

HOLIDAY HOMEWORK CLASS IX

Dear students

Have a fun-filled summer vacation. Please make a serious attempt to complete the assigned task. It is essential to attempt the task on your own. Minimum help should be taken from Parents.

Remember, “**All you can do is the best you can do, and the best has its own reward**”. Please take care of the following:

- Read newspaper daily.
- Watch informative programmes on Discovery channel, History channel and National Geographic channel.
- Pursue and keep yourself happily engaged in the activity of your choice.

A NOTE FOR PARENTS

Make this summer special!

1. Have at least two meals together with your children.
2. Try to share some stories/experiences with them and tell them about your childhood.
3. As far as possible keep them away from TV and other electronic gadgets.

HOLIDAY HOMEWORK (2017-18)

CLASS IX

ENGLISH

- Read the Novel 'Three Men In A Boat' - Chapters 1 to 10 and answer the following questions in your register-
1. Do you agree with Jerome's observation that he (Jerome) was a hospital in himself? Explain.
 2. What flaws in Harris's character get him into trouble? Explain.
 3. "The sight of those notice boards arouses every evil instinct in my nature." What does the above line reveal about the character of the narrator in 'Three Men in a Boat'?
 4. Explain why Jerome objected to the idea of a sea trip.
 5. Bring out the personality traits of the three friends during the planning of their outing.
 6. Harris said that to himself it was always a mystery how people managed to get sick at sea." Give a character-sketch of Harris.
 7. Why did the three friends discard the idea of taking oil with them? Discuss on the basis of your reading of the novel 'Three Men in a Boat'.
 8. Why is Jim fed up with weather forecasts? Give examples.
- Attempt the questions of Writing Task from MCB on Pg- 10 Ques-A.8, Pg 56 Ques-B.4 on A4 size sheets and put them neatly in a folder.
 - A travelogue is a person's account of a journey to another country or place. It can either be a written report with many factual details or a narrative story about personal impressions and experiences supported by images.
Make a Travelogue containing the following-
 1. Name of the Place
 2. Give a Photographic Description
 3. Highlight the Various Attractions
 4. Mention the ways and means used to reach the destination
 5. Name the hotels for stay.
 6. Mention some of the tourist attraction.
 7. Cultural background of the place
 8. Mention some dos and don'ts of the place.

HINDI

१. एवरेस्ट मेरी शिखर यात्रा पाठ के आधार पर बर्चेद्री पाल के जीवन पर आधारित लेख लिखें उनके जीवन में आई कठिनाइयों का वर्णन करते हुए बताएँ कि आपको उनके जीवन से क्या प्रेरणा मिलती है ?
२. आगे बढ़ती भारतीय महिलाओं की पुस्तक पढ़कर उससे सम्बंधित चित्रों का संग्रह करे एवं उनके जीवन पर आधारित संक्षिप्त जानकारी प्राप्त कर लिखिए (कम से कम ५)

३. रामधारी सिंह दिनकर का लेख ' हिम्मत और जिंदगी ' पुस्तक पढ़ें व पुस्तक समीक्षा करें
४. स्वच्छ पर्यावरण पर एक विज्ञापन निर्माण करें
५. कक्षा में करवाए गए सभी पाठों की पुनरावृत्ति करो

नोट –ग्रीष्मावकाश समस्त कार्य फाइल के रूप में प्रस्तुत किया जाए ।

स्वच्छता का विशेष ध्यान रखें ।

प्रथम पृष्ठ पर विषय सूची बनाएँ ।

चित्रों का विशेष रूप से प्रयोग करें ।

SANSKRIT

भारतस्य केषांचित् पंच राज्यानाम् आहार-विषयकं उत्सव-विषयकं च चित्रं संलग्नं कृत्वा तेषु दश-वाक्यानि लिखत ।

(भारत के किन्हीं पाँच राज्यों के आहार-विषयक तथा उत्सव विषयक चित्रों को चिपकाकर

उनपर आधारित दस संस्कृत के वाक्यों की रचना करें ।)

MATHS

1 .Collect information and pictures on EXPLORING FIBONACCI NUMBERS. Under the following sub-head.

- **What are Fibonacci numbers?**
- **Write first 20 terms of the sequence generated by Fibonacci numbers.**
- **History of the mathematician who gave this concept.**
- **Explore in nature the things that correspond to Fibonacci numbers with pictures.**

Paste the information and pictures on coloured A4 sheets in a folder. The project should be completed in 10 -15 pages.

