a magnet
 - iii) behaviour towards carbon disulphide as a solvent
 - iv) effect of heat
3. Perform the following reactions and classify them as physical or chemical changes:
 - a) Iron with copper sulphate solution in water
 - b) Burning of magnesium ribbon in air
 - c) Zinc with dilute sulphuric acid
 - d) Heating of copper sulphate crystals
 - e) Sodium sulphate with barium chloride in the form of their solutions in water.
4. Verification of the law of conservation of mass in a chemical reaction.
5. Determination of the melting point of ice and the boiling point of water.

SUB- PHYSICS

1. Define acceleration and state its SI unit. What is uniformly accelerated motion?
2. Find the total displacement of the body from the following graph:



3. A car travels at 54 km/h for first 20 s, 36 km/h for next 30 s and finally 18 km/h for next 10 s. Find its average speed.
4. Distinguish between uniform motion and non-uniform motion. Is uniformly accelerated motion uniform motion? Give one example each of uniform and non-uniform motion.
5. The speedometer readings of a car are shown below. Find the acceleration of the car and its displacement.

Time	Speedometer
9:25 am	36 km/h
9:45 am	72 km/h

7. An artificial satellite is moving in a circular orbit of radius 36,000 km. Calculate its speed if it takes 24 hours to revolve around the earth.
8. (a) Define average speed.
 (b) A bus travels a distance of 120 km with a speed of 40 km/h and returns with a speed of 30 km/h. Calculate the average speed for the entire journey.
9. What does the odometer of an automobile measure? Which of the following is moving faster? Justify your answer.
 (a) A scooter moving with a speed of 300 m per 1 minute.
 (b) A car moving with a speed of 36 km per hour.
10. A car travels from stop A to stop B with a speed of 30 km/h and then returns back to A with a speed of 50 km/h. Find
 (a) Displacement of the car.
 (b) Distance travelled by the car.
 (c) Average speed of the car.
11. Velocity-time graph for the motion of an object in a straight path is a straight line parallel to the time axis.
 (a) Identify the nature of motion of the body.
 (b) Draw the shape of distance-time graph for this type of motion.
12. Draw the shape of the distance-time graph for uniform and non-uniform motion of object. A bus of starting from rest moves with uniform acceleration of 0.1 m/sec^2 for 2 min. Find
 (a) The speed acquired.
 (b) The distance travelled.
13. A particle moves over three quarters of a circle of radius r . What is the magnitude of its distance and displacement?
14. A bus accelerates uniformly from 54 km/h to 72 km/h in 10 secs. Calculate-
 (a) Acceleration in m/s^2
 (b) Distance covered by the bus in meters during this interval.
15. A car moves with a speed of 30 km/h for half an hour, 25 km/h for one hour and 40 km/h for two hrs. Calculate the average speed of the car.
16. A car is travelling at 20 km/h, it speeds upto 60 km/h in 6 seconds. What is its acceleration?
17. A car accelerates from 6 ms^{-1} to 16 ms^{-1} in 10 sec. Calculate-
 (a) The acceleration and
 (b) The distance covered by the car in that time.
18. A circular track has a circumference of 3140 m with AB as one of its diameter. A car moves from A to B along the circular path with a uniform speed of 10 m/s. Find-
 (a) Distance covered by the car,
 (b) Displacement of the car, and
 (c) Time taken by the car in reaching from A to B.

Practical/Project work

Write below mentioned experiments in your physics lab manual. (Will be uploaded in class whatsapp group)

- ❖ Determination of density of solid (denser than water) by using a spring balance and a measuring cylinder.
- ❖ Establishing the relation between the loss in weight of a solid when fully immersed in (a) tap water, (b) strongly salty water with the weight of water displaced by it by taking at least two different solids.

