

I.T.B.P PUBLIC SCHOOL
SUMMER VACATION HOME-WORK
CLASS 9

SR. NO.	SUBJECT	HOMEWORK																											
1.	ENGLISH	<p>1. Suppose that you were on a morning walk and caught in a heavy storm, how did you manage to save yourself. Write a diary- entry within 150 words. (English Notebook)</p> <p>2. Write your experience of visiting a holiday destination during your vacation in the form of a diary-entry. [120-150 words] (English Notebook)</p> <p>3. Design your own newspaper with important news and events.</p> <p>4. Write a brief note on the theme of Robert Frost's poem, 'The Road Not Taken'. (English Notebook)</p> <p>5. What message did Robert Frost give to his readers through his poem, 'The Road Not Taken'? (English Notebook)</p> <p>6. Write down the summary and Q/Ans of chapter 5 and 6 from Beehive</p> <p>7. Find the meaning of the following words and also check the pronunciation:</p> <table style="width: 100%; border: none;"> <tr> <td>contingent</td> <td>inherent</td> <td>stringent</td> </tr> <tr> <td>criteria</td> <td>jurisdiction</td> <td>subordinate</td> </tr> <tr> <td>demeanor</td> <td>lax</td> <td>subsidize</td> </tr> <tr> <td>deplore</td> <td>meticulous</td> <td>tenuous</td> </tr> <tr> <td>derogatory</td> <td>negligent</td> <td>travesty</td> </tr> <tr> <td>disparity</td> <td>nonchalant</td> <td>tumult</td> </tr> <tr> <td>disseminate</td> <td>oblivious</td> <td>unilateral</td> </tr> <tr> <td>cohesive</td> <td>obscure</td> <td>validate</td> </tr> <tr> <td>distraught</td> <td>omnipotent</td> <td>vindicate</td> </tr> </table> <p>8. Complete the worksheet given below based on verbs. Take a printout of it and stick in your English notebook.</p> <p>8. Revise the syllabus done for UT2</p>	contingent	inherent	stringent	criteria	jurisdiction	subordinate	demeanor	lax	subsidize	deplore	meticulous	tenuous	derogatory	negligent	travesty	disparity	nonchalant	tumult	disseminate	oblivious	unilateral	cohesive	obscure	validate	distraught	omnipotent	vindicate
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2.	HINDI	4 सम्वाद,4 पत्र,4 विज्ञापन,4 अनुच्छेद ।इकाई परीक्षा-रहेतु लिखे पाठ्यक्रम को दोहराए																											
3.	MATHEMATICS	<p>1. Write the History of Pythagoras with pictures.(On A4 size sheet).</p> <p>2. Holiday Homework should be done neatly and properly. Maintain your fair notebook properly.</p> <p>3. Complete the given worksheets of Chapter 1, 2 and 3 in practice notebook and revise the same chapters for UT 2</p>																											

Worksheet, Mathematics

Class 9, Chap – 1 (Number Systems)

Q.1. Prove that $\sqrt{5}$ is irrational using long division method.

Q.2. Find two rational and two irrational numbers between 0.343443444..... and 0.363663666.....

Q.3. Classify the following as rational and irrational numbers:

- a) $\sqrt{15}$ b) 0.4131313..... c) 1.232232223..... d) $\sqrt{144}$

Q.4. Express the following in $\frac{p}{q}$ form:

- a) 0.5 b) 0.0001 c) 0.123 d) 15.712

Q.5. If $x = 3 + 2\sqrt{2}$, find out the value of $x - \frac{1}{x}$ Ans. $4\sqrt{2}$

Q.6. Solve and check whether the following are rational or irrational:

- a) $(2 + \sqrt{2})^2$ b) $(3 - \sqrt{2})(3 + \sqrt{2})$ c) $\frac{12}{2\sqrt{3}}$ d) $3\sqrt{5} \times 4\sqrt{5}$
e) $(2\sqrt{2} + 5\sqrt{3}) + (\sqrt{2} - 3\sqrt{3})$

Q.7. Rationalise the denominator of following :

- a) $\frac{1}{\sqrt{5} + \sqrt{2}}$ Ans. $\frac{\sqrt{5} - \sqrt{2}}{3}$
b) $\frac{30}{5\sqrt{3} - 3\sqrt{5}}$ Ans. $5\sqrt{3} + 3\sqrt{5}$
c) $\frac{1}{\sqrt{6} - \sqrt{5}}$ Ans. $\sqrt{6} + \sqrt{5}$

Q.8. Simplify the following:

- a) $\frac{2\sqrt{3}}{\sqrt{3} - \sqrt{2}} + \frac{3\sqrt{2}}{\sqrt{3} + \sqrt{2}}$ Ans. $5\sqrt{6}$
b) $\frac{7 + 3\sqrt{5}}{3 + \sqrt{5}} + \frac{7 - 3\sqrt{5}}{3 - \sqrt{5}}$ Ans. 3

Q.9. If $a = 8 + 3\sqrt{7}$ and $b = \frac{1}{a}$, what will be the value of $a^2 + b^2$? Ans. 254

Q.10. if $x = \frac{\sqrt{5} - \sqrt{2}}{\sqrt{5} + \sqrt{2}}$ and $y = \frac{\sqrt{5} + \sqrt{2}}{\sqrt{5} - \sqrt{2}}$, find the value of $x^2 + xy + y^2$. Ans. $\frac{187}{9}$

Q.11. Represent $\sqrt{6.3}$ and $\sqrt{8.4}$ on the number line.

