



# THE JAIN INTERNATIONAL SCHOOL, KANPUR

Quality Education in a disciplined environment

Mainawati Marg, Azad Nagar, Kanpur, U.P. 208017

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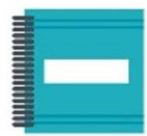
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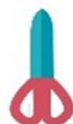
# Summer



# HOLIDAY



# HOMework



## CLASS:- IX (2024-25)





**The Jain International School, Kanpur**  
**Class IX**

SUBJECT	HOMEWORK ASSIGNED
HINDI	<p>1. अपनी पाठ्यपुस्तक(क्षितिज) के पढ़ाए गए पाठों में से किसी एक पाठ का परियोजना कार्य/ मॉडल तैयार कीजिए। या व्याकरण से संबंधित किसी एक विषय पर वर्किंग मॉडल तैयार कीजिए।</p> <p>2. अपनी पाठ्य पुस्तक (कृतिका) में दिए गए पाठ मेरे संग की औरतें और रीढ़ की हड्डी को ध्यान से पढ़कर किसी एक पाठ का सार (करीब 250-350 शब्दों में)अपने शब्दों में अपनी गृहकार्य पुस्तिका में लिखिए।</p> <p>3. समाचार पत्र समाज का दर्पण पर---- एक अनुच्छेद (150 -200 शब्दों में) अपनी गृहकार्य पुस्तिका में लिखिए।</p>
ENGLISH	<p><b>1.Plan a visit with your family to a neighbouring park. Make a travelogue of the same in a scrap file. Paste pictures and give detailed descriptions of the park.</b></p> <p><b>2.write a diary entry of your visit to the park describing your experiences of the day.</b></p> <p><b>3.Read the book ‘Five Tales of Shakespeare’ and write a brief book review of any one of the tales.</b></p> <p><b>4. Design an attractive cover page of the book review written.</b></p>
MATHS	Do the given worksheet in class notebook
PHYSICS	<p>1.Prepare the working model Group A (Roll. No. 1 to 6) , Group B (Roll. No. 7 to 12) Topic - Solar street light <a href="https://youtu.be/l5f-1QKtaQI?si=8q1Sf0oaaacIFUZb">https://youtu.be/l5f-1QKtaQI?si=8q1Sf0oaaacIFUZb</a> Group C (Roll.No.13 to 18) , Group D (Roll No. 19 to 24) Topic - Windmill and street light. <a href="https://youtu.be/Lme3U4U3Rp4?si=Ypj3lCCzfBmFqQc">https://youtu.be/Lme3U4U3Rp4?si=Ypj3lCCzfBmFqQc</a> Group E ( Roll. No. 25 to 30), Group F (Roll. No. 31 to 37)Topic - Hydraulic bridge <a href="https://youtu.be/JDBdnn--tQc?si=RwbhRVgdie5Y2oVc">https://youtu.be/JDBdnn--tQc?si=RwbhRVgdie5Y2oVc</a></p> <p>2. Do the given worksheet in your notebook</p>
S.SC	<p>Chart and working model on the given topic Roll no. 1 to 7 - Dam Roll no. 8 to 14 - Parliamentary system of India Roll no. 15 to 21 - Sectors of Indian Economy Roll no. 22 to 30 - Society of France and Struggle of peasants Roll no. 31 to 37 - Earthquake</p>
PAINTING	Make two canvas painting of your choice
IT	<p>Create your own blog using any of the following blog services : www.wordpress.com, www.blogger.com and publish your blog. Post some interesting content like story, report social problem, , report of a visit of any place etc.regularly</p> <p>2.Chart and working model on the given topic:- Roll no.-1 to 7- Smart city Roll no.-8 to 12- Security system Roll no.-13 to 17- Magic Bridge Roll no.-18 to 23 -Escalator Roll no.-24 to 29– Fire alarm Roll no- 30- 37- Solar system</p>
CHEMISTRY	Complete the given worksheet

1. Prepare model on the following topics as per your Roll Numbers
  1. Nucleus(Roll No.1-5 )
  2. Plasma membrane(Roll No. 6-10)
  3. Plant cell(Roll No.11-15)
  4. Animal cell(Roll No.16-20)
  5. Chloroplast(Roll No.21-25)
  6. Mitochondria(Roll No.26-30)
  7. Meiosis and mitosis(Roll No.31-37)
2. Do the given worksheet in your biology notebook.



