



Sri Guru Harkrishan Public School,

Dugri Road Ludhiana

HOLIDAYS HOMEWORK

Relax ♥

Explore ☀

Learn 📖

Have Fun 😊

“Holidays
are the
perfect time
to relax,
explore,
and
grow. ♥

Come back
refreshed,
recharged and
ready to *shine!*”

Use this time to do what makes
your *soul happy* and your future bright. ♥

KEEP LEARNING, KEEP GROWING, KEEP SMILING!



SRI GURU HARKRISHAN PUBLIC SCHOOL, LUDHIANA
SUMMER VACATION HOMEWORK 2026

Class IX

Science

A) Task 1: Perform the hands on activity at home using different materials from kitchen lab and demonstrate the following:

- (i) Homogeneous and Heterogeneous mixtures
- (ii) Colloids and suspension
- (iii) Tyndall effect
- (iv) Physical and chemical change

Submission: Prepare the investigatory project for the above activities performed at the kitchen lab.

Format of File :-

Name of the project

Acknowledgement

Index

Introduction

Content (Including Pictures, mini anchor charts etc, bibliography)

Summary

Bibliography

References

B) Task 2: Students will prepare an interactive cartoon based comic strip to depict key concepts in cell biology in a fun and engaging way!

Kindly prepare as per the Roll.no based allocation.

Title: "The Adventures of Cellie and Orgo"

Roll No. 1-10

Comic Strip 1: Meet "Cellie and Orgo"

Panel 1: Introduce Cellie, a friendly animal cell, and Orgo, a quirky organelle.

Panel 2: Cellie explains the importance of each organelle in the cell.

Panel 3: Orgo, full of energy, eagerly volunteers to show Cellie around the cell.

Roll no.10-20

Comic Strip 2: The Cell Membrane

Panel 1: Cellie and Orgo approach the cell membrane.

Panel 2: Orgo describes the cell membrane's role as a barrier and gatekeeper of the cell.

Panel 3: They encounter a molecule trying to enter the cell, but the cell membrane regulates its passage.

Roll no.20-30

Comic Strip 3: Inside the Cell

Panel 1: Cellie and Orgo venture into the cytoplasm.

Panel 2: Orgo points out various organelles like the nucleus, mitochondria, and endoplasmic reticulum.

Panel 3: They marvel at the bustling activity within the cell, with organelles working together like a well-oiled machine.

Roll no.30-40

Comic Strip 4: The Mighty Mitochondria

Panel 1: Orgo introduces Cellie to the mitochondria, the powerhouse of the cell.

Panel 2: They witness the mitochondria converting glucose into energy through cellular respiration.

Panel 3: Cellie thanks the mitochondria for providing energy to fuel the cell's activities.
Submission: Each one should prepare only one page of comic strip in A3 Size sheet. The comic strip needs to be colourful, interactive and loaded with information.

C) Task 3: Make a project on graphical representation of motion.

Page 1. Introduction

Page 2. Distance-time graph (Make separate graphs)

Page 3. Speed-time graph (Make separate graphs)

Page 3. How speed can be calculated from distance-time graph ? Explain by choosing a suitable example.

Page 4. How acceleration and distance can be calculated from velocity-time graph ? Explain by choosing a suitable example.

Page 5. Bibliography

Submission: Prepare a neat and clean project file and write all the points on an A3 size sheets

Worksheet

Ch-5 The fundamental unit of life I. Answer the following :

Why is Plasma Membrane called a selective permeable membrane and Cell Wall is called as fully permeable membrane ?

Which cell organelle, you think, is known as "Head Quarter" of the cell and why?

What is the nuclear region of the prokaryotic cells called?

Where is Ribosomes synthesized? State the function of this organelle.

What will happen to an animal cell if placed in the hypertonic solution?

Name the only cell organelle seen in prokaryotic cell.

What is plasmolysis?

Why does the skin of your finger shrink when you wash clothes for a long time?