Q.12. Find the following using laws:

a) $27^{\frac{-2}{3}}$ b) $64^{\frac{-2}{3}} \times 27^{\frac{-2}{3}}$ c) $[\frac{32}{243}]^{\frac{4}{5}}$

Q.13. if $x = 5$ and $y = 2$, find the value of :

a) $(x^y + y^x)^{-1}$ Ans. $\frac{1}{57}$

b) $(x^x + y^y)^{-1}$ Ans. $\frac{1}{3129}$

Q. 14. Simplify : $12\sqrt{18} - 6\sqrt{20} - 3\sqrt{50} + 8\sqrt{45}$ Ans. $21\sqrt{2} + 12\sqrt{5}$

Q.15. Show that : $(x^{a-b})^{a+b} \times (x^{b-c})^{b+a} \times (x^{c-a})^{c+a} = 1$

Worksheet Chapter -2 (Polynomials)

Note:- Complete the worksheet in your practice notebook.

- Find the coefficient of a^3 in the expansion of $(2a - 5)^3$
- Find the value of $(1015)^2 - (1014)^2$
- Find the zero of the polynomial $p(x) = 4x + - 25$
- What is the remainder when $p(x)$ is divided by $ax + b$
- If $x^{15} - 199$ is divided by $x - 1$, find the remainder.
- Find the remainder obtained on dividing $x^6 + x^4 - x^2 + 1$ by $x - 2$.
- What is the value of p , if $x +$ is a factor of $px^2 - 4px + 3$?
- Find the value of $4x^2 + 9y^2$ if $2x + 3y = 18$ and $xy = 5$.
- If $a^2 + = 31$, what is the value of $a -$?
- In each of the following , find the remainder when $p(x)$ is divided by $q(x)$.
 - $p(x) = x^5 + x^4 + x^3 + x^2 + 2x + 2$; $q(x) = x^3 + 1$
 - $p(x) = 4x^3 - 12x^2 + 14x - 3$; $q(x) = x -$
 - $p(x) = x^6 + 3x^2 + 10$; $q(x) = x^4 + 1$
- Check whether the polynomial $g(x)$ is a factor of $f(x)$ or not in each of the following:-
 - $f(x) = x^3 - 3x^2 + 5x - 2$; $g(x) = +$
 - $f(x) = -5x^3 - 3x^2 + 7x - 2$; $g(x) = 2 - 5x$
 - $f(x) = x^3 - 3x^2 + 4x - 4$; $g(x) = x - 2$
- Without actually calculating the cube , find the value of :-
 - $(a - 2b)^3 + (2b - 3c)^3 + (3c - a)^3$

		<p>(ii) $(0.5)^3 - (0.8)^3 + (0.3)^3$</p> <p>13. If $a + b + c = 9$ and $ab + bc + ca = 26$, find $a^2 + b^2 + c^2$</p> <p>14. Find $x^2 + y^2$ if $x + y = -14$ and $xy = 84$</p> <p>15. Find $y^2 +$ and $y^4 +$ if $y - = 9$</p> <p>16. Find the value of $x^3 - 27y^3 + 27xy + 27$, if $x = 3y - 3$</p> <p>17. Without actual division, prove that $2x^4 - 5x^3 - 2x^2 - x + 2$ is exactly divisible by $x^2 - 3x + 2$</p> <p>18. Prove that $(a + b + c)^3 - a^3 - b^3 - c^3 = 3(a + b)(b + c)(c + a)$</p> <p>19. If $z^2 + = 11$, find the value of $z^3 +$, using only the positive value of $z -$.</p> <p>20. Find the value of a, if $x - a$ is a factor of $x^5 - a^2x^3 + 2x + a + 1$</p>
4.	SCIENCE	Practice the worksheets of CH-1,5, 8. Revise chapters for upcoming exams
5.	SOCIAL STUDIES	<p>1) Revise all the chapters done till the summer break.</p> <p>2) Every student has to undertake any one project on Disaster Management (Pertaining to class ix syllabus)</p> <ol style="list-style-type: none"> 1. Common natural hazards- prevention and mitigation 2. Man made disasters- nuclear, biological and chemical <p>It is to be noted that :</p> <p>The projects should be made from eco-friendly products without incurring too much expenditure, credit will be awarded to original drawings, illustrations and creative use of materials.</p> <p>The project report should be handwritten by the students themselves</p> <p>The project report should be presented in a neatly bound simple folder. (spiral bound)</p> <p>The project report should be developed and presented in this order:</p> <p>COVER PAGE showing project title, student information, school and year</p> <p>LIST OF CONTENTS/ INDEX with page numbers</p> <p>ACKNOWLEDGEMENTS (acknowledging the institution, teachers and the persons who have helped you)</p> <p>PROJECT OVERVIEW : purpose, aim, methodology and experiences while doing the project</p> <p>CHAPTERS with relevant headings</p> <p>SUMMARY AND CONCLUSIONS based on findings</p> <p>BIBLIOGRAPHY should have the books, websites referred</p> <p>TEACHER'S EVALUATION REPORT</p>

