DARSHAN ACADEMY, DELHI

SUMMER ASSIGNMENT

Session: 2024-25

Grade: X

As we embark on our summer holidays, it's essential to keep the learning momentum alive, even amidst relaxation and leisure. This homework encourages independent research, critical thinking, and analytical skills, and prepares students for the challenges ahead. The tasks included in this summer holiday homework are designed to engage students actively, sparking their curiosity and nurturing their intellectual growth. As students immerse themselves in these activities, they will not only enrich their knowledge but also develop essential skills that will serve them well beyond the confines of the classroom, fostering a lifelong love for learning and exploration.

DARSHAN ACADEMY

SUMMER ASSIGNMENT 2024-25
GRADE X, SUBJECT: – ENGLISH

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General Instruction : Attempt all question in assignment notebook.	
Q1.	Read the given anecdote and analyze the similarities and differences with reference to 'A Letter to God'.
	A very poor woman called-in a radio station asking for help from God. A non- believer, also listening to this program, decided to make fun of the woman. He got her address, called his secretary and ordered her to buy food and take it to the woman. However, the instruction was: "When the woman asks who sent the food, tell her that it's from the devil." When the secretary arrived at the woman's house, the woman was very happy and grateful for the help. The Secretary then asked her, "Don't you want to know who sent the food?" The woman replied, "No, I don't even care because when God orders, even the devil obeys!"
Q2.	Imagine that Man has been accused by the tiger of cruelty in an animal court. What would be the tiger's two major accusations and how would man defend them? Present your answer in two paragraphs.
Q3.	Using the acronym SWIFT (structure/symbolism, word choice, imagery, figurative language, and theme and tone) analyze the poems 'Dust of Snow' and 'Fire and Ice' composed by Robert Frost and explain how each element impacted the poem.
Q4.	Pets have unique care and handling requirements and should only be kept by those with the commitment to understand and meet their needs. Prepare an argument in support of or against this statement in the form of a debate.

CROSSWORD- HEALTH
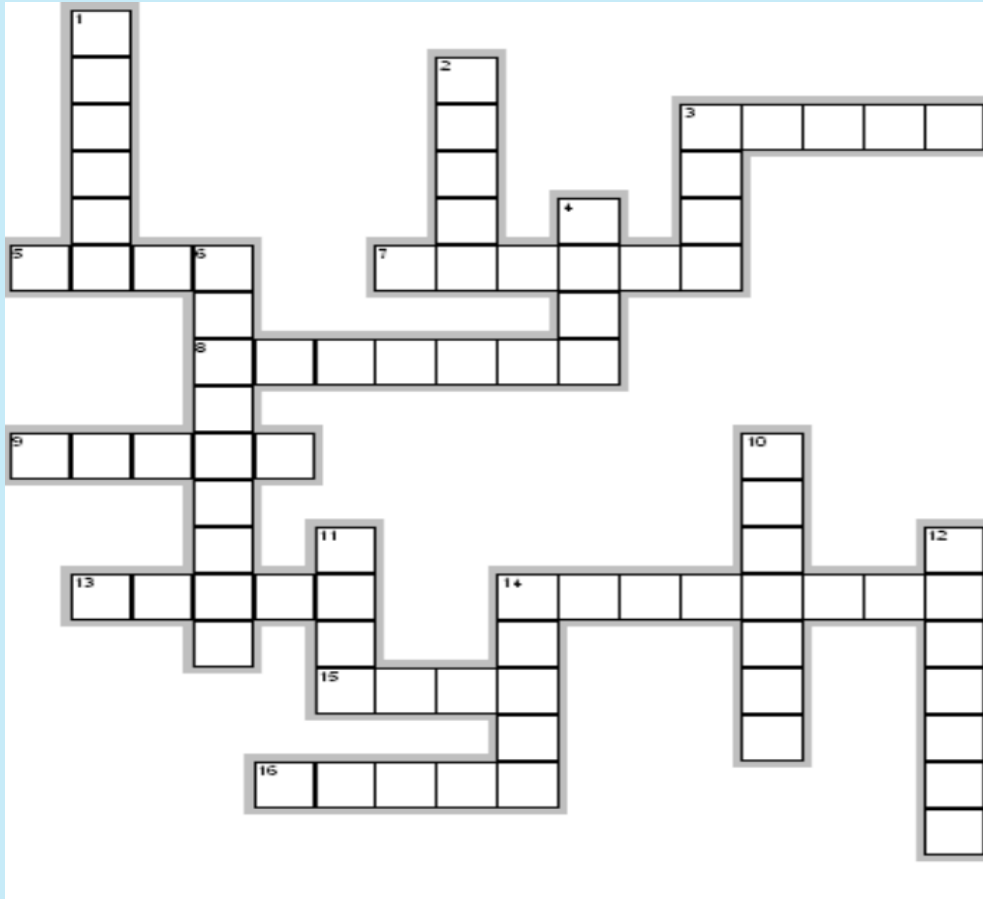
Across

3. to lose blood (5)
5. to experience something physical or emotional (4)
7. to damage a muscle or similar soft part of the body caused by using that part too much (6)
 8. to cut a body open for medical reasons (7)
 9. to use drugs, exercises, etc. to cure a person of a disease or heal an injury (5)
13.   to produce liquid through your skin because you are hot or nervous (5)
14.   to fall because of illness or weakness (8)
 15.   to feel pain in a part of your body (4)
 16.   to make air come out of your throat with a short sound (5)

Down

1. to hurt or cause physical harm to a person (6)
2. to suddenly become unconscious for a short time, usually falling down (5)
3. to cause something to be hurt by heat (4)
4. to swallow or use a medicine or drug (4)
6. to take care of someone or something (4-5)
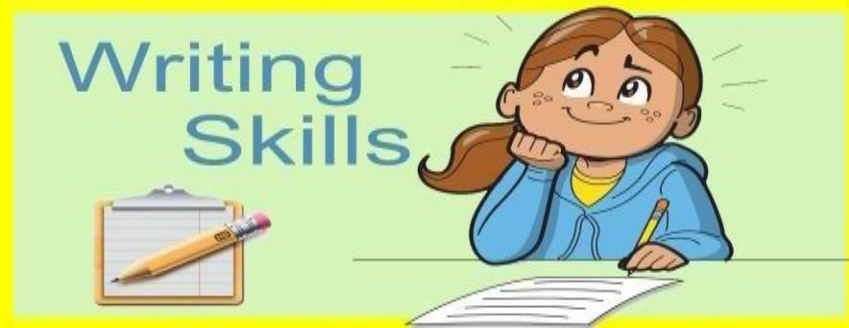10. to rub your skin with your nails (7)