**THE JAIN INTERNATIONAL SCHOOL, KANPUR**  
**HOLIDAY HOMEWORK (2024 - 25)**  
**SUBJECT: Chemistry**  
**CHAPTER: Matter In Our surrounding**  
**CLASS: 9<sup>th</sup>**

**Answer the following question**

1. What is a matter?
2. What is matter made up of? What is the name of these particles?
3. What are the physical states of matter?
4. What does increase in pressure leads to formation or melting of ice?
5. Why vaporization is a surface phenomenon?
6. At what temperature vaporization takes place?
7. Can solid have vapor phase?
8. What is sublimation?
9. How can we boil water at room temperature?
10. Why does ice floats over water?
11. Why do we feel cool after applying shave lotion or perfume?
12. Why does evaporation cause cooling?
13. Convert 300 k into Celsius scale and -10 c into Kelvin scale
14. Name the property of due to which it is possible to fill in cylinders for using as a fuel?
15. Why does the smell of hot cooked food reach you several meters away within seconds?
16. Give reasons to explain why it takes longer to dry wet clothes in humid weather?
17. Why gases are compressible but not liquid?
18. How does water kept in earthen pot becomes cool during summer?
19. Define the terms sublimation? Write the names of any two substances which sublime?
20. Give two factors that affect the rate of evaporation?
21. Which of the following is matter?
  - (a) chair , air , love , smell , hate almond , thought, cold, cold drinks, smell of perfume.
22. Explain the following
  - (a) Gasses exerts pressure on the walls of the container
  - (b) Water is liquid at room temperature
  - (c) Evaporation causes cooling
23. Wax is heated in a china dish. How will the following change during heating

(a) Kinetic energy of the particle

(b) Inter particle distance

24. You are provided with a mixture of naphthalene and ammonia chloride by your teacher. Suggest an activity to separate them with well labeled diagram



**The Jain International School, Kanpur**

**Class: IX. Subject: Biology Topic: Cell**

**Answer the following questions:**

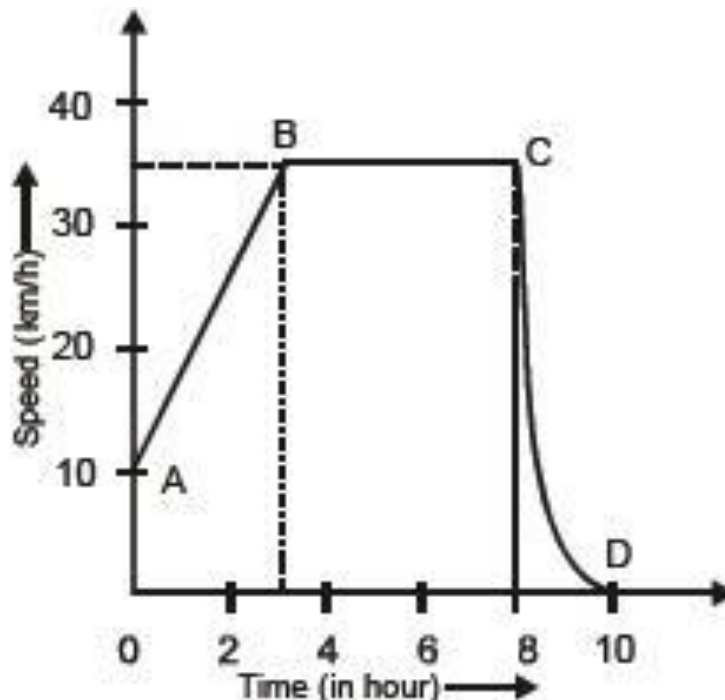
1. What is membrane biogenesis?
2. Why is the plasma membrane called a selectively permeable membrane?
3. What are the functions of ribosomes, lysosomes, centrosomes, RER, SER, vacuoles, chloroplast, chromoplast, Golgi bodies and mitochondria?
4. Name the nucleic acid found in chromosomes.
5. Name the following structure: a) structure and function unit of life b) powerhouse of the cell.  
c) kitchen of the cell  
d) protein factory of the cell  
e) store house of the cell
6. Why does the plant cell remain more rigid than the animal cell?
7. When do chromatin threads appear as chromosomes?
8. What are genes?
9. Where is the nucleolus located in a cell?
10. Name the structure which provides rigidity in animal cells.
11. Name the components of chromosomes.
12. Name an animal cell which does not possess a nucleus.
13. Where is DNA located in a prokaryotic cell?
14. What is endocytosis, exocytosis, phagocytosis and plasmolysis?
15. Differentiate between various types of plastids on the basis of their functions.
16. Name the composition of plasma membranes. Write their specific role.
17. What are grana? What role do they play?
18. Why are pores necessary in the nuclear envelope?
19. Why are genes called hereditary units?
20. Write five differences between prokaryotic and eukaryotic cells.
21. What role does endoplasmic reticulum play in synthesis of cell membrane?
22. Why is transport of material essential in living organisms?
23. Write at least three points of difference between meiosis and mitosis.
24. Draw well labelled structure of plasma membrane, chloroplast and mitochondria.
25. Write five points of differences between Plant cell and Animal cell.