Name the mechanism by which substances like Carbon-di-Oxide and Water move in and out of the cell? Discuss.

Which plastid is responsible for yellow and other colours in petals of flower?

II. Name the organelles which show the analogy written as under.

1. Transporting channels of the cells.
2. Digestive bag of the cell.
3. Storage sacs of the cells.
4. Control room of the cell.
5. Kitchen of the cell.
6. Powerhouse of the cell.
- 7 Packing & dispatching unit of the cell

Subject-Social Science Holidays Homework

Task 1- Observe, your neighborhood, a local park or your hometown during the holidays , identify at least three signs of weathering erosion , deposition(eg pavements ,soil washed away after rain or silt accumulation.

* Take a photograph or draw a sketch of each observation.

* write a short paragraph for each, explaining which natural force caused.

* Suggest one Green Fix to prevent future damage .

Task 2 - Project file on Indian Electoral System.

Prepare a scrapbook / project file with :-

- Meaning of Election
- Universal Adult Franchise
- Election Commission of India
- Types of Election

· Importance of voting

· Electronic Voting Machine

Include drawings newspapers cutting and slogans

Task 3- Prepare a 'Family Emergency Plan' for a natural disaster common in your region. (eg Earthquake , Flood or Heatwave)

· include a list of " Do's and Don't "

· list of 10 essential items you would pack in an emergency kit.

· Design a simple flowchart showing who to contact (emergency services,neighbours relatives)

Task 4- Create a 3D Model on one of the following:-

* The Layers of the Earth (Crust, Mantle, Core)

* The three types of Plate Boundaries (Convergent,Divergent, Transform)

* The Glacier Cycle: Showing how glacier carves a valley.

* The Layers of the Atmosphere.

Submission Guidelines:-

* Use an A4 size folder or a scrapbook.

* Use colors, maps, newspaper clipping .

* Hand written work is preferred to reflect your personal observations.

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Holiday Home work of Class-IX

INFORMATION TECHNOLOGY

Project regarding the IT and ITes industry.

The project will include the following sections:

1. Project Index
2. Certificate of Authenticity
3. Acknowledgments
4. Introduction to IT
5. What are IT Enabled Services (ITes)?
6. Structure of the Indian IT / BPM Industry
7. Core Applications of IT in Society
8. Conclusion..

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Holidays Home work of G-9(English)

Do the following tasks in a separate Copy:

Writing:

A).Your school is organising an Inter-School Quiz Competition for Classes IX and X. Draft a notice inviting students to participate.

B)You are the Head Boy/Head Girl of your school. Write a notice informing students about a Tree Plantation Drive to be held on World Environment Day.

C).Your school library is celebrating Reading Week. Draft a notice informing students about various activities and inviting participation.

D).As the Cultural Secretary, draft a notice for a Poster Making Competition on the topic "Say No to Plastic" for students of Classes VII–X.

E).Your school is organising an Educational Trip to a historical monument. Write a notice informing students about the trip and asking them to submit consent forms.

Grammar:

Section A: Error Detection and Correct
Identify and correct the tense error.

1. She has completed her homework yesterday.
2. By next month, we finish our syllabus.
3. They was playing football when it started raining.
4. I am knowing the answer to this question.
5. The train left before we have reached the station.

Section B: Choose the Correct Option

1. When I entered the room, my sister _____ a book.
a) reads
b) was reading
c) is reading
d) has read
2. By 2030, scientists _____ a cure for this disease.
a) discover
b) discovered
c) will have discovered
d) had discovered
3. He usually _____ to school by bus.
a) go
b) goes
c) went
d) going
4. Look! The baby _____.
a) cries
b) cried
c) is crying
d) has cried
5. We _____ dinner before the guests arrived.
a) had finished
b) have finished
c) finish
d) will finish

