असतो मा सद्गमय, तमसो मा ज्योतिर्गमय।।

HALLMARK PUBLIC SCHOOL
www.hallmarkpublicschool.com

SUMMER VACATION ASSIGNMENT 2024

CLASS-X

MAY 21, 2024 TO JULY 03, 2024

The School Reopens on JULY 04, 2024.

Dearest Hallmarkites

Greetings from Hallmark!

Summer Vacation brings with itself a much-needed breather from hectic schedule. It is the most awaited time meant for relaxation and enjoyment, and if this time is utilised for creative pursuits, it becomes a learning experience.

Keeping this in view, we have designed a few **exciting fun projects/ assignments** to enhance learning skills, help understand concepts better, and make for a **great crash course** aimed at **improving your academic output** as well. These assignments will not only help you **to revise and reinforce what you have learned in school**, but will also enrich your knowledge.

In a nutshell, the Summer Vacation Assignment has been designed to be a **meaningful and creative exercise.**

Important Note:

- These projects/ assignments will be assessed as **Subject Enrichment Activity** to be **added in your Portfolio.**
- **Submit the Summer Vacation Assignment** to the Class Teacher **within a week of reopening of the school.**

JUST A LITTLE NOTE

- **Make sure you have a quiet, well-lit place to do homework.**

  Avoid doing homework with the television on or in places with other distractions, such as mobile phones, people coming and going.

- **Make sure the materials you need, such as paper, pens/pencils and a dictionary, are available.**

  In case any special material is required for some projects and get that in advance.

- **Learn time management.**

  Establish a set time each day for doing homework. It will help regulating your Body Clock as per the set schedule.

- **Ask for assistance and guidance, not answers**.

  Don't insist your parents/elders to provide you with the solutions of your assignments. Seek guidance but don't expect answers.

- **If homework is meant to be done by you alone, don't involve any elder.**

  Homework is a great way to develop independent, lifelong learning skills.

- **Figure out what is hard homework and what is easy homework.**

  Do the hard work first. The harder a task is, the more energy and focus we need to complete it. Starting the harder tasks when you are tired is more difficult and often results in putting them off for another day.

- **Celebrate progress in homework.**

  Celebrate every successful homework completion and rejoice that success with a special event (e.g., pizza, a walk, a trip to the park) to reinforce the positive effort.

Best wishes for Happy Holidays!

Hallmark Team

ENGLISH

LET'S ENHANCE COMMUNICATION SKILLS:

'A lot of problems in the world would be solved if we are able to express ourselves verbally well.' Let's enhance our communication skills with the help of '**Words and Expressions' (Workbook).**

Go through the Units 3 & 4 and solve their exercises as well.

STUDENT PORTFOLIO ENRICHMENT ACTIVITIES:

- **Epilogue Writing-** 'The Black Aeroplane'
- **Case-Based Research-** 'Nelson Mandela- A Long Walk to Freedom'
- **Dear Diary**

  'Memory is the diary that we all carry with us.'

  But writing the memories in a diary is always a great experience. Let's keep a diary this vacation recording the best bits of the holidays. Write:

  - about the special memories made with friends and family
  - the things you learnt and which you want to share with your class when you come back
  - about interesting places visited during your holiday

  Create it adding snapshots.

हिंदी

STUDENT PORTFOLIO ENRICHMENT ACTIVITIES:

- **स्पर्श भाग 2**
  - पाठ–'ततााँरा वामीरो कथा' पढें व **Mind Map** बनाएँ।
- **संचयन भाग 2**
  - पाठ–'सपनों के से दिन' पढें और **Mind Map** बनाएँ।

WORK TO BE DONE IN THE HINDI NOTEBOOK:

अनुच्छेद लेखन करें।

1. पर उपदेश कुशल बहुतेरे

   सूक्ति का अर्थ– उपदेशकों की बहुलता– वर्तमान मानसिकता– कथनी एवं करनी में अंतर– निष्कर्ष–

2. विपति कसौटी जे कसे तेई साँचे मीत

   सूक्ति का अर्थ– सच्चे मित्र की पहचान– मित्रता का उद्देश्य– सफलता का आधार– विभिन्न उदाहरण– स्वार्थी मित्र से हानि– निष्कर्ष