6.	COMPUTERS	Practice for all tools provided by window operating system and short note about them in your own words <ul style="list-style-type: none"> ● Desktop ● Taskbar ● Application window and parts ● Icons an types of icons ● Accessories Applications ● Accessories tools ie calculator etc ● Disk cleanup ● Disk defragmenter ● Antivirus installed in your computer

ENGLISH WORKSHEET

Complete the following sentences using the most appropriate form of the verb given in the brackets.

Many scholars and learned men (use) to visit King Krishna Deva Raya's court. The king himself was a learned man and (love) to entertain those distinguished guests. Very often, the scholars, who (visit) his court (challenge) his courtiers. The king greatly (enjoy) these contests of wit and wisdom. One day, a scholar (come) to the palace. He was a well-learned person and (speak) many languages. The king (welcome) him with great pleasure and (request) him to spend a few days in the palace. The visitor (accept) the invitation happily. He also (challenge) Krishna Deva Raya's courtiers to find out what his mother tongue (be). The courtiers (try) every trick in the book. They spoke with him in several languages. Interestingly, the scholar (be) fluent in all of them and therefore the courtiers (not) figure out what his mother tongue was. Meanwhile, Tenali Raman (sit) quietly in one corner. He (not even make) an attempt to speak to the scholar. Tenali Raman was the most intelligent among Krishna Deva Raya's courtiers. So the king (surprise). He (ask) Raman why he (not take up) the challenge. Suddenly Tenali Raman (rise) from his seat. He turned towards the king and (say) that he had something urgent to do. Saying this, he (rush) towards the door. As he (go) past the

scholar, he (trip) and (step) hard on the man's toes. The scholar
(badly hurt) and (cry) out in pain.

Chemistry
Chapter-1 worksheet
Matter in our surroundings

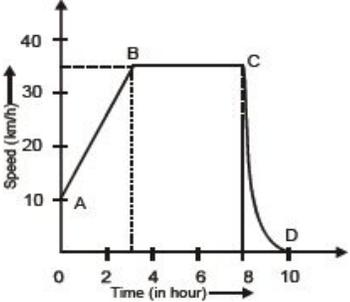
Q-1	Why do we see water droplets collected on the outer surface of a glass container, containing ice?
Q-2	Explain why solids have fixed shape but liquids and gases do not have fixed shape.
Q-3	Why is it advisable to use pressure cooker at higher altitudes?
Q-4	What are fluids?
Q-5	Why is water liquid at room temperature?
Q-6	Cotton is solid but it floats on water. Why?
Q-7	Why are solids generally denser than liquids and gases?
Q-8	Name the factors that affect evaporation.
Q-9	How is the high compressibility property of gas useful to us?
Q-10	With the help of an example, explain how diffusion of gases in water is essential?
Q-11	On a hot sunny day, why do people sprinkle water on the roof or open ground?
Q-12	Why do people perspire a lot on a hot humid day?
Q-13	A balloon when kept in sun, bursts after some time. Why?
Q-14	Pressure and temperature determine the state of a substance. Explain this in detail.
Q-15	Explain giving examples the various factors on which rate of evaporation depends.
Q-16	What is dry ice?
Q-17	What is difference between evaporation and boiling?
Q-18	How does water gets cooled in earthen pot?
Q-19	What is sublimation? Explain with the help of an activity and a diagram?
Q-20	Define latent heat of vaporization

BIOLOGY
CH-5: THE FUNDAMENTAL UNIT OF LIFE
WORKSHEET

Q-1	What is cell theory? Who formulated it?
Q-2	Write the full form of DNA and ATP.
Q-3	What is the importance of nucleus?
Q-4	Explain the process of osmosis through an example.
Q-5	Draw and label a Plant cell neatly.
Q-6	Why is Plasma Membrane a selectively permeable membrane?
Q-7	What is the function of chromosome?
Q-8	Name the cleansing organelle in the cell.
Q-9	How does amoeba consume food?
Q-10	Why is RER rough and what is the function?
Q-11	State the difference between chromoplast and leucoplast
Q-12	State the importance of vacuoles
Q-13	Define the terms:
a)	Protoplasm
b)	Nucleoid
c)	Chromatin material