**Physics Worksheet**  
**Class-IX**

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**Answer the following questions:**

- Q1) Which speed is greater: 30 m/s or 30 km/h?
- Q2) Suppose a ball is thrown vertically upwards from a position P above the ground. It rises to the highest point Q and returns to the same point P. What is the net displacement and distance traveled by the ball?
- Q3) Give an example of a body which may appear to be moving for one person and stationary for the other.
- Q4) What is the difference between uniform velocity and non-uniform velocity?
- Q5) A cyclist cycles for  $t$  second at a speed of 3 m/s and then for the same time at a speed of 5 m/s along a straight road due north. What is the average speed of the cyclist?
- Q6) A bus decreases its speed from 80 km/h to 60 km/h in 5 s. Find the acceleration of the bus.
- Q7) A bus starting from rest moves with a uniform acceleration of  $0.1 \text{ ms}^{-2}$  for 2 minutes. Find (a) the speed acquired, (b) the distance travelled.
- Q8) With the help of a graph, derive all the three equations of motion.
- Q9) A trolley, while going down an inclined plane, has an acceleration of  $2 \text{ cm/s}^2$ . What will be its velocity 3 s after the start?
- Q10) A circular track has a circumference of 3140 m with AB as one of its diameter. A scooterist moves from A to B along the circular path with a uniform speed of 10 m/s. Find
- distance covered by the scooterist,
  - displacement of the scooterist, and
  - time taken by the scooterist in reaching from A to B.
- Q11) The graph given alongside shows how the speed of a car changes with time.
- What is the initial speed of the car?
  - What is the maximum speed attained by the car?
  - Which part of the graph shows zero acceleration?
  - Which part of the graph shows varying retardation?
  - Find the distance travelled in first 8 hours.



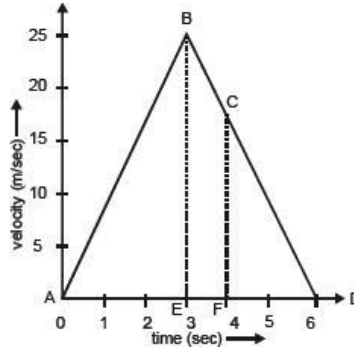
- Q12) The following table gives the data about motion of a car.

Time (h)	11.00	11.30	12.00	12.30	1.00
Distance (km)	0	30	30	65	100

Plot the graph.

- Find the speed of the car between 12.00 hours and 12.30 hours.
- What is the average speed of the car?
- Is the car's motion an example of uniform motion? Justify.

Q13) Study the velocity-time graph and calculate.