सूचना लेखन करें

1. विद्यालय परिसर के बाहर अनाधिकृत व्यक्तियों द्वारा स्वास्थ्य की दृष्टि से हानिकारक खाद्य वस्तुएँ बेची जाती हैं और विद्यार्थी उस ओर आकृष्ट होकर उन वस्तुओं को खरीदते हैं। विद्यालय के छात्र प्रमुख के रूप में इन चीज़ों से दूर रहने की सलाह देते हुए एक सूचना लगभग 30 शब्दों में लिखिए।
2. आपके विद्यालय में एक सप्ताह के लिए 'नेत्र–चिकित्सा शिविर' लगाया जा रहा है, जिसमें निःशुल्क नेत्र–परीक्षण किया जाएगा। स्थानीय जनता की सूचना के लिए 30 शब्दों में एक सूचना–पत्रक लिखिए।

MATHEMATICS

Q.1 Solve the following sums in your Mathematics notebook:

1. For what value of p, (-4) is a zero of the polynomial $x^2 - 2x - (7p + 3)$?
2. If $(x + a)$ is a factor of $2x^2 + 2ax + 5x + 10$ find a.
3. Find the zeroes of the quadratic polynomial $5x^2 - 4 - 8x$ and verify the relationship between the zeroes and the coefficient of the polynomial.
4. If one zero of the polynomial $(a^2 - 9)\, x^2 + 13x + 6a$ is reciprocal of the other, find the value of 'a'.
5. If α and β are zeroes of the quadratic polynomial $x^2 - 6x + a$; find the value of 'a' if $3\alpha + 2\beta = 20$.
6. If α and β are the zeroes of a quadratic polynomial $x^2 + x - 2$ then find the value of $\frac{1}{\propto} + \frac{1}{\beta}$
7. The taxi charges in a city comprise of a fixed charge together with the charges for the distance covered. For a journey of 10 km the charge paid is Rs. 75 and for a journey of 15 km the charge paid is Rs. 110. What will a person have to pay for travelling a distance of 25 km?
8. A motor boat whose speed is 24 km/hr in still water takes 1 hr more to go 32km upstream than to return downstream to the same spot. Find the speed of the stream.
9. Solve the following system of linear equations by substitution method:
   $2x - y = 2$; $x + 3y = 15$
10. If the common difference of an A.P. is 3, then find $a_{20} - a_{15}$.

11. Find the value(s) of k for which the equation $x^2 + 5kx + 16 = 0$ has real and equal roots.
12. Find the value of k, for which one root of the quadratic equation $kx^2 - 14x + 8 = 0$ is 2.
13. Places A and B are 80 km apart from each other on a highway.

    A car starts from A and another from B at the same time. If they move in same direction they meet in 8 hours and if they move towards each other they meet in 1 hour 20 minutes. Find the speed of cars.
14. If $x = 3$ is one root of the quadratic equation $x^2 - 2kx - 6 = 0$, then find the value of k
15. A plane left 30 minutes late than its scheduled time and in order to reach the destination 1500 km away in time, it had to increase its speed by 100 km/h from the usual speed. Find its usual speed
16. A motor boat whose speed is 18 km/hr in still water takes 11hrs more to go 24 km upstream than to return downstream to the same spot. Find the speed of the stream. A train travels at a certain average speed for a distance of 63 km and then travels at a distance of 72 km at an average speed of 6 km/hr more than its original speed. if it takes 3 hours to complete total journey, what is the original average speed?
17. If $ad \neq bc$, then prove that the equation $(a^2 + b^2)x^2 + 2(ac + bd)x + (c^2 + d^2) = 0$ has no real roots.
18. Find whether 55 is a term of the AP: 7, 10, 13 ...or not. If yes, find which term it is.
19. Find the 20th term of the AP whose 7th term is 24 less than the 11th term, first term being 12.
20. The sum of the 5th and the 7th of an AP is 52 and the 10th term is 46. Find the AP.
21. If the 9th term of an AP is zero, Prove that its 29th term is twice its 19th term.

Q.2 Exemplar Problems: Do Chapters 1 to 5 in your Mathematics notebook.

STUDENT PORTFOLIO ENRICHMENT ACTIVITY:

Make a working model of 'Clinometer.'

https://youtu.be/D8aaG2J29k4?si=1CLZuDde04VNuv5_

Note: The above link is for the reference only. Use your own creativity.

SCIENCE

1. Ch-1 Chemical Reactions and Equations
2. Ch-2 Acids, Bases and Salts
3. Ch-6 Life Processes
4. Ch-10 Light- Reflection and Refraction

General Instructions:

1. Revise the above mentioned chapters and solve the following Revision Worksheet in your Science Notebook.
2. Section A has one-mark questions comprising MCQ, Case Study-based and Assertion-reason Type Questions. They are to be answered in one word or in one sentence.
3. Section B has short answer type questions. These are to be answered in about 50 - 60 words each.
4. Section C has long answer type questions.