Make a project in A4 size paper on any one of the following topic

- ❖ Solar Energy
- ❖ Space Science
- ❖ Nuclear Energy
- ❖ Wind Energy
- ❖ Gravitational Force
- ❖ SONAR

SUB- BIOLOGY

1. Define the meaning of term "Plasmolysis" and "Endocytosis"
2. Name the outermost layer found in Plant cell and Animal cell.
3. Describe the discovery of cell.
4. Differentiate between Diffusion and Osmosis.
5. Compare between Hypertonic, Hypotonic and Isotonic solutions.
6. Why does the skin of your finger shrink when you wash clothes for a long time?
7. A person takes concentrated solution of salt, after sometimes he starts vomiting. What is the phenomenon responsible for such situation?
8. Make an assignment on any one of the following topics in A4 size paper.
(Soil pollution/ Radioactive pollution/ Disposal of medical waste/ Ozone layer/ Nitrogen cycle/ Carbon cycle/ CFC/ Greenhouse effect/ Ground water pollution/ Acid rain/ Smog)
9. Name the scientists and their contribution in the field of Life sciences from the state of Odisha and Punjab. Write down the life sketch or biography of any one scientist from these two states.
10. Draw a poster on Global warming- climate change in A4 size Chart paper.

SUB- ENGLISH

1. Writing a Descriptive Paragraph. (Person, Place & event). (100 - 120 Words)

a) Ramesh, a student of DAV Public School, went on trekking during his NCCcamp in Himachal Pradesh. Using the following notes, write a brief description for Ramesh about his trekking experience in about Base camp at Raison in Manikaran hot water springs-trekking from Raison to Jana-virgin greenery, Beas river bank-walkthrilling-reached Pinni via Bringta bridge- water tumultuous and horrifying- crossed dense forests and hills-a ghost like place- required a rare courage to cross-saw rarebirds-nature in full glory- fascinating- reached Manikaran Hot Springs-rare scenes stillfresh.

b) Use the following cues to write a paragraph describing one of the securityguards posted at the main gate of your school.

Ganeshan – a retired soldier-working as security guard
Age – around 50
Build-tall and robust
Big moustache, intimidating looks
Sincere, dutiful and conscientious worker-very alert-good presence of mind
Popular – helpful towards the old and children, caught a gang of robbers once

c) Write a descriptive paragraph on 'My School' in about 100-150 words based on the given cues:

Kendriya Vidyalaya, Patna-Beautiful 'C' shaped building-Vast playground-30 rooms and a conference room-03 science laboratories -Physics, Chemistry and Biology-2 computer labs – A library full of books – A group of learned teachers and well- disciplined 1500 students – Principal-Vibrant, talented, excellent administrator and child loving.

2. Writing a Story. (100 - 120 Words)

a) Write an original short story that begins with the words "It was raining hard that night. In my hurry to get into the house, I didn't notice the black car parked across the road, I realised something was wrong when

b) Write an original short story that begins with the words "I pass through that path every day, irrespective of my odd office timings. Going there was a mandatory task for me. And every time "

3. Diary Entry. (100 - 120 Words)

a) You paid a visit to an 'Old Home' with other N.S.S. Volunteers. Using the hints given below together with your own ideas, make a diary entry of what you saw and experienced there.

Hints: • Old home • Mostly senior citizens above 60 • Peaceful surroundings • Spacious Clean rooms and baths • Regular Medical check-ups • a good library • Means of recreation • A home away from home.

b) While going home you came across many children on the roads at crossroads with begging bowls in their hands. You are shocked and disgusted at this unflattering picture of a country which boasts of being a major economy in the world. Record your experience in your diary.

4. Read the following chapters from your text-book and note down the difficult words. Find their meaning from a good dictionary.

- a) The Sound of Music
- b) The Little Girl
- c) A Truly Beautiful Mind
- d) The Adventures of Toto
- e) Iswaran the Storyteller

5. Write the summary of the following chapters in your own words. (120-150 words).

- a) The Fun They Had
- b) The Road Not Taken
- c) The Lost Child

SUB- GEOGRAPHY

- 1) Explain the term green revolution.
- 2) How are traditional seeds different from HYV seeds?
- 3) Collect pictures of different types of landforms and paste it in your HW note-book.
- 4) Talk to the farmer and collect information about-
 - a) The method of farming.
 - b) Technology they are using in the farm.
 - c) Any non- farming activities they are engaged.
- 5) On an outline map of India locate the following:
 - a) Peaks of India- Mt Everest, Kanchanjunga, Anaimudi, Namcha Barwa.
 - b) Ranges- Aravalli range, Vindhya range, Satpuda range, Patkai bum & Zaskar range.
 - c) Plateaus- Chotta Nagpur plateau, Malwa plateau & Meghalaya plateau
- 6) The Tropic of Cancer passes through how many states of India? Name them.
- 7) What is the time difference between IST and GMT?
- 8) What is the strategic significance of India's location in Asia?
- 9) Why is India called a subcontinent? Name the countries which form a part of Indian subcontinent?
- 10) How did India's contact with rest of the world contribute in the exchange of ideas and commodities? Explain.