Section C: Situation-Based Questions

1. Your friend calls while you are studying. Which sentence best describes the action?
a) I studied.
b) I am studying.
c) I have studied.
d) I had studied.
2. Your teacher asks what you completed before coming to school. You say:
a) I finish my homework.
b) I had finished my homework.
c) I am finishing my homework.
d) I will finish my homework.
3. A weather reporter says:
"Dark clouds are gathering. It _____ soon."
a) rains
b) rained
c) is going to rain
d) has rained

Section D: Rewrite the Sentences

1. She writes a letter. (Change into Present Continuous)
2. They were watching a movie. (Change into Simple Past)
3. I will complete the project. (Change into Future Perfect)
4. He has cleaned the room. (Change into Past Perfect)

Section E: Assertion and Reason

1. Assertion (A): I have lived in Delhi since 2020.

Reason (R): Present Perfect is used for actions completed in the past.

Choose:

- a) Both A and R are true, and R explains A
- b) Both A and R are true, but R does not explain A
- c) A is true, but R is false
- d) A is false, but R is true

2. Assertion (A): She was cooking when I arrived.

Reason (R): Past Continuous shows an action in progress in the past.

- a) Both true and R explains A
- b) Both true, but R doesn't explain A
- c) A true, R false
- d) A false, R true

Section F: Editing Passage

Read and edit the passage:

1. Yesterday I am going to the market. I see many people there. Suddenly, it starts raining, so I run back home.

Literature:

1. Read the chapters and poems done till the May syllabus and write:

*Summary of each chapter and poem in 100 words.

*Main Theme

*Character Sketch of (Grandmother, Sentila, Arenla, Onula, Granddaughter(Sudha Murty) in 100 words.

HINDI

प्रस्तुत का तरीका -- स्कैपबुक/ प्रोजेक्ट फाइल/ सुलेख के लिए नोटबुक

प्रस्तुत के सुझाव पृष्ठी को कलरफुल बनाएं) शीषक को रचनात्मक बनाएं/इमोजी, स्टीकर या छोटी डूडल आट शामिल करें ।

पाठ 3 और 4 का पठन करें । 'झांसी की रानी कवता' का सस्वर वाचन करें और वीर रस की अनुभूत करें । कल्पना कीजिए कि कव की मां को यह पत्र लिखना आता तो , कवता में वणत उनकी छवि और अनुमान के आधार पर लिखिए कि वह कव के लिए पत्र में क्या लिखती ।

PUNAJBI

ਜਮਾਤ ਨੈਵੇ

ਛੋਟੀਆਂ ਕੰਮ

1• ਪੰਜਾਬ ਅਤੇ ਉੜੀਸਾ ਪ੍ਰਾਂਤ ਦੇ ਸੱਭਿਆਚਾਰ ਨੂੰ ਦਰਸਾਉਂਦੇ ਹੋਏ ਉਥੋਂ ਦੇ ਲੋਕ ਨਾਚ ਅਤੇ ਖਿੱਚਵੇ ਦਾ ਵਰਨਣ ਤਸਵੀਰਾਂ/ਸਿਰਤ ਕਰਦੇ ਹੋਏ ਇੱਕ ਪ੍ਰੋਜੈਕਟ ਫਾਈਲ ਤਿਆਰ ਕਰੋ।

2• ਕਿਸੇ ਵੀ ਇੱਕ ਵਿਸ਼ੇ ਤੇ ਸਵੈ ਰਚਨਾ ਲਿਖੋ(ਅਸਲ ਜੀਵਨ ਵਿੱਚ ਵਾਪਰੀ ਕੋਈ ਘਟਨਾ, ਚੁਟਕਲਾ, ਸੰਦੇਸ਼ਕਿਤਾ, ਗੀਤ ਆਦਿ)

