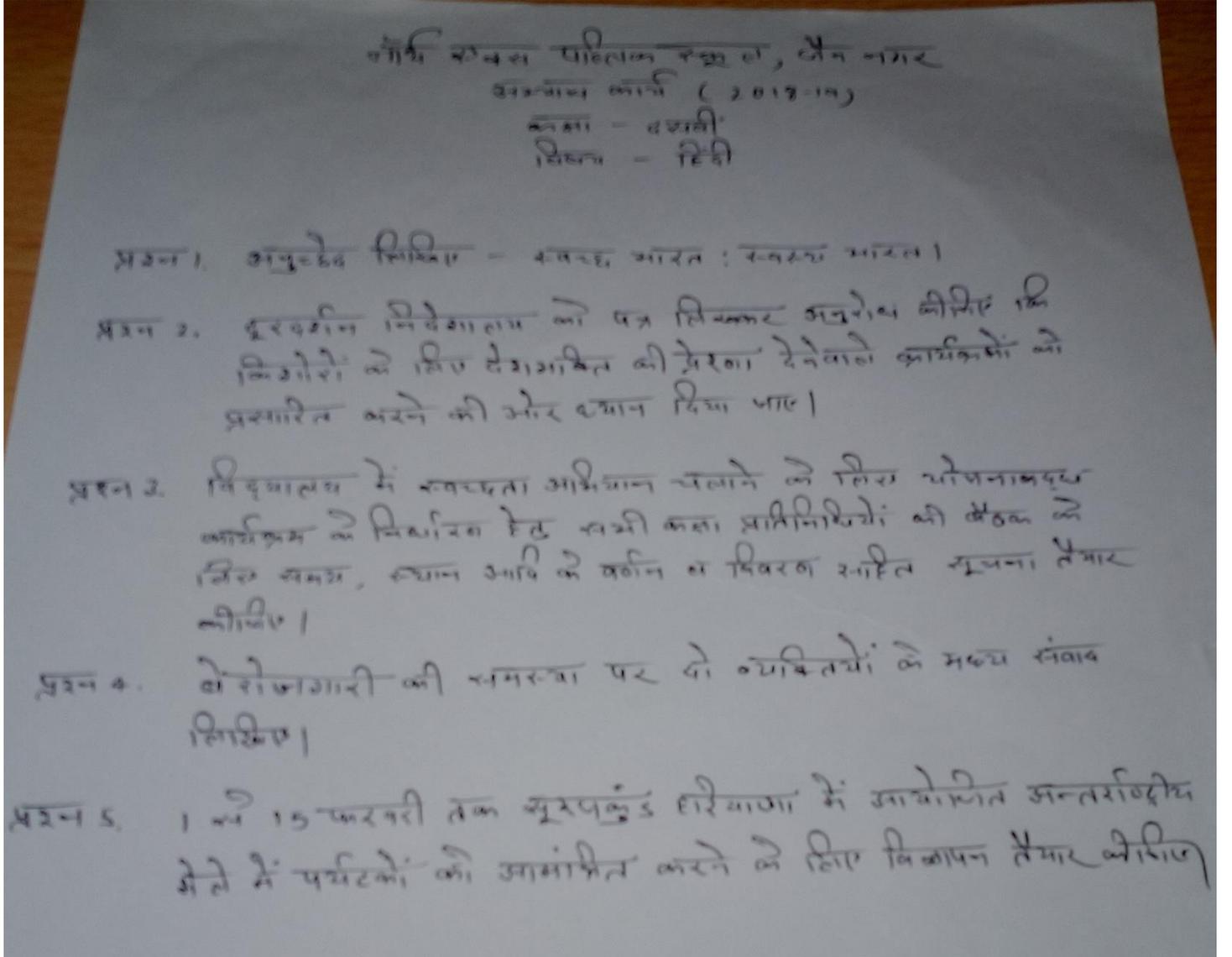


NORTH-EX PUBLIC SCHOOL, JAIN NAGAR
WINTER HOLIDAYS HOMEWORK
CLASS-X

ENGLISH

1. Man has gained control over nature and animals. This has led to ecological imbalance. Write an article in 100-120 words on how this imbalance has affected the life of man. You Maya/Mohan.
2. Write a letter to the editor 'The Hindustan Times' highlighting the 'Joys of Reading' in about 120 words.
3. What does Helen say about her association with Alexander Graham Bell?
4. How did Helen enhance her knowledge of different subjects? What did she enjoy reading more?
5. What different difficulties did Helen face in the first few weeks of her second year at the Gilman School?

HINDI



MATHS

Q.1 Find the value of $\frac{2 \tan 60^\circ}{1 + \tan^2 60^\circ}$

Q.2 If $\text{Cosec } B = \sqrt{10}$, then find other trigonometric ratios.