11. to have or cause an uncomfortable feeling on the skin (4)
12. (an illness) to become more serious (7)
14. to get an illness, especially one caused by bacteria or a virus (5)

CROSSWORD- PERSONALITY
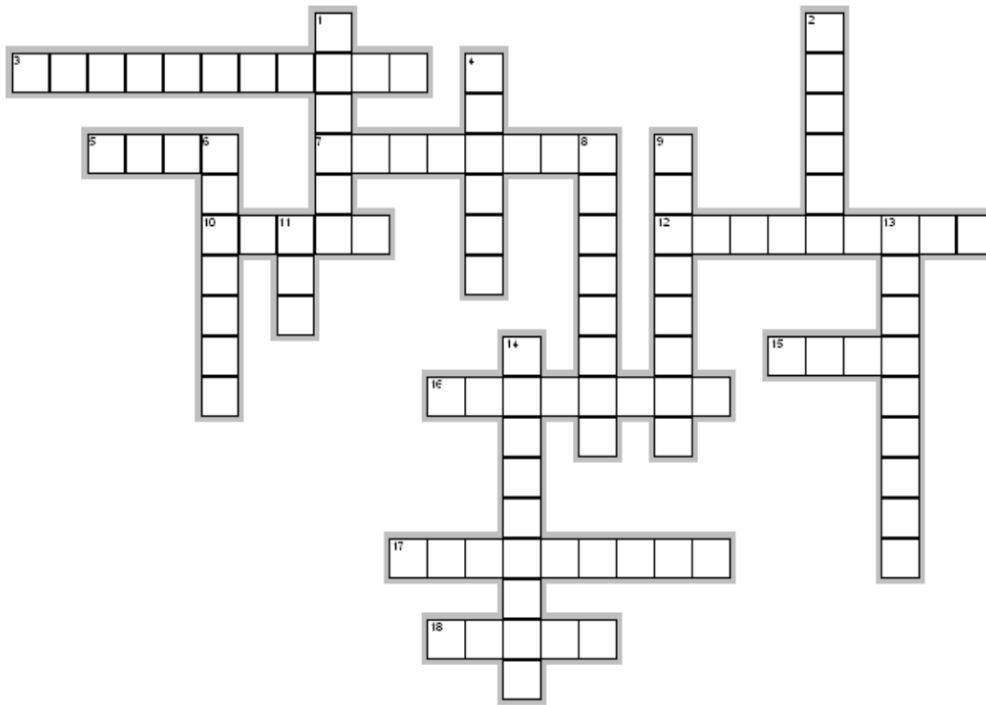
Across

3. Describes a person who becomes angry and annoyed easily (11)
5. Helpful and thinking of other people's feelings (4)
7. Describes someone who likes to give presents to people or who helps friends by buying things for them (8)
10. Describes someone who is rude and unkind (11)
12. Easily annoyed by someone's actions or mistakes or because you must wait (9)
15. Not willing to work or use any effort (4)
16. Not taking or showing enough care or attention (8)
17. Having a strong wish to be successful, powerful, or rich (9)
18. Humorous, causing laughter (5)

	Down
	1. Clever and quick to learn (6) 2. Describes someone who is serious and makes you follow the rules (6) 4. Not interesting or exciting. (6) 6. Having lots of ideas and enthusiasm; energetic and forceful (7) 8. Describes someone who likes to meet and spend time with other people (8) 9. If an adult is childish, they behave badly like a child (5)
	11. Nervous and uncomfortable with other people (3) 13. Relaxed and not easily upset or worried (9) 14. Very intelligent (7)

Q1.	As Riya Jain of 214, Lawrence Apartments, Green Street, Noida, you believe that setting up a local farmer's market in your neighborhood could greatly benefit both the community and local farmers. Write a letter to the MLA of your city area, in about 120 words explaining the advantages of such a market, how it can support local agriculture, and the potential positive impacts on the community's excess of fresh produce. Express your willingness to volunteer for the market's establishment.
Q2.	The following excerpt is taken from 'The Times of India' on the ill treatment. of animals and steps to prevent it. It is distressing to see the attitude of people towards animals and find that cases of cruelty towards animals are increasing. The following pie-chart represents the attitude of people towards animals. Write the analysis of the above statement in 100-120 words.

ill Treatment of Animals

Treat animals as Slave
15%

Indifferent Attitude
35%

Selfish Interest
50%
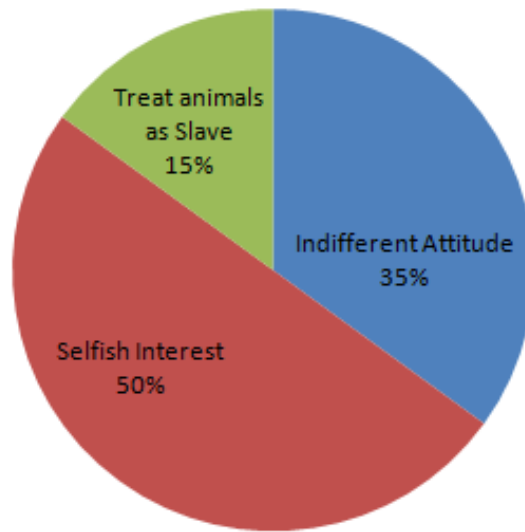
COMMUNICATION SKILLS

Prepare following topics for ASL and prepare write-ups for the same in about 100-120 words.