SUB- HISTORY & CIVICS

1. Describe the meaning of Democracy?
2. What are the key features of Democracy? Explain.
3. Write an article on the Unemployment status of India. Make a project/model and suggest to the government that it can help to reduce it.
4. What is the role of women in the French Revolution?
5. Write some of the main features of the French Constitution of 1791.
6. Explain the full procedure of abolishment of monarchism in France and establishment of the Republican system.
7. Discuss with your parents and write down the hidden bitter truth of Casteism in our society.
8. As we can see Democracy is not giving solution to our problems. Discuss how monarchy or dictatorship can be a better substitute for it.

SUB- MATHEMATICS

FROM NCERT TEXT BOOK:

All the questions from Chapter-1(Number System) and Chapter-2(Polynomials).

(Fifty questions in total)

QUESTIONS FOR PRACTICE FROM REFERENCE BOOK:

- Q-1. If $P(x) = 2x^2 - x + 17$, then find the value of $P(1) + P(-1)$
- Q-2. Factorise the polynomial : $2x^3 - 16y^3$
- Q-3. Find the value of K if $X-1$ is a factor of $4X^3 + 3X^2 - 4X + K$.
- Q-4. Find the values of 'a' and 'b' if $\frac{3 + \sqrt{7}}{3 - \sqrt{7}} = a + b\sqrt{7}$
- Q-5. Evaluate : $\sqrt{32} \times \sqrt{18}$
- Q-6. Given that $\sqrt{2} = 1.414$, find the value of $\frac{1}{7-5\sqrt{2}}$
- Q-7. Express $8.\overline{325}$ in p/q form.
- Q-8. Find the value of p is If -2 is a zero of the polynomial $2x^2 + 3x - p$.
- Q-9. Simplify : $3\sqrt{45} - \sqrt{125} + \sqrt{200} - \sqrt{50}$
- Q-10. Find the remainder if $x^3 + 3x^2 + 3x + 1$ is divided by $(x + 1)$. Verify it by actual division.
- Q-11. Represent $\sqrt{7.8}$ on the number line.

- Q-12. Find the values of a and b if $\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a - b\sqrt{3}$
- Q-13. Factorise completely the polynomial: $x^3 + 13x^2 + 32x + 20$
- Q-14. Simplify : $5\sqrt{3} - 3\sqrt{12} + 2\sqrt{75}$
- Q-15. Evaluate : $\left(\frac{64}{125}\right)^{\frac{-2}{3}} + \frac{1}{\left(\frac{256}{625}\right)^{\frac{1}{4}}} + \frac{\sqrt{25}}{\sqrt[3]{64}}$
- Q-16. If $\sqrt{5} = 2.236$ and $\sqrt{3} = 1.732$ then find the value of $\frac{2}{(\sqrt{5}+\sqrt{3})}$
- Q-17. Find If the remainder when polynomial $2x^3 - 3x^2 + 2x - 4$ is divided by $(x-2)$
- Q-18. Find the value of 'k' for which the polynomial $2x^4 + 3x^3 + 2kx^2 + 3x + 6$ is exactly divisible by $(x + 2)$.
- Q-19. Find the quotient when $4x^3 + 7x^2 - 3x - 6$ is divided by $(x+1)$.
- Q-20. Find the remainder If $(x^{199} + 199)$ is divided by $(x + 1)$.
- Q-21. Find the value of a & b if $\frac{3+\sqrt{2}}{3-\sqrt{2}} = a + \sqrt{2}b$.
- Q-22 Simplify: 1) $(3\sqrt{5} - 2\sqrt{3})(3\sqrt{5} + 2\sqrt{3})$
2) $(3 - 2\sqrt{2})^2$
- Q-23 Represent $\sqrt{8.5}$ on the number line.
- Q-24 Represent $\sqrt{13}$ on number line.
- Q-25 Express 3.277.... in p/q form.
- Q-26 Write Remainder & Factor Theorem.
- Q27 If $x-2$ is a factor of polynomial $x^5 - 3x^4 - ax^3 + 3ax^2 + 2ax + 4$ then find the value of a.
- Q-28 Factorise 1) $64a^3 + 27p^3$ 2) $x^3 - 125y^3$ 3) $y^2 - 7y + 6$
- Q-29 Find the value of $55^3 - 25^3 - 30^3$.
- Q -30 If $x-k^2$ is a factor of $x^2 - k^2x + k - 3$ find the value of k.
- Q-31 Find the value $p(0), p(1), p(-2)$. for the following polynomials.
 $p(x) = 10x - 4x^2 - 3$ $p(y) = (y+2)(y-2)$
- Q-32 Write and learn all the formulae of chapter 1&2.
- Q-33. Show how $\sqrt{5}$ can be represented on number line.
- Q-34. Write the following in decimal form and find what kind of decimal each has.
(i) $\frac{36}{100}$ (ii) $\frac{1}{11}$ (iii) $4\frac{1}{8}$ (iv) $\frac{3}{13}$ (v) $\frac{329}{400}$ (vi) $\frac{17}{20}$ (vii) $\frac{15}{60}$ (viii) $\frac{7}{36}$
- Q-35. Find five rational numbers between $\frac{2}{3}$ and $\frac{3}{4}$.
- Q-36. Find five irrational numbers between $\frac{3}{7}$ and $\frac{8}{11}$.