PHYSICS
CH-8 MOTION
WORKSHEET

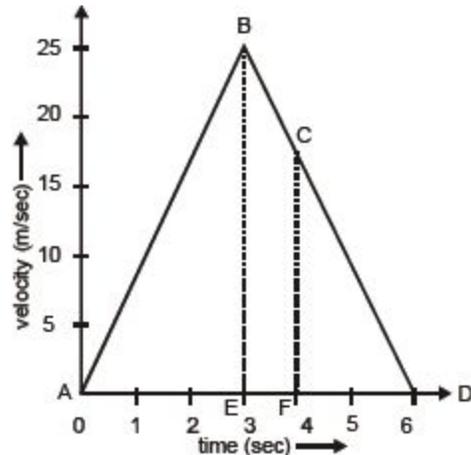
Q-1	(a) Identify the kind of motion in the following cases: (i) A car moving with constant speed turning around a curve. (ii) An electron orbiting around nucleus. (b) An artificial satellite is moving in a circular orbit of radius 36,000 km. Calculate its speed if it takes 24 hours to revolve around the earth.
Q-2	(a) Define average speed. (b) A bus travels a distance of 120 km with a speed of 40 km/h and returns with a speed of 30 km/h. Calculate the average speed for the entire journey.
Q-3	Define uniform and non-uniform motion. Write one example for each.
Q-4	What does the odometer of an automobile measure? Which of the following is moving faster? Justify your answer. (i) A scooter moving with a speed of 300 m per 1 minute. (ii) A car moving with a speed of 36 km per hour.
Q-5	A car travels from stop A to stop B with a speed of 30 km/h and then returns back to A with a speed of 50 km/h. Find (i) displacement of the car. (ii) distance travelled by the car. (iii) average speed of the car.
Q-6	Velocity-time graph for the motion of an object in a straight path is a straight line parallel to the time axis. (a) Identify the nature of motion of the body. (b) Find the acceleration of the body. (c) Draw the shape of distance-time graph for this type of motion.
Q-7	Draw the shape of the distance-time graph for uniform and non-uniform motion of object. A bus of starting from rest moves with uniform acceleration of 0.1 ms^{-2} for 2 minutes. Find (a) the speed acquired. (b) the distance travelled.
Q-8	(a) Define uniform acceleration. What is the acceleration of a body moving with uniform velocity? (b) A particle moves over three quarters of a circle of radius r. What is the magnitude of its displacement?
Q-9	A bus accelerates uniformly from 54 km/h to 72 km/h in 10 seconds Calculate (i) acceleration in m/s^2 (ii) distance covered by the bus in metres during this interval.

Q-10	A car moves with a speed of 30 km/h^{-1} for half an hour, 25 km/h^{-1} for one hour and 40 km/h^{-1} for two hours. Calculate the average speed of the car.
Q-11	Derive the equation for velocity-time relation ($v = u + at$) by graphical method.
Q-12	A car is travelling at 20 km/h , it speeds upto 60 km/h in 6 seconds. What is its acceleration?
Q-13	13. A car accelerates from 6 ms^{-1} to 16 ms^{-1} in 10 sec. Calculate (a) the acceleration and (b) the distance covered by the car in that time.
Q-14	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 (a) distance covered by the scooterist, (b) displacement of the scooterist, and (c) time taken by the scooterist in reaching from A to B.
Q-15	(a) Differentiate between uniform linear and uniform circular motion. (b) Write any four examples of uniform circular motion. (c) Is uniform circular motion accelerated motion?
Q-16	(a) Differentiate between speed and velocity. (b) When is a body said to have uniform velocity? (c) How can we describe the position of an object? Illustrate with suitable example.
Q-17	<p>The graph given alongside shows how the speed of a car changes with time.</p> <p>(i) What is the initial speed of the car? (ii) What is the maximum speed attained by the car? (iii) Which part of the graph shows zero acceleration? (iv) Which part of the graph shows varying retardation? (v) Find the distance travelled in first 8 hours.</p> 

Q-18

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 average velocity from C to D
- The distance covered in the region BCFE



Q-19

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

Time	11.	11.	12.	12.	1.
(h)	00	30	00	30	00
Distan	0	30	30	65	10
ce					0
(km)					

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.

Q-20

- Derive the equation of motion $v = u + at$, using graphical method.
- A train starting from rest attains a velocity of 72 km/h in 5 minutes. Assuming the acceleration is uniform, find
 - the acceleration.
 - the distance travelled by the train for attaining this velocity