1. G-20
2. Developed Bharat
3. Make in India
4. Social media and its impact
5. Natural resource management in a sustainable way

DARSHAN ACADEMY

SUMMER ASSIGNMENT 2024-25

GRADE X, SUBJECT: – **हिंदी (पाठ्यक्रम ब)**

*कबीरदास के दोहों में धार्मिक आडम्बरों का विरोध मिलता है ,इसका क्या कारण है ?कबीर की समकालीन परिस्थितियों का परिचय देते हुए पाठ्येत्तर कोई दस कबीर कृत दोहे लिखिए जो आज भी प्रासंगिक है उनसे मिलनेवाली शिक्षा भी लिखिए।

* अपने घर अथवा पड़ोस के किसी वरिष्ठ व्यक्ति के समय की शिक्षा प्रणाली पर चर्चा करते हुए अपनी आधुनिक शिक्षा प्रणाली के साथ तुलना कीजिय। सारीबात चित का वीडियो बनाइए तथा बुकलेट भी बनाइए।

*शरीर के अंगों पर आधारित कोई 15 मुहावरे अर्थ सहित कलात्मकता से प्रस्तुत कीजिए|

*अपनी मातृभाषा में एक कहानी सुनते हुए अपनी वीडियो बनाइए कहानी पूर्ण हाव भाव के साथ सुनाएंगे कहानी स्कूल की वर्दी पहन कर सुनाएँ |

टिप्पणी

सारा परियोजना कार्य आकर्षक ,सृजनात्मक और कलात्मक होना चाहिए। कार्य को आकर्षक बनाने के लिए आप भिन्न -भिन्न रंगों का और चित्रों का प्रयोग कर सकते है

सारा कार्य आतंरिक कार्य के अंतर्गत जाँचा जाएगा

LOTS

1. What is a word-processing software?

2. What are the tasks that a spreadsheet can do?

3. Name some popular word-processing software.

4. Name the different components of a spreadsheet.

5. What are the different kinds of data that can be entered in a worksheet?

6. Write the two ways to do calculation in a worksheet.

7. What is a Quick Access toolbar? Where is it located?

8. In how many ways can you format the cell contents? Explain.

HOTS

1. What is the default alignment of text and number data in a cell?

2. By default, how many buttons are equipped in the Quick Access Toolbar? Can we add/remove buttons or options in the Quick Access Toolbar?

3. Write the steps to rename a worksheet.

4. What is the extension of a LibreOffice Calc file?

5. Which symbol is used to insert a formula in a worksheet?

DARSHAN ACADEMY

SUMMER ASSIGNMENT 2024-25

GRADE X, SUBJECT: – MATHEMATICS

General Instruction: Do Q.1 to 31 in assignment notebook.

1.	If -3 is zero of the quadratic polynomial $(k-1)x^2+kx-3$, then find the value of k.
2.	Does the polynomial $a^4 + 4a^2 + 5$ have real zeroes?
3.	Find a quadratic polynomial, the sum and product of whose zeroes are √2 and -3/2, respectively. Also find its zeroes.
4.	Check whether $(28)^n$ ends with the digit 0,5 for any natural number n.
5.	If two positive integers p and q can be expressed as $p=ab^2$ and $q=a^3b$ where a,b are prime numbers then find LCM(p,q).
6.	Find the exponent of 5 in the prime factorisation of 3750.
7.	Given that HCF (25 , 45) = 5 , find their LCM
8.	Show that $\sqrt{5}$ is an irrational number.
9.	Two dice are thrown at the same time. Determine the probability that the difference of the numbers on the two dice is 2.
10.	Compute the zeroes of the polynomial $8x^2 – 8x – 16$. Also, establish a relationship between the zeroes and coefficients.
11.	If – 5 is a root of the quadratic equation $2x^2 + px – 15 = 0$ and the quadratic equation $p(x^2 + x) + k = 0$ has equal roots, find the value of k.
12.	If α and β are zeros of $2x^2 – 4x+ 5$, then find the value of $\alpha^3 +\beta^3$
13.	Find the value of k for which the equation $x^2 + k(2x + k – 1) + 2 = 0$ has real and equal roots.
14.	A coin is tossed two times what is the probability of getting at the most one head.
15.	A coin is tossed 3 times. List all the possible outcomes. Find the probability of getting (i) all heads (ii) at least 2 heads
16.	What is the probability that a non-leap year selected at random will contains 53 Sunday?

17.	If one zero of the zeroes of the polynomial $(a^2 + 9) x^2 + 13x + 6a$ is reciprocal of the other, find the value of a.
18.	Two dice are thrown simultaneously. Find the probability that the sum of the numbers appearing on the dice is (i) 7 (ii) a prime number (iii) 1
19.	A coin is tossed 3 times. List the possible outcomes. Find the probability of getting (i) all heads (ii) at least 2 heads
20.	There is a circular path around a sports field. Shyama takes 18 minutes to drive one round of the field, while Sunny takes 12 minutes for the same. Suppose they both start at the same point and at the same time and go in the same direction. After how many minutes will they meet again at the starting point?
21.	Solve for x and y : $\dfrac{2}{x} + \dfrac{3}{y} = 13 , \dfrac{5}{x} - \dfrac{4}{y} = -2$
22.	The sum of the digits of a two digit number is 12.The number obtained by reversing the order of the digits of the given number exceeds the given number by 18. Find the two digit number.
23.	A train travels 360 km at a uniform speed. If the speed had been 5 km/h more, it would have taken 1 hour less for the same journey. Find the speed of the train.
24.	Mr. RK Aggrawal is the owner of a famous amusement park in Delhi. Generally he does not go to park and it is managed by team of staff. The ticket charge for the park is Rs 150 for children and Rs 400 for adults. One day Mr. Aggrawal decided to check the park and went there. When he checked the cash counter, he found that 480 tickets were sold and Rs 134500 was collected. i) Let the number of children visited be x and the number of adults