2. In a separate notebook, practice questions given from the chapters Number Systems, Heron's formula and Polynomials. (Attached below)

NUMBER SYSTEMS (CHAPTER 1)

1. Find two rational numbers between 0.1 and 0.3

2. Express $3\frac{1}{8}$ in the form of decimal.

3. Simplify : $(4 + \sqrt{3})(4 - \sqrt{3})$

4. Rationalise the denominator of $\frac{1}{\sqrt{3} - \sqrt{2}}$.

5. Express $0.\overline{245}$ as a fraction in the simplest form.

6. If $x = (2 + \sqrt{3})$, find the value of $x^2 + \frac{1}{x^2}$

7. What is the value of $3\sqrt{3} + \sqrt{3}$?

8. If $x = \frac{\sqrt{3} - \sqrt{2}}{\sqrt{3} + \sqrt{2}}$ and $y = \frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$, find the value of $x^2 + y^2 + xy$.

9. If $x = \frac{2 - \sqrt{5}}{2 + \sqrt{5}}$ and $y = \frac{2 + \sqrt{5}}{2 - \sqrt{5}}$, find the value of $x^2 - y^2$.

10. Determine rational numbers p and q if

$$\frac{7 + \sqrt{5}}{7 - \sqrt{5}} - \frac{7 - \sqrt{5}}{7 + \sqrt{5}} = p - 7\sqrt{5}q.$$

11. Simplify: $\frac{6}{2\sqrt{3} - \sqrt{6}} + \frac{\sqrt{6}}{\sqrt{3} + \sqrt{2}} - \frac{4\sqrt{3}}{\sqrt{6} - \sqrt{2}}$.

12. Simplify: $\frac{3\sqrt{2}}{\sqrt{6} - \sqrt{3}} + \frac{2\sqrt{3}}{\sqrt{6} + 2} - \frac{4\sqrt{3}}{\sqrt{6} - \sqrt{2}}$.

13. If: $x = \frac{\sqrt{p+q} + \sqrt{p-q}}{\sqrt{p+q} - \sqrt{p-q}}$, then find the value of $qx^2 - 2px + q$.

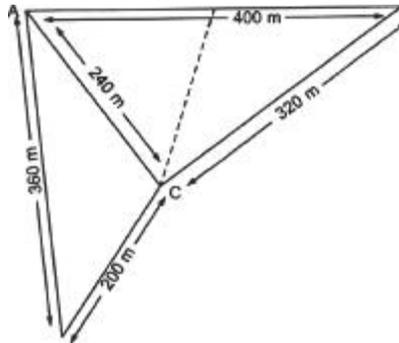
14. Show that: $\frac{x^{-1} + y^{-1}}{x^{-1}} + \frac{x^{-1} - y^{-1}}{x^{-1}} = \frac{x^2 + y^2}{xy}$

15. If $x = 2 + 3\sqrt{2}$, then find the value of $\left(x + \frac{14}{x}\right)$.

HERON'S FORMULA (CHAPTER-12)

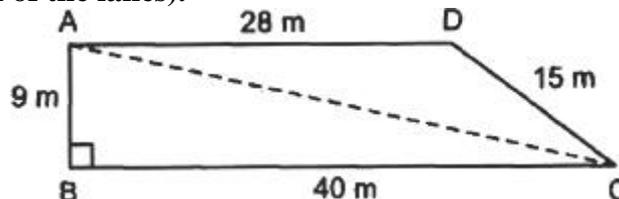
1. Find the area of a right-angled triangle whose base is 12 cm and height is 5 cm.
2. Find the area of an equilateral triangle with side 10 cm.
3. Find the area of an isosceles triangle with two equal sides as 5 cm each and the third side as 8 cm.
4. A triangular park has sides 120 m, 80 m and 50 m. A gardener has to put a fence all around it and also plant grass inside. How much area does he need to plant? Find the cost of fencing it with barbed wire at the rate of Rs. 20 per metre, leaving a space of 3 m wide for a gate on one side.
5. The sides of a triangular plot are in the ratio of 6 : 7 : 8 and its perimeter is 420 m. Find its area.

6. A farmer has a triangular field with sides 240 m, 200 m and 360 m, where he grew wheat. In another triangular field with sides 240 m, 320 m and 400 m adjacent to the previous field, he wanted to grow potatoes and onions (see figure). He divided the field into two parts by joining the mid point of the longest side to the opposite vertex and grew potatoes in one part and onions in the other part. How much area (in hectares) has been used for wheat, potatoes and onions?