3• ਕਰਵਾਏ ਗਏ ਸਿਲੇਬਸ ਦੀ ਦੁਹਰਾਈ ਕਰੋ।

4• ਨਿੱਜੀ ਪੱਤਰ

• ਮਿੱਤਰ / ਸਰੋਲੀ ਨੂੰ ਦਸਵੀਂ ਜਮਾਤ ਵਿੱਚੋਂ ਮੈਰਿਟ 'ਤੇ ਆਇਆ ਹੈ, ਉਸ ਨੂੰ ਵਧਾਈ ਦਿੰਦੇ ਹੋਏ ਪੱਤਰ ਲਿਖੋ।

- ਆਪਣੇ ਿਪਤਾ ਜੀ ਨੰੂ ਿਚੱਠੀ ਿਲਖੇ ਿਜਸ ਿਵੱਚ ਇਹ ਦੱਸੇ ਿਕ ਤੁਸੀਂ ਦਸਵੀਂ ਪਾਸ ਕਰਨ ਉਪਰੰਤ ਤੁਸੀਂ ਕੀ ਫਾ ਚਾਹੁੰਦੇ ਹੋ।
- ਿਵਦੇਸ਼ ਗਏ ਿਪਤਾ ਜੀ ਨੰੂ ਮਾਤਾ ਜੀ ਦੀ ਿਸਰਤ ਖਰਾਬ ਹੋ ਗਈ ਹੈ ਉਸ ਬਾਰੇ ਦੱਸਦੇ ਹੋ ਜਲਦੀ ਵਾਪਸ ਛੱਡ ਲਈ ਪੱਤਰ ਿਲਖੋ।
- ਚਾਚਾ ਜੀ ਨੰੂ ਜਨਮਿਦਨ ਤੇ ਭੇਜੇ ਤੋਹਫੇ ਲਈ ਧੰਨਵਾਦ ਪੱਤਰ ਿਲਖੋ।
- ਿਪਤਾ ਜੀ ਨੰੂ ਪੱਤਰ ਿਲਖ ਕੇ ਆਪਣਾ ਮਹੀਨਾ ਖਰਚ ਵਧਾਉਣ ਲਈ ਿਲਖੋ। (ਸਕੂਲ ਦੀ ਕਾਪੀ ਉੱਤੇ)

5• ਲੇਖ ਿਵਚਾਰ ਪ੍ਰਧਾਨ ਮਿਨ ਜੀਤੈ

ਜਗੁ ਜੀਤ ਨਾਨਕ ਦੁਖੀਆ ਸਭ ਸੰਸਾਰ

ਉਦਮ ਅੱਗੇ ਲਕਸ਼ਮੀ ਪੱਖੇ ਅੱਗੇ ਪੈਣ (ਸਕੂਲ ਦੀਕਾਪੀ ਉੱਤੇ)