	visited be y. Which of the following is the correct system of equation that models the problem?
	(ii) How many children attended?
	iii) How many adults attended?
	iv) How much amount collected if 300 children and 350 adults attended?
25.	Determine the value of k for which the given system of equations has unique solution: a) 2x − 3y = 1 ; k x + 5y = 7 b) 4x − 5y = k ; 2x − 3 y = 12
26.	Find the value of k, for which the system of equations has infinitely many solutions. a) 2x −3y = 7 ; (k+2) x − (2k+1) y = 3(2k−1) b) x + (k+1) y =5 ; (k+1) x + 9 y = 8k − 1
27.	Solve the following system of equations by any algebraic method. a) x + y = 3, 2x + 5y = 12 b) x − 2y − 5 = 0, 3x + 5y − 6 = 0 c) 2x − 3y +13 = 0, 3x − 2y + 12 = 0 d) 3x − 4y −1 = 0, 2x − y + 5 = 0
28.	Represent the following equations on the graph and determine the vertices of the triangle, so formed. a) 2y − x = 8, 5y − x = 14, y − 2 x = 1 b) y = x, y = 0, 3x + 3y = 10
29.	Draw the graph of x − y + 1 = 0 and 3x + 2y −12 = 0. Calculate the area of the triangle bounded by these lines and the x-axis.
30.	Solve the system of equations x − y = 1, 2x + y = 8 graphically. Shade the area bounded by these lines and x-axis. Also find its area.
31.	The age of father is twice the sum of ages of his two children. Ten years hence, the age of father will be three-quarter of the sum of the ages of his children then. Find the present age of father.
32.	Prepare your own MATHEMATICS Dictionary using coloured A4 sized sheets .Write all the important formulae and results from the whole syllabus of grade x.Use it as a ready reckoner throughout the year.
33.	Create a beautiful design using geometrical patterns / tessellations on A3 sized sheet

DARSHAN ACADEMY

SUMMER ASSIGNMENT 2024-25

GRADE X, SUBJECT: – SOCIAL SCIENCE

Dear Students,

As we embark on our summer holidays, it's essential to keep the learning momentum alive, even amidst the relaxation and leisure. For the students of Class X in Social Science, this holiday homework serves as an opportunity to delve deeper into the fascinating realms of history, geography, civics, and economics.

Through a carefully curated set of assignments, you all will –

- Explore various concepts
- Analyse historical events
- Understand geographical phenomena
- Comprehend civic duties, and
- Grasp economic principles.

This social science assignment presents an exciting chance for you to explore the wonders of the natural world that envelops you. Its aim is to inspire you to observe, inquire, and gain knowledge about the local environment's intricacies.

The tasks included in this summer holiday homework are designed to engage students actively, sparking their curiosity and nurturing their intellectual growth. From researching significant historical figures to mapping out geographical regions, from analysing political systems to understanding economic theories, each assignment is crafted to broaden students' horizons and deepen their understanding of the world around them. As students immerse themselves in these activities, they will not only enrich their knowledge of Social Science but also develop essential skills that will serve them well beyond the confines of the classroom, fostering a lifelong love for learning and exploration.

General Instruction: i) Do all the activities on A4 sized sheet

ii) Submit the assignment after vacations in a folder.

ACTIVITY 1- 'G-20 Summit Snapshot: Report & Visual Recap'-

- ✓ Research the highlights of the recent G-20 summit in Delhi and draft a brief report summarizing key discussions and outcomes.
- ✓ Incorporate visually captivating images from the summit to enhance your report's presentation.
- ✓ Compile your report and visuals neatly, ready to share with the class upon return.
- ✓ Reflect on the significance of global economic cooperation as showcased in the G-20 summit.

ACTIVITY 2- 'Empowerment Through Knowledge: Choose Your Cause - Project File Creation'-

Prepare a Project File on **any** of the following topics-

1.**Consumer Rights**- The students must incorporate about following key matter: a. Enactment of COPRA 1986 and its benefits, Various Consumer Rights, Role of WTO in protection of Consumers

2.**Social issues-** Social issues in Indian Society, Reforms initiated to combat the social issues, Role of Popular leaders and movements.

3.**Sustainable development-** Need of development, Importance of development, Policies initiated to adopt measures for Sustainable Growth.

General Instructions:

1. **Cover page-** Displaying the topic.

2. **Acknowledgement** – Thanking the people or institution that has helped you in

completion of your project.

3. **Certificate-** Mentioning your name and the name of teacher under whose supervision

you have completed your work.

4. **Index-** Giving the list of contents with page numbers.

5. **Introduction-** Giving the purpose and importance of a study.

6. **Chapters-** Give a title to each chapter along with details, pictures and newspaper

cuttings.

7. **Conclusion-** What do you learn from your study?

8. **Bibliography-** Showing the sources from where you have gathered information. Students can use primary as well as secondary sources for the research work.

9. The students must submit **original work.**

10. Project Report should be hand written only & must include-

.   • **Data/Statistical Analysis/Map work**

          • **Analysis/Explanation and interpretation**

11. Eco-friendly materials can be used by students.

ACTIVITY 3- 'Island Expeditions: Exploring the Mysteries of Lakshadweep and Andaman Nicobar - A Journey Through Research and Discovery' -

Make a physical or virtual visit to Lakshadweep and Andaman Nicobar Islands. Research about them, analysis & present the report in an artistic manner (approx. 4-5 pages) highlighting the following about the islands–

    o   Floora and Fauna

- o Tourist attractions
- o Ratio of tribal population and tribal culture

Note- All the essentials of Project file should be included.

ACTIVITY 4- Gender equality and inequality in Contemporary India-

- ✓ Create a Campaign Poster to create awareness on gender issues faced in the country.
- ✓ Analyse the facts & pen down the possible solutions in the medium of your choice like : Slide, Google Drawing, Adobe, Canva or any other to make your poster. You are most welcome to draw it yourself.
- ✓ Take a printout of the poster and stick it in your file project.
- ✓ Write about the various aspects of equality and inequality with respect to gender wherein include Government laws, accommodations, different walks of life, statistics etc

ACTIVITY 5- 'Mapping the Path to a Sustainable Future: A Creative Journey through the Sustainable Development Goals'

- ✓ Gather information about various SDGs & their objective.
- ✓ Draw a creative flow chart / drawing/ mind map on Sustainable Developmental Goals (SGD).
- ✓ How can students contribute & promote sustainable development.