Q-37. Classify the following no's as rational or irrational.

(i) $\frac{17}{20}$ (ii) 7.4259... (iii) 4.2626 ... (iv) $\frac{7}{5}$ (v) $\frac{2}{3}$

Q-38. Visualise on number line. (a) $\sqrt{4.3}$ (b) $\sqrt{8.5}$

Q-39. Rationalise a) $\frac{2}{\sqrt{7}}$ b) $\frac{6+\sqrt{2}}{3-\sqrt{5}}$ c) $\frac{1}{\sqrt{7}+\sqrt{11}}$

Q40. Factorise completely the polynomial: $x^3 + 13x^2 + 32x + 20$

SUB- COMPUTER

1. Create a letterhead of any company or institution that you got and insert the Watermark with that company name in the document by using Open Office Writer.



2. Making poster on internet protocols with explanation.

Note 1: Assignment on Mail Merge send through following link:

<https://forms.gle/D9wt7FjqvBejcvyn6>

Or to my mailid:sgayatradora29@gmail.com

Note 2: Make poster in A4 Size paper

VACATION TASK

CLASS-IX

HINDI

1. अनुच्छेद लिखो-

क. मेरे सपनों का भारत

ख. कोरोना से बचाव

ग. वृक्ष और मानव

घ. मेरे जीवन का लक्ष्य

ड. मेरा गाँव / शहर

च. मेरा मित्र

छ. जैविक खेती

2. आकर्षक विज्ञापन बनाओ-

क. हेल्थ ड्रिंक

ख. केश तेल

ग. 2BHK घर

घ. हर्बल चाय

ड. स्कूल बैग

3. पत्र लिखो-

क. अनुशासन का महत्व बताते हुए छोटे भाई को।

ख. शैक्षिक भ्रमण में जाने के लिए अनुमति हेतु पिताजी को।

ग. ऑनलाइन कक्षा में मन लगाकर पढ़ने हेतु मित्र को।

घ. जन्मदिन में मिले उपहार हेतु माँ को।

ड. छट्टियों में आप अपने आस-पास के इलाके को कैसे साफ रखेंगे, इसकी तैयारी हेतु अपनी बड़ी बहन को।

4. गिल्लू कहानी को पढ़कर 20 MCQ बनाओ।

5. पढ़ाए गए पाठों में आए मुहावरे और उनके अर्थ लिखो।

6. स्वरचित लेख लिखो। (For school magazine)

7. मराठी भाषा के कहानीकार की कोई कहानी हिंदी में लिखो।

8. महाराष्ट्र की कला और संस्कृति पर एक PPT बनाओ।

9. पद और दुःख का अधिकार पाठ से 20-20 MCQ बनाओ ।

10. किसी कहानी को चित्रकथा में लिखो।