Q.3 If $\text{Sin } A = \frac{a^2 - b^2}{a^2 + b^2}$, find $\text{Cos } A$, $\text{tan } A$ and $\text{Sec } A$.

Q.4 If $7 \text{Sin}^2 \theta + 3 \text{Cos}^2 \theta = 4$, Show that $\text{tan } \theta = \frac{1}{\sqrt{3}}$.

Q.5 If $a \text{Cosec } A = p$ and $b \text{Cot } A = q$, then prove that

$$\frac{p^2}{a^2} - \frac{q^2}{b^2} = 1$$

Q.6 Prove that the following:

(i) $\frac{\text{Sin } \theta}{1 - \text{Cos } \theta} = \text{Cosec } \theta + \text{Cot } \theta$

(ii) $\frac{\text{Sin } \theta}{1 + \text{Cos } \theta} + \frac{1 + \text{Cos } \theta}{\text{Sin } \theta} = 2 \text{Cosec } \theta$

$$(iii) (1 + \cot \theta - \operatorname{cosec} \theta) (1 + \tan \theta + \sec \theta) = 2$$

SCIENCE

1. What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and name the type of reaction.
2. Give an example of a decomposition reaction. Describe an activity to illustrate such a reaction by heating.
3. A compound which is prepared from gypsum has the property of hardening when mixed with a proper quantity of water. Identify the compound and write its chemical formula. Write the chemical equation for its preparation. Mention any one use of the compound.
4. What is meant by refining of a metals? Name the most widely used method of refining impure metals produced by various reduction processes. Describe with the help of a labelled diagram how this method may be used for refining of copper.'
5. A carbon compound '*P*' on heating with excess conc. H_2SO_4 forms another carbon compound '*Q*' which on addition of hydrogen in the presence of nickel catalyst forms a saturated carbon compound '*R*'. One molecule of '*R*' on combustion forms two molecules of carbons dioxide and three molecules of water. Identify *P*, *Q*, and *R* and write chemical equations for the reactions involved.'
6. Explain the process of digestion of food in mouth, stomach and small intestine in human body.
7. Answer the following
 - (a) Draw the structure of a neuron and label the following on it Nucleus, Dendrite, Cell body and Axon
 - (b) Name the part of neuron: I. where information is acquired. II. through which information travels as an electrical impulse.
8. What is placenta? Describe its structure. State its functions in case of a pregnant human female
9. Answer the following
 - (a) Write the functions of each of the following parts in a human female reproductive system: I. Ovary
II. Uterus
III. Fallopian tube
 - (b) Write the structure and functions of placenta in a human female.
10. With the help of one example for each, distinguish between the acquired traits and the inherited traits. Why are the traits/experiences acquired during the entire lifetime of an individual not inherited in the next generation? Explain the reason of this fact with an example.
11. The image of an object formed by a mirror is real, inverted and is of magnification -1 . If the image is at a distance of 40 cm from the mirror, where is the object placed? Where would the image be if the object is moved 20 cm towards the mirror? State reason and also draw ray diagram for the new position of the object to justify your answer.
12. What is atmospheric refraction? Use this phenomenon to explain the following natural events. A. Twinkling of stars
B. Advanced sun-rise and delayed sun-set.
C. Draw diagram to illustrate your answers
13. In a household electric circuit different appliances are connected in parallel to one another. Give two reasons. An electrician puts a fuse of rating $5A$ in that part of domestic electrical circuit in which an electrical heater of rating 1.5 kW , 220 V is operating. What is likely to happen in this case and why? What is likely to happen in this case and why? What change, if any, needs to be made?
14. Answer the following
 - (a) Distinguish between the terms 'overloading' and 'short-circuiting' as used in domestic circuits.
 - (b) Why are the coils of electric toasters made of an alloy rather than a pure metal?
15. Two lamps, one rated 60 W at 220 V and the other 40 W at 220 V , are connected in parallel to the electric supply at 220 V .
 - (a) Draw a circuit diagram to show the connections
 - (b) Calculate the current drawn from the electric supply.
 - (c) Calculate the total energy consumed by the two lamps together when they operate for one hour.

SST

1. Why is conservation of mineral resources essential? Explain any three methods to conserve them.
2. "The economic strength of a country is measured by the development of manufacturing industries". Justify.
3. What are the various challenges faced by political parties?
4. Explain any five features of federalism.
5. What is globalization? Describe the role of MNCs in promoting globalization process.

FIT

- Q1. Differentiate between XML and HTML.
- Q2. Explain the types of tags in HTML.
- Q3. Differentiate between primary key and foreign key.
- Q4. Distinguish between virus, worm and Trojan horse.
- Q5. Make a chart on various HTML tags.