ACTIVITY 6 – Knowing our Agriculture

- ✓ India is considered as agrarian country. Justify
- ✓ List the various crops grown in the country.
- ✓ Prepare a table of content for the following crops as according to sample-

S.no.	Name of the Crop	Climatic conditions required	Soil type	Season of cropping	States	Important information about crop
1	Rice					
2	Wheat					
3	Sugarcane					
4	Tea					
5	Coffee					
6.	Jute					
7.	Cottan					
8.	Millets					
9.	Pulses					
10.	Maize					

ACTIVITY 7 - Current Affairs

- ✓ Read the newspaper & listen to news channels daily to abreast yourself with latest developments in politics.
- ✓ Find out the current political situation
- ✓ Be an artist and let your brush paint your imagination about the present political scenario in the form of a cartoon or comic strip.

ACTIVITY 8- Reflection

Compose a reflection detailing your experiences throughout this social science adventure vacation. Delve into the insights gained and the transformative impact this assignment had on your perception of the natural world.

Wishing you an extraordinary summer vacation brimming with unearthing and thrilling adventures!

DARSHAN ACADEMY

SUMMER ASSIGNMENT 2024-25

GRADE X, SUBJECT: – SCIENCE

INSTRUCTIONS-Please maintain the quality of work. Marks of holiday homework will be added in your internal assessment marks (hw /portfolio and subject enrichment).

Activity-1 :
Comics
Chronicle
Read the comic books of the following chapters of NCERT from CBSE - Diksha Portal and present the summary of these lessons in the form of a graphic organizer in your science notes copy.

a) Electricity

b) Only one earth-handle with care

Activity 2
Toys from trash
Visit Arvind Gupta's site –Toys from trash (for reference). Make any four simple toys/ games/ puzzles (using waste material) related to different concepts of –
a) Light
b) Electricity
c) Magnetism

Activity 3
 Model making- Make one model (with it write up) on any of these sub themes (preferably working)
Theme- Science and technology for sustainable development
Sub themes-
   a) Sustainable agricultural practices
   b) Cleanliness and health
   c) Resources management
   d) Industrial development
   e) Future transport and communication

GUIDELINES FOR MAKING MODELS/EXHIBITS - The exhibit must be original in design and content. Its scientific principles should be substantiated with data collected through experimentation. Engineering projects should have substantial innovation over the existing solutions. Here are some desirable features: 1
 *Working model, clearly demonstrating a science concept OR an engineering solution that addresses a real-life problem

*Innovative solution, which is original, or a substantial innovation over existing solutions or explorations
*Used a scientific approach
*Relevance to real life

Activity 4 : **Art integrated project on your pair state Lesson mapped—Our environment**
Project- Collect information on plastic waste management in the state; type of efforts/initiatives taken by the locals and state government to reduce the use of single use plastic in the state
Which ecofriendly substitutes are used in the state?
Make an attractive project file Supplement your report with suitable picture and drawings.

Chemical Reactions and Equations

When steam is passed through red hot iron, iron oxide and hydrogen gas is formed. The balanced equation for the reaction is shown below.

$$3Fe \ + \ 4H_2O \longrightarrow Fe_3O_4 \ + \ 4H_2$$

(Iron)   (water)   (iron oxide)   (hydrogen)

1 Is heating iron to red hot a physical or a chemical change? Explain your answer.

_____

_____

2 What is true for the balanced chemical equation shown above?

A. Four atoms of water combine with iron to form four atoms of hydrogen.
B. Three atoms of iron combine with water to form four atoms of hydrogen.
C. Four molecules of water combine with iron to form an atom of iron oxide.
D. Three atoms of iron combine with water to form one molecule of iron oxide.

Cellular respiration is a chemical process by which cells convert glucose to energy. The equation given below shows the reaction for cellular respiration.

$$C_6H_{12}O_6 \ + \ 6O_2 \longrightarrow 6CO_2 \ + \ 6H_2O \ + \ Energy$$

(glucose)   (oxygen)   (carbon   (water)
                                 dioxide)
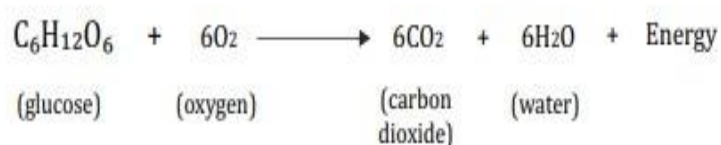
3 In the above reaction, which substance is oxidised?

_____

_____

4 Carbon dioxide and water are the two new substances formed during cellular respiration. What are they known as?

    A.   Reactants
    B.   Mixtures
    C.   Catalysts
    D.   Products

A piece of magnesium ribbon is added to a flask containing dilute hydrochloric acid.
Hydrogen gas is formed which is collected in the measuring cylinder.
The amount of hydrogen formed with time is plotted on a graph.
The line on the graph indicates the rate of chemical reaction occurring in the flask.
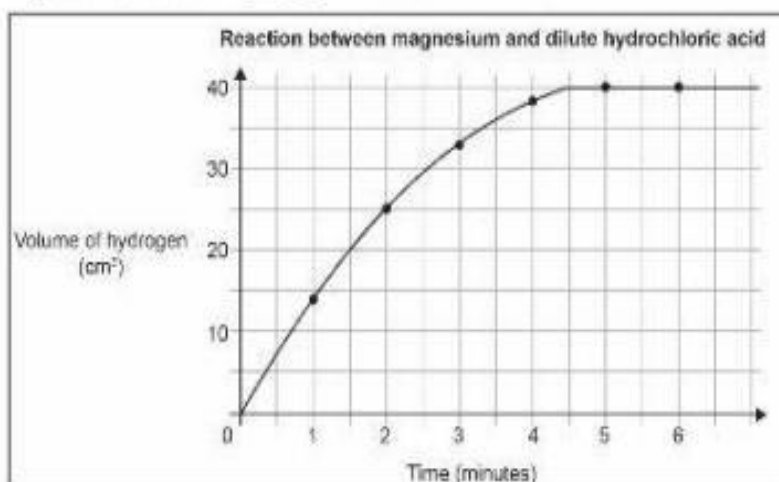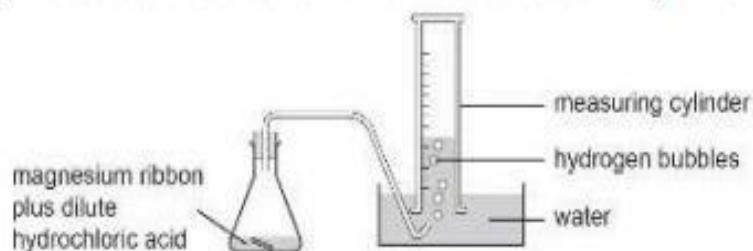
5 At what time is the reaction rate the fastest in the flask?