SECTION-A

Q.1 Which of the following mirrors is used by a dentist to examine a small cavity in a patient's teeth?

(A) Convex mirror (C) Concave mirror

(B) Plane mirror (D) Any spherical mirror

Q.2 In which of the following groups of organisms, blood flows through the heart only once during one cycle of passage through the body?

(A) Rabbit, Parrot, Turtle
(B) Frog, crocodile, Pigeon
(C) Whale, Labeo, Penguin
(D) Shark, dog fish, sting ray

Q.3 Rays from Sun converge at a point 15 cm in front of a concave mirror. Where should an object be placed so that size of its image is equal to the size of the object?

(A) 30 cm in front of the mirror
(B) 15 cm in front of the mirror
(C) Between 15 cm and 30 cm in front of the mirror
(D) More than 30 cm in front of the mirror

Q.4 **Assertion:** Resins and gums are stored in old xylem tissue in plants.
Reason: Resins and gums facilitate transport of water molecules.

(A) Both A and R are true and R is the correct explanation of A
(B) Both A and R are true and R is not the correct explanation of A
(C) A is true but R is false
(D) A is False but R is true

Q.5 The chemical reaction between copper and oxygen can be categorized as:

(A) Displacement reaction
(B) Decomposition reaction
(C) Combination reaction
(D) Double displacement reaction

Q.6 How will you protect yourself from the heat generated while diluting a concentrated acid?

(A) By adding acid to water with constant stirring.
(B) By adding water to acid with constant stirring.
(C) By adding water to acid followed by base.
(D) By adding base to acid with constant stirring

Q.7 Opening and closing of stomatal pore depends on:

(A) Atmospheric temperature
(B) oxygen concentration around stomata
(C) carbon dioxide concentration around stomata
(D) water content in the guard cells

Q.8 Consider these indices of refraction: glass: 1.52; air: 1.0003; water: 1.333. Based on the refractive indices of three materials, arrange the speed of light through them in decreasing order.

(A) The speed of light in water > the speed of light in air > the speed of light in glass.

(B) The speed of light in glass > the speed of light in water > the speed of light in air.

(C) The speed of light in air > the speed of light in water > the speed of light in glass.

(D) The speed of light in glass > the speed of light in air > the speed of light in water.

Q.9 Vinay observed that the stain of curry on a white shirt becomes reddish-brown when soap is scrubbed on it, but it turns yellow again when the shirt is washed with plenty of water. What might be the reason for his observation?

i. Soap is acidic in nature

ii. Soap is basic in nature

iii. Turmeric is a natural indicator which gives reddish tinge in bases

iv. Turmeric is a natural indicator which gives reddish tinge in acids

(A) i and ii (B) ii and iii (C) i and iv (D) ii and iv

Q.10 **Assertion:** Fresh milk in which baking soda is added, takes a longer time to set as curd.

Reason: Baking soda decreases the pH value of fresh milk to below 6.

(A) Both A and R are true and R is the correct explanation of A.

(B) Both A and R are true and R is not the correct explanation of A.

(C) A is true, but R is false.

(D) A is false, but R is true.

Q.11 If the power of a lens is - 4.0 D, it means that the lens is a:

(A) concave lens of focal length -50 m (B) convex lens of focal length +50 cm

(C) concave lens of focal length -25 cm (D) convex lens of focal length -25 m

Q.12 In a person the tubule part of the nephron is not functioning at all. What will be its effect on urine formation?

(A) The urine will not be formed.

(B) Quality and quantity of urine is unaffected.

(C) Urine is more concentrated.

(D) Urine is more diluted.

Q. 13 What is the pH of the acid which is used in the formation of common salt?

(A) Between 1 to 3 (B) Between 6 to 8

(C) Between 8 to 10 (D) Between 11 to 13

Q. 14 Plants use completely different process for excretion as compared to animals. Which one of the following processes is NOT followed by plants for excretion?

(A) They can get rid of excess water by transpiration.

(B) They selectively filter toxic substances through their leaves.

(C) Waste products are stored as resins and gums in old xylem.

(D) They excrete waste substances into the soil around them.

Q. 15 In which of the following groups of organisms, food material is broken down outside the body and then absorbed in?

(A) mushroom, green plants, amoeba

(B) yeast, mushroom, bread mould

(C) paramecium, amoeba, cuscuta

(D) cuscuta, lice, tapeworm

Q. 16 If the real image of a candle flame formed by a lens is three times the size of the flame and the distance between lens and image is 80 cm, at what distance should the candle 14 be placed from the lens?