6• ਪੋਰਟਫੋਲੀਓ ਬਣਾਓ

1 ਸਕੂਲ ਯੂਨੀਫਾਰਮ ਿਵੱਚ ਤਸਵੀਰ ਿਚਪਕਾ ਕੇ ਆਪਣਾ ਨਾਂ ਿਲਖੋ।

2. ਜਨਮ ਿਮਤੀ

3. ਜਮਾਤ ਸੈਕਸ਼ਨ

4. ਰੋਲ ਨੰਬਰ

5. ਸਕੂਲ ਦਾ ਨਾਂ

6. ਕੱਦ

7 ਸਕੂਲ ਦਾ ਦਾਖਲਾ ਨੰਬਰ

8 ਬਲੱਡ ਗਰੁੱਪ

9 ਆਧਾਰ ਕਾਰਡ

10 ਿਪਤਾ ਦਾ ਨਾਂ

11 ਮਾਤਾ ਦਾ ਨਾਮ

12 ਫੋਨ ਨੰਬਰ

13 ਪਿਰਵਾਰਕ ਮੈਂਬਰਾਂ ਦੀ ਿਗਣਤੀ

14 ਘਰ ਦਾ ਪਤਾ

15 ਮੈਂ ਇਹ ਪਸੰਦ ਨਹੀਂ ਕਰਦਾ ਹਾਂ।

16 ਮੇਰੀ ਤਾਕਤ

17 ਮੇਰੀ ਕਮਜ਼ੋਰੀ

18 ਮੇਰੀ ਮਨ ਪਸੰਦ ਖੇਡ

19 ਮੇਰਾ ਸ਼ੌਕ

20 ਮਾਤਾ ਿਪਤਾ ਬਾਰੇ

21 ਮੇਰੀ ਿਵੱਦਗੀ ਦਾ ਉਦੇਸ਼

22 ਮੈਨੂੰ ਡਰ ਲੱਗਦਾ ਹੈ

23 ਮੇਰਾ ਪੱਕਾ ਿਮੱਤਰ

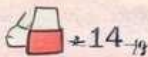
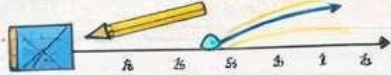

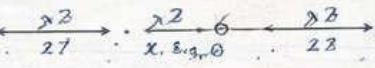














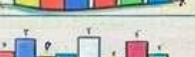



















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CLASS IX

MATHEMATICS MODELS



Roll	Roll No.	Model Name	Pictorial Representation
1		Different Views of 3D Shapes	
2		Representation of Rational Numbers on Number Line	
3		Various Algebraic Identities	
4		Various Types of Quadrilaterals	
5		Square and Square Roots	
6		Cube and Cube Roots	
7		Finding Square Root by Prime Factorization	
8		Making a Quadrilateral	
9		Data Handling: Pie Chart	
10		Data Handling: Double Bar Graph	
11		Volume of a Cuboid	
12		Volume of a Cube	
13		Construction of a Quadrilateral	
14		Division of Fractions	
15		Direct and Inverse Proportions	
16		Types of Symmetry	
17		Angle Sum Property of Quadrilateral	
18		Construction of Parallelogram	
19		Pictorial Representation of Motions	

MATH
HOLIDAYS HOMEWORK

SECTION – A

Questions 1 to 10 carry 1 mark each.

1. On simplifying $(\sqrt{3} - \sqrt{7})^2$, we get
(a) $2 - \sqrt{21}$ (b) $5 - \sqrt{21}$ (c) $2(5 - \sqrt{21})$ (d) $10 - \sqrt{21}$
2. The value of $\frac{\sqrt{32} + \sqrt{48}}{\sqrt{8} + \sqrt{12}}$ is equal to
(a) $\sqrt{2}$ (b) 2 (c) 4 (d) 8
3. The simplified form of $13^{\frac{1}{5}} \div 13^{\frac{1}{3}}$ is
(a) $13^{\frac{2}{15}}$ (b) $13^{\frac{8}{15}}$ (c) $13^{\frac{-1}{15}}$ (d) $13^{\frac{-2}{15}}$
4. On dividing $6\sqrt{27}$ by $2\sqrt{3}$, we get
(a) $3\sqrt{9}$ (b) 6 (c) 9 (d) none of these
5. The value of $\sqrt{10}$ times $\sqrt{15}$ is equal to
(a) $5\sqrt{6}$ (b) $\sqrt{25}$ (c) $10\sqrt{5}$ (d) $\sqrt{5}$
6. Value of $(256)^{0.16} \times (256)^{0.09}$ is
(a) 4 (b) 16 (c) 64 (d) 256.25
7. $\left(-\frac{1}{27}\right)^{\frac{-2}{3}}$ is equal to
(a) $8\left(\frac{1}{27}\right)^{\frac{-2}{3}}$ (b) 9 (c) $\frac{1}{9}$ (d) $27\sqrt{27}$
8. Value of $\sqrt[4]{(81)^{-2}}$ is
(a) $\frac{1}{9}$ (b) $\frac{1}{3}$ (c) 9 (d) $\frac{1}{81}$

In the following questions 9 and 10, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

9. **Assertion (A):** Rational number lying between two rational numbers x and y is $\frac{1}{2}(x + y)$.