    A.   At 1 minute
    B.   At 3 minutes
    C.   At 4 minutes
    D.   At 6 minutes

6   The reaction is repeated with magnesium powder in place of magnesium ribbon under the same conditions. Will the reaction rate increase or decrease?

Explain your answer with reference to the volume of hydrogen formed in the flask at 2 minutes.

_____

_____

7   Which of these could increase the rate of reaction in the flask?

Circle 'Yes' or 'No' for each row.

Will this increase the rate of reaction?	Yes or No
Adding more acid to the flask	Yes/No
Heating the acid in the flask	Yes/No
Using a higher concentration of acid	Yes/No

8   Magnesium reacts with hydrochloric acid to form magnesium chloride and hydrogen gas. Write a balanced chemical equation to show the reaction.

_____

_____

9   Which of these is an example of decomposition reaction?

A.   Melting of glaciers
B.   Rusting of old bridges
C.   Rotting of fruits and vegetables
D.   Absorption of carbon dioxide by oceans

10   Methane gas released from waste water treatment plants can be used as a source of fuel. Which chemical equation represents combustion of methane to produce heat energy?

A. $CH_4 + CO_2 \rightarrow 2O_2 + 2H_2O$
B. $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$
C. $2O_2 + 2H_2O \rightarrow CO_2 + CH_4$
D. $CO_2 + 2O_2 \rightarrow CH_4 + 2H_2O$

Life Processes

The process of filtering blood outside the human body to remove harmful wastes is called Dialysis.
Dialysis takes place in an enclosed chamber.
The given diagram shows how dialysis works.

blood with wastes coming from human body

used dialysis solution

blood flowing through hollow pipes

fresh dialysis solution

purified blood going to human body

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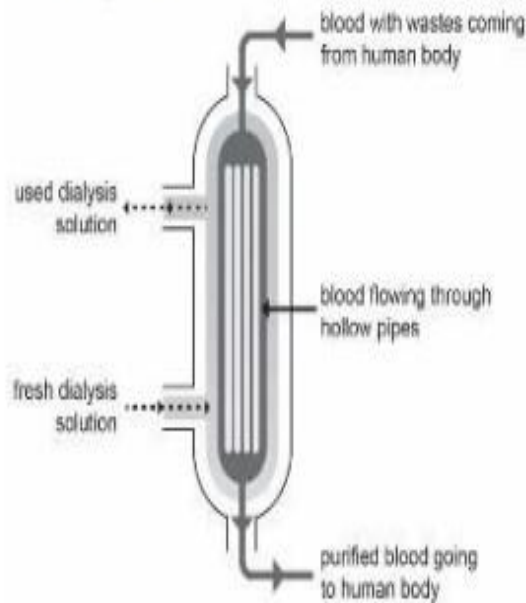
1 Which of the following must be true for a dialysis chamber?
Circle 'Yes' or 'No' to indicate your response.

Is this necessary for dialysis?	Yes or No
Used dialysis solution is recycled back to the chamber as fresh dialysis solution.	Yes/No
The hollow pipes should have semi-permeable walls.	Yes/No
The blood pressure inside the hollow pipes should be higher than that inside the human body	Yes/No

2 What type of blood vessel brings in the blood with wastes?

_____

_____

3 Which organ acts like a natural dialysis chamber in the human body?

A. Heart
B. Brain
C. Kidneys
D. Pancreas

Sanjeev wanted to check whether plant leaves release water vapour.
He took a potted plant and covered the plant with a plastic bag.
The picture below shows what he observed after 2 hours.

at the start of
the activity

after
two hours

plant
leaf
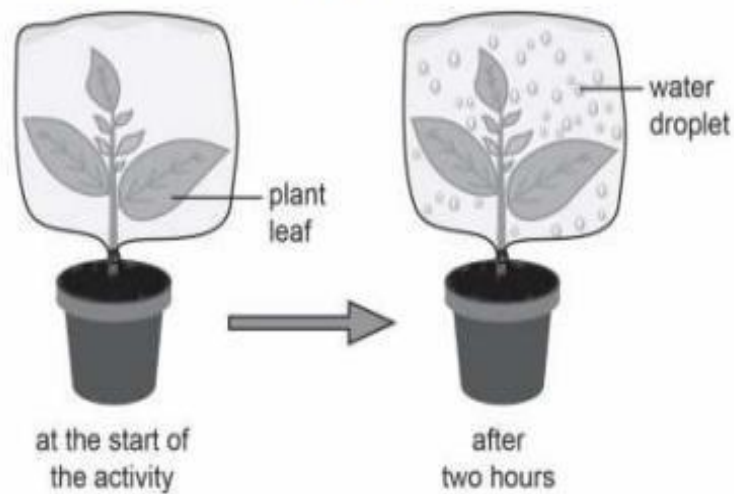
water
droplet

4 Sanjeev compared the results of the activity with a new pot to confirm his findings.
Which of the following best represents the new pot?