(A) – 80 cm (B) – 40 cm (C) – 40/3 cm (D) – 80/3 cm

Q. 17 What is common between extensive network of blood vessels around walls of alveoli and in glomerulus of nephron?

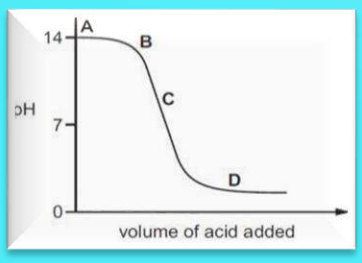
(A) Thick-walled arteries richly supplied with blood

(B) Thin-walled veins poorly supplied with blood

(C) Thick-walled capillaries poorly supplied with blood.

(D) Thin-walled capillaries richly supplied with blood

Q. 18 The graph given below depicts a neutralization reaction (acid + alkali → salt + water). The pH of a solution changes as we add excess of acid to an alkali.



Which letter denotes the area of the graph where both acid and salt are present?

(A) A (B) B (c) C (d) D

Q. 19 In the reaction of iron with copper sulphate solution: CuSO4 + Fe ---> Cu + FeSO4 Which option in the given table correctly represents the substance oxidised and the reducing agent?

OPTION	Substance Oxidized	Reducing Agent
A	Fe	Fe
B	Fe	$FeSO_4$
C	Cu	Fe
D	$CuSO_4$	Fe

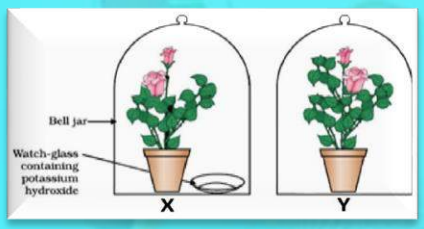
Q. 20 Nalini draws a ray diagram for an object in front of a concave mirror. She draws a ray starting from the top of the object and falling on the mirror perpendicularly. The ray after reflection will

(A) pass through focus. (C) pass through the centre of curvature.

(B) pass through pole. (D) pass through any point on the principal axis.

CASE-BASED QUESTIONS

Q. 21 The Figure shown below represents an activity to prove the requirements for photosynthesis. During this activity, two healthy potted plants were kept in the dark for 72 hours. After 72 hours, KOH is kept in the watch glass in setup X and not in setup Y. Both these setups are air tight and have been kept in light for 6 hours. Then, Iodine Test is performed with one leaf from each of the two plants X and Y.



Q. 22 This experimental set up is used to prove essentiality of which of the following requirements of photosynthesis?

(A) Chlorophyll (b) Oxygen (C) Carbon dioxide (D) Sunlight

Q. 23 The function of KOH is to absorb

(A) Oxygen. (B) Carbon dioxide. (C) Moisture. (D) Sunlight.

Q. 24 Which of the following statements shows the correct results of Iodine Test performed on the leaf from plant X and Y respectively?

(A) Blue - black colour would be obtained on the leaf of plant X and no change in colour on leaf of plant Y.

(B) Blue - black colour would be obtained on the leaf of plant Y and no change in colour on leaf of plant X.

(C) Red colour would be obtained on the leaf of plant X and brown colour on the leaf of plant Y.

(D) Red colour would be obtained on the leaf of plant Y and brown colour on the leaf of plant X.

Q.25 Which of the following steps can be followed for making the apparatus air tight?

i. placing the plants on glass plate

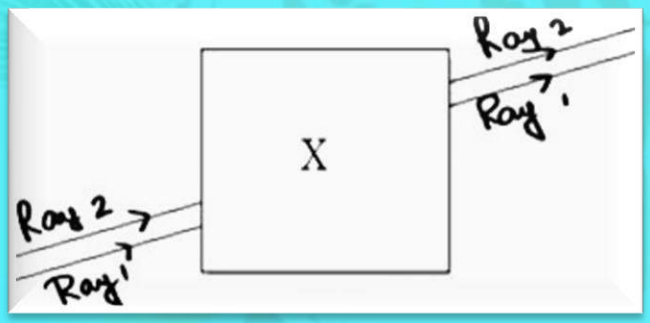
ii. using a suction pump.

iii. applying Vaseline to seal the bottom of jar.

iv. creating vacuum

(A) i and ii (B) ii. and iii (C) i. and iii (D) ii. and iv

Q.26 Noor, a young student, was trying to demonstrate some properties of light in her Science project work. She kept 'X' inside the box (as shown in the figure) and with the help of a laser pointer made light rays pass through the holes on one side of the box. She had a small butter-paper screen to see the spots of light being cast as they emerged.