- The acceleration from A to B
- The acceleration from B to C
- The distance covered in the region ABE.



**The Jain International School, Kanpur**  
**Holiday Homework Worksheet**  
**Subject-Mathematics (041)**  
**Class- IX**

**Number system**

- Find ten rational numbers between  $\frac{-3}{11}$  and  $\frac{2}{11}$
- Express each of the following decimals in the form  $\frac{p}{q}$ , where  $p, q$  are integers and  $q \neq 0$ .  
(a)  $4.\overline{32}$                       (b)  $0.\overline{32}$                       (c)  $0.\overline{3178}$
- Represent  $\sqrt{2}$  on the number line.
- Represent  $\sqrt{9.3}$  on the number line
- Simplify by rationalizing the denominator:  
(a)  $\frac{6-4\sqrt{3}}{6+4\sqrt{3}}$                       (b)  $\frac{\sqrt{13}-\sqrt{11}}{\sqrt{13}+\sqrt{11}} + \frac{\sqrt{13}+\sqrt{11}}{\sqrt{13}-\sqrt{11}}$                       (c)  $\frac{5}{\sqrt{7}}$
- Prove that:  
$$\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$$
- If  $x = 2 - \sqrt{3}$ , find the value of  $\left(x - \frac{1}{x}\right)^3$ .
- If  $p = \frac{3-\sqrt{5}}{3+\sqrt{5}}$  and  $q = \frac{3+\sqrt{5}}{3-\sqrt{5}}$ , find the value of  $p^2 + q^2$ .
- If  $\left(\frac{x^{-1}y^2}{x^3y^{-2}}\right)^{1/3} \div \left(\frac{x^6y^{-3}}{x^{-2}y^3}\right)^{1/2} = x^a y^b$ , prove that  $a + b = -1$ , where  $x$  and  $y$  are different positive primes.
- Find the value of  $x$ :  
 $5^{x-3} \times 3^{2x-8} = 225$

**Polynomials**

- If  $p(x) = x^3 - 3x^2 - 9x - 9$ , find  $p(0), p(3), p(-3), p(-1)$
- Define various types of polynomials on the basis of:  
(a) Number of terms  
(b) Degree of polynomial
- Find the remainder when the polynomial  $p(x) = 12x^3 - 13x^2 - 5x + 7$  is divided by  $g(x) = (2 + 3x)$ .
- Check whether  $(7 + 3x)$  is a factor of  $(3x^3 + 7x)$ .
- Find the value of  $k$  for which  $(x - 1)$  is a factor of  $(2x^3 + 9x^2 + x + k)$ .
- If  $x + 2k$  is a factor of  $f(x) = x^4 - 4k^2x^2 + 2x + 3k + 3$ , find  $k$ .
- Evaluate  $105 \times 108$  without multiplying directly.
- Factorize:  
(a)  $9x^2 + 12xy$   
(b)  $18x^2y - 24xyz$   
(c)  $9x^2 - 16y^2$   
(d)  $x^2 + 11x + 30$   
(e)  $x^2 + 18x + 32$

### Coordinate Geometry

19. Plot the following points on graph paper  
(a) (-3, 5)    (b) (5,7)    (c) (-2, -6)    (d) (4, -5)    (e) (2, -3)    (f) (2,0)
20. What will be the coordinate of the point lying on x-axis?
21. What will be the coordinate of the point lying on y-axis?
22. Identify the quadrant/axis to which the following points lie  
(a) (7,3)    (b) (3, -5)    (c) (4,0)    (d) (-4, -5)    (e) (0,3)    (f) (-2,5)
23. Plot the points A (5,5) and B (-5,5). Join AB, OA and OB, where O is Origin. Name the type of triangle so obtained.
24. Find the coordinates of the points  
(a) Which lies on both x and y- axis.  
(b) Whose abscissa is 5 and lies on x-axis.  
(c) Whose ordinate is -4 and lies on y-axis.
25. Plot the points P (-2, 1), Q (2,1), R (3,2) and S (-1,2) and write the name of the figure thus obtained.

#### Project

Prepare a working model of Math (related to your syllabus)