A.   B.   C.   D.
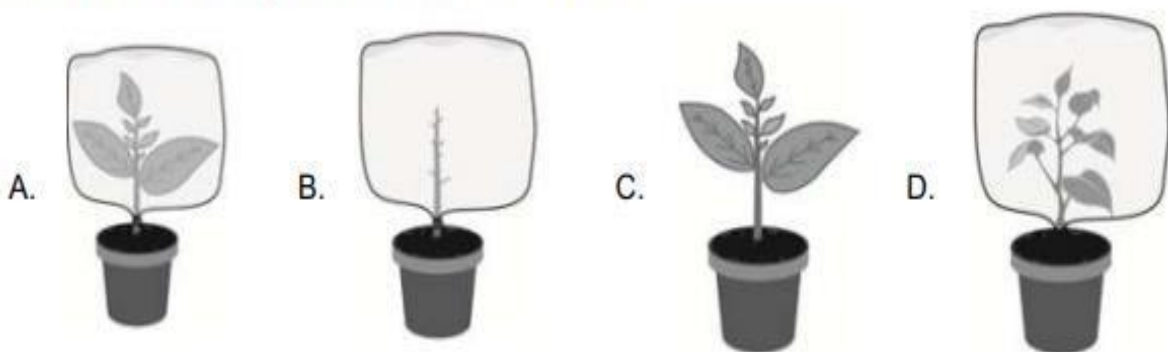
5 How does the loss of water by plant leaves help the plant? Mention two points.

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Blood transports oxygen and carbon dioxide to different parts of the human body.
The exchange of gases between blood and inhaled air takes place in the capillaries of lungs.
The diagram below shows how blood circulates in the human body.
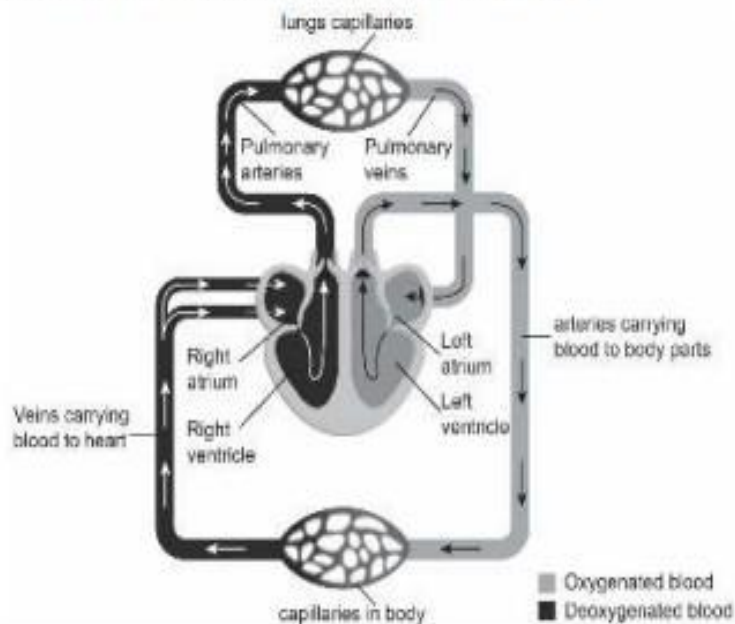
6   What statement is supported by the diagram?

    A.   All arteries carry oxygenated blood.
    B.   Capillaries are permeable to gases.
    C.   The wall between the left ventricle and the right ventricle is porous.
    D.   Blood can flow back and forth between the right atrium and the right ventricle.

7   Which of these will be the immediate effect if gaseous exchange in the lung capillaries reduces?

    A.   Blood will flow in the reverse direction.
    B.   Pulmonary veins will receive blood with less oxygen.
    C.   The space inside the left and the right atrium will increase.
    D.   The pressure of blood inside the capillaries will decrease.

The diagram below shows the human alimentary canal.
1, 2, 3 and 4 are four different organs that are parts of the canal.

8 Which of the labelled parts represents the liver?

A. 1
B. 2
C. 3
D. 4

9 Pancreas secretes lipase enzyme. Mr. Ayub is suffering from malfunctioning of the pancreas. Which of the following will be adversely affected in Mr. Ayub's body?

A. Digestion of carbohydrates
B. Digestion of proteins
C. Digestion of fats
D. Digestion of vitamins

Small hair-like structures line the upper part of the human respiratory tract.
These structures trap the dust particles, germs and chemicals entering the human body during breathing.

10 Smoking is likely to cause infections in the respiratory tract.
Which statement best explains the fact?

A. Smoking destroys the hair-like structures.
B. Smoking causes excessive growth of the hair-like structures.
C. Smoking stimulates the hair-like structures to release harmful chemicals.
D. Smoking makes the hair-like structures wet and they fail to trap dust particles.

Light- Reflection and Refraction

The pictures show four ray diagrams of images formed by concave mirrors.
P is the pole or centre of the reflecting surface of the mirror.
C is the centre of curvature of the mirror.
F is the focus of the mirror.
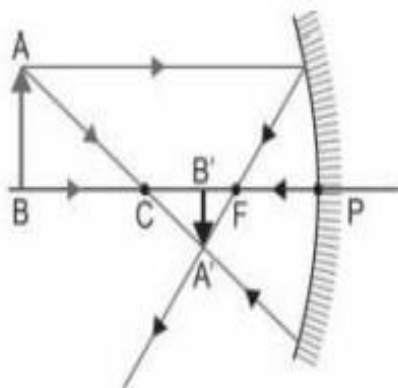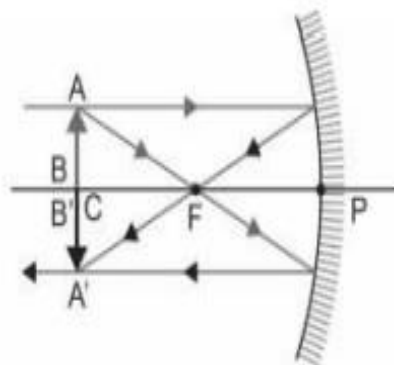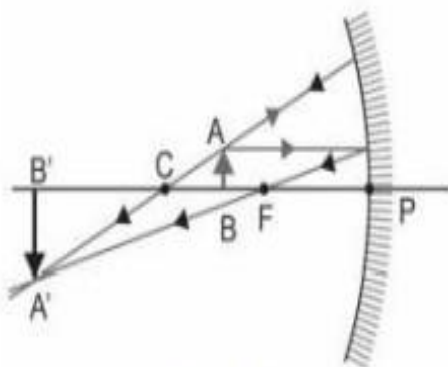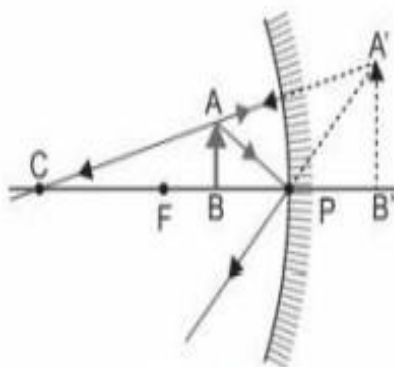AB is the object and A'B' is the image of the object.