Q.27 What could be the 'X' that she placed inside the box to make the rays behave as shown?

(A) a converging lens (B) a parallel-sided glass block

(B) a plane mirror (D) a triangular prism

Q.28 She measured the angles of incidence for both the rays on the left side of the box to be 48.60. She knew the refractive index of the material 'X' inside the box was 1.5. What will be the approximate value of angle of refraction?

(A) 45 degrees (C) 30 degrees

(B) 40 degrees (D) 60 degrees

(Use the value: sin 48.60 ≈ 0.75)

Q.29 Her friend noted the following observations from this demonstration:

i. Glass is optically rarer than air.

ii. Air and glass allow light to pass through them with the same velocity.

iii. Air is optically rarer than glass.

iv. Speed of light through a denser medium is faster than that of a rarer medium.

v. The ratio: sin of angle of incidence in the first medium to the ratio of sin of angle of refraction in the second medium, gives the refractive index of the second material with respect to the first one.

Which one of the combination of the above statements given below is correct?

(A) ii, iv and v are correct. (B) iii and iv are correct.

(B) i, iv and v are correct. (D) iii and v are correct.

Q.30 The object inside the box was made of a material with a refractive index less than 1.5 then the

(A) Lateral shift of the rays would have been less.

(B) Lateral shift of the rays would have been more.

(C) Lateral shift of the rays would remain the same as before.

(D) There is not enough information to comment on any of the above statements.

SECTION-B

Q.31 How can you say that acid plays an important role in our digestive system?

Q.32 A dry palette of a common base B, when kept in open absorbs moisture and turns sticky. The compound is also a by-product of chlor alkali process. Identify B. What type of reaction occurs when B is treated with an acidic oxide? Write a balanced chemical equation for one such solution.

Q.33 'Sweet tooth' may lead to tooth decay. Explain. What is the role of toothpastes in preventing cavities?

Q.34 Give reason:

(i) Fine hair and mucus are present in the nasal passage.

(ii) Rings of cartilage are present in the throat.

Q.35 (i) What is meant by high blood pressure?

(ii) How can high blood pressure harm us?

Q.36 Differentiate between combination and decomposition reactions with examples.

SECTION-C

Q.37 (i) Draw a diagram of the human respiratory system and label the following parts:

(a) Part where air is filtered by fine hairs and mucus

(b) Part which terminate in balloon-like structures

(c) Balloon-like structure where exchange of gases takes place

(d) Part which separate chest cavity from abdominal cavity

(ii) The breathing rate in aquatic organisms is much faster than in terrestrial organisms. Comment.

(iii) Both battery and ATP can provide energy for many different kinds of uses. Justify the statement.

Q.38 (i) Draw a neat diagram of the human digestive system and label the following parts:

(a) Part in which peristalsis occur

(b) Part which stores the bile

(c) Part which helps in absorption of nutrients from food

(ii) What is the function of the bile juice?

(iii) The release of HCl is an important factor in protein digestion in stomach. Validate the statement.

Q.39 Draw ray diagrams showing the image formation by a concave mirror when an object is placed

(A) between pole and focus of the mirror

(B) between focus and centre of curvature of the mirror

(C) at the centre of curvature of the mirror

(D) a little beyond the centre of curvature of the mirror

(E) at infinity

Q.40 Salt A commonly used in bakery products on heating gets converted into another salt B which itself is used for removal of hardness of water, and a gas C is evolved. The gas C, when passed through lime water, turns it milky. Identify A, B and C.

STUDENT PORTFOLIO ENRICHMENT ACTIVITIES:

- **Build a Simple Electric Motor**

https://youtu.be/WIOpGkOMMhg?si=ctdI3zBYE6aOFUIB

SOCIAL SCIENCE

Project on **Agriculture and its crops** with 3-D effect

- Use A4 sized pastel sheets for the Case Study.
- Add aesthetics to make it attractive.

PROJECTS FOR CBSE EXPRESSION SERIES-2024

- Write an **Essay** (700 words) or make a **PAINTING** (A4 size sheet) or a **POEM** on **ANY ONE** of the given topics:

  A nation can develop only if all are educated

  OR

  To save environment, my suggestions are

Revise all the Syllabus done till date!

Happy Holidays!