Reason (R): There is one rational number lying between any two rational numbers.

10. **Assertion (A):** $2 + \sqrt{3}$ is an irrational number.

Reason (R): Sum of a rational number and an irrational numbers is always an irrational number.

SECTION – B

Questions 11 to 14 carry 2 marks each.

11. The coordinates of two towns are $A(3,5)$ and $B(-1,9)$. A courier wants to go from A to B in a straight path. Find the distance between the two towns.
12. A park has two entrances at $P(2,1)$ and $Q(8,5)$. A security guard walks along the straight path joining the entrances. Find the distance he walks.
13. Find the point on the x-axis which is equidistant from $(2, -5)$ and $(-2,9)$.
14. Find the value(s) of y such that distance between $P(2, -3)$ and $Q(10, y)$ is 10 units.

SECTION – C

Questions 15 to 17 carry 3 marks each.

15. Find the value of $\frac{4}{(216)^{\frac{2}{3}}} + \frac{1}{(256)^{\frac{3}{4}}} + \frac{2}{(243)^{\frac{1}{5}}}$
16. Find the value of a and b , if $\frac{\sqrt{3}-1}{\sqrt{3}+1} = a + b\sqrt{3}$
17. Simplify $\frac{4+\sqrt{5}}{4-\sqrt{5}} + \frac{4-\sqrt{5}}{4+\sqrt{5}}$ by using rationalizing the denominator

SECTION – D

Questions 18 carry 5 marks each.

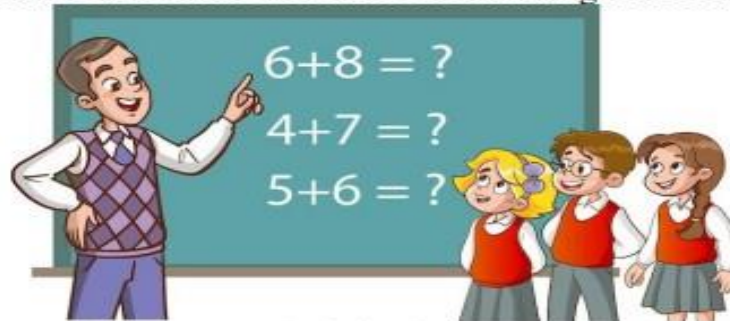
18. Prove that $\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$.

SECTION – E (Case Study Based Questions)

Questions 19 to 20 carry 4 marks each.

19. Mr. Kumar, a Mathematics teacher explained some key points of unit 1 of class IX to his students. Some are given here.
 - There are infinite rational numbers between any two rational numbers.

- Rationalisation of a denominator means to change the irrational denominator to rational form.
- A number is irrational if its decimal form is non-terminating non-recurring



On the basis of these key points, Answer the following questions

- What is the reciprocal of $2 + \sqrt{3}$?
- Find a rational number between $\sqrt{2}$ and $\sqrt{3}$
- Simplify $(\sqrt{3} - \sqrt{7})^3$

OR

- Express $\frac{4}{7}$ in decimal form and state the kind of decimal expansion.

20. Case Study 2 - Right-Angled Playground

A school is designing a rectangular playground. The corners of the playground are marked at $P(1,2)$, $Q(1,7)$, and $R(6,2)$ on the school's coordinate map. The principal wants to ensure that the playground is **right-angled** so that sports can be played efficiently. He asks the math teacher to verify whether $\triangle PQR$ forms a right-angled triangle and to calculate the midpoint of the hypotenuse to mark the center of the playground for placing a water fountain.



Answer the following questions:

- Verify whether $\triangle PQR$ is right-angled. (2)
- Determine which side is the hypotenuse. (1)
- Find the midpoint of the hypotenuse. (1)

OR

- Give coordinates of the playground center. (1)