Diagram 1

Diagram 2

Diagram 3

Diagram 4

1 Which of these can be concluded from diagram 1?

    A.   Image is formed at the focus.

    B.   Size of the image is equal to the size of the object.

    C.   Distance between pole and centre of curvature is twice the focal length.

    D.   Distance between the image and focus is half the distance between the object and focus.

2 Which diagram shows a real, inverted and enlarged image formed by the mirror?

A. Diagram 1
B. Diagram 2
C. Diagram 3
D. Diagram 4

3 In which condition does a concave mirror produce a virtual image?

A. When object is located within the focal length
B. When object is located at the centre of curvature
C. When object is located in between infinity and the centre of curvature
D. When object is located in between the centre of curvature and the focus

4 Solar cookers contain a concave mirror.
How does the concave mirror help in heating the food?
Circle 'Yes' or 'No' for the correct response.

How does the concave mirror heat the food?	Yes or No
Sun's rays are absorbed by the mirror.	Yes/No
Sun's rays reflected by the mirror converge at a point.	Yes/No
Sun's rays diverge out when reflected by the mirror.	Yes/No

The pictures show the ray diagrams of images formed by convex mirrors.
P is the pole or centre of the reflecting surface of the mirror.
C is the centre of curvature of the mirror.
F is the focus of the mirror.
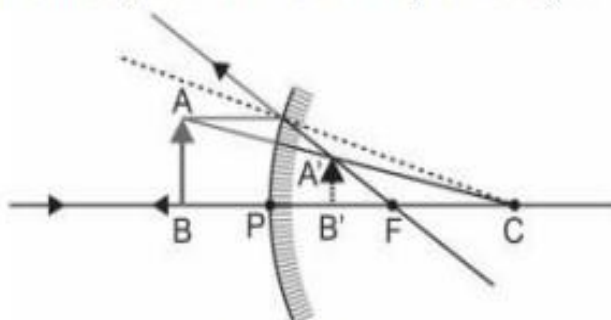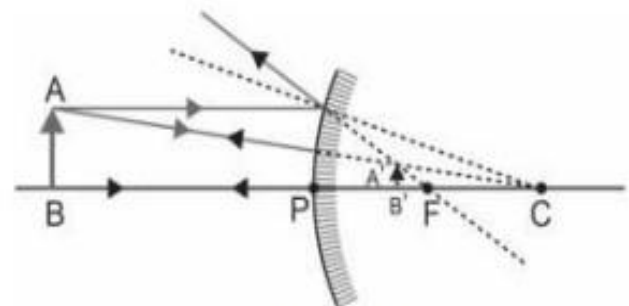AB is the object and A'B' is the image of the object.

Diagram 1   Diagram 2

5 Which statement is supported by the two diagrams?
Circle 'Yes' or 'No' for each statement.

Is the statement supported by the two diagrams?	Yes or No
Convex mirrors produce virtual images	Yes/No
Convex mirrors produce erect images	Yes/No
Convex mirrors have their focus behind the mirrors	Yes/No

6 Which of these is a convex mirror?

A. Shaving mirror
B. Dentist's mirror
C. Headlight mirror of a bike
D. Rear-view mirror of a car

7 A mirror magnifies the image of an object by minus 1.5 times.
Which of the following is true about the image produced by the mirror

A. The image is real and larger than the object.
B. The image is real and smaller than the object.
C. The image is virtual and larger than the object.
D. The image is virtual and smaller than the object.

The table below shows the refractive index of different materials.

	Water	Kerosene	Flint glass	Diamond
Refractive index of the material	1.33	1.44	1.65	2.42

The formula for calculating the refractive index (n_m) of a material is,

$$n_m = \frac{Speef\ of\ light\ in\ X}{Speef\ of\ light\ in\ the\ medium}$$

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8 What does X stand for?

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The picture shows the path of light as it travels from one medium to another.

Medium 1

Medium 2

incident ray

refracted ray
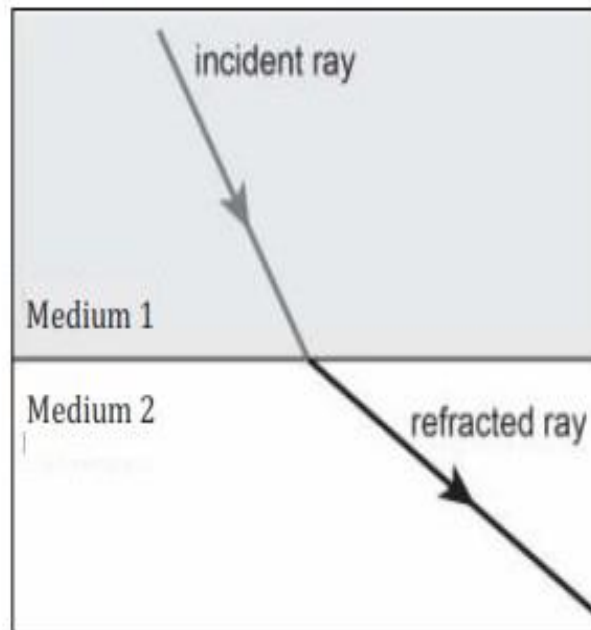
9 What is medium 1 and medium 2?

	Medium 1	Medium 2
A.	Water	Kerosene
B.	Kerosene	Diamond
C.	Flint glass	Water
D.	Kerosene	Flint glass

10 The power of a lens (P) is calculated by the formula,

$$P = \frac{1}{f}$$

where f is the focal length of the lens.
A lens has a focal length of – 0.25 m.
Is it a convex lens or a concave lens? Explain your answer.

_____

_____