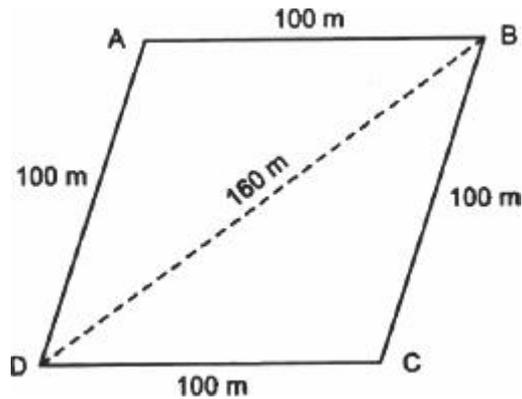


Now $10,000 \text{ m}^2 = 1 \text{ hectare}$

7. Students of a school staged a rally for cleanliness campaign. They walked through the lanes in two groups. One group walked through the lanes AB, BC and CA; while the other through AC, CD and DA (see figure). Then they cleaned the area enclosed within their lanes. If $AB = 9 \text{ m}$, $BC = 40 \text{ m}$, $CD = 15 \text{ m}$, $DA = 28 \text{ m}$ and angle $B = 90^\circ$, Which group cleaned more area and by how much? Find the total area cleaned by the students (neglecting the width of the lanes).



8. Parul has a piece of land which is in the shape of a rhombus (see fig.) She wants her daughter and son to work on the land and produce different crops. She divided the land in two equal parts. If the perimeter of the land is 400 m and one of the diagonal is 160 m, how much area each of them will get for their crops?



9. Find the height of a trapezium in which parallel sides are 25 cm 77 cm and non-parallel sides and 26 cm and 60 cm. Given the area of the trapezium as 1644 cm^2 .

Polynomials

Q 1 Show that $(x-1)$ is a factor of $x^{10}-1$.

Q 2 Use the factor theorem to determine whether $g(x)$ is a factor of $f(x)$ in following case:

$$f(x) = x^3 - 3x^2 + 4x - 4, g(x) = x - 2$$

Q 3 Find the remainder when $x^3 + 3x^2 + 3x + 1$ is divided by $x + 1$.

Q 4 Find a and b , if $x + 1$ and $x + 2$ are the factors of

$$f(x) = x^3 + 3x^2 - 2ax + b.$$

Q 5 What should be subtracted from the polynomial $x^3 - 6x^2 - 15x + 80$ so that the result is exactly divisible by $x^2 + x - 12$.

Q 6 What is the value of k , if $x - 3$ is a factor of the polynomial $k^2x^3 - kx^2 + 3kx - k$?

Q 7 The polynomials $ax^3 + 3x^2 - 13$ and $2x^3 - 5x + a$ are divided by $x + 2$. If the remainder in each case is the same, find the value of a .

Q 8 Divide the polynomial $3x^4 - 4x^3 - 3x - 1$ by $x - 1$.

Q 9 Check whether $7 + 3x$ is a factor of $3x^3 + 7x$.

Q 10 Find the zero of the polynomial in each of the following cases:

(i) $h(x) = 2x$

(ii) $p(x) = cx + d, c \neq 0$

(iii) $p(x) = ax$

Q 10 If $x = 4/3$ is a zero of the polynomial $f(x) = 2x^3 - 11x^2 + kx - 20$, find the value of k

Q 11 Factorize $27a^3 + 125b^3$.

Q 12 Factorize $10x^4y - 10xy^4$.

Q 13 Factorize $x^3 - 12x(x - 4) - 64$.

Q 14 Factorize $8x^3 + 27y^3 + z^3 - 18xyz$.

Q 15 Factorize $(a^2 - b^2)^3 + (b^2 - c^2)^3 + (c^2 - a^2)^3$.

Q 16 Factorize $32a^3 + 108b^3$.

Q 17 Factorize the following $8a^3 + b^3 + 12a^2b + 6ab^2$.

Q 18 Factorize $x^8 - y^8$.

Q 19 Factorize the following $x^3 + x - 3x^2 - 3$.

Q 20 Factorize $x^3 - 6x^2 + 3x + 10$

SCIENCE

- A. Make a power point presentation of 7-8 slides on the topic -'Toilet to Tap'.
It should include
Present scenario of sewage treatment in India
Its comparison with countries like Singapore, Australia and Germany
- B. Attempt the assignment of chapters covered so far.(Attached below)

Note: Revise the Periodic Test syllabus.

General Instructions:

1. Submit the soft copy of power point presentation online at gdspsix@gmail.com or hard copy of only two pages with 4 slides on one page. Power point presentation should not exceed the limit of maximum 8 slides.
2. Solve the assignment in your class register.

ASSIGNMENT (PHYSICS) CHAPTER-8 (MOTION)

1. Two cars A and B race each other. The Car A ran for 2 min at a speed of 7.5 km/h, slept for 56 min and again ran for 2 min at a speed of 7.5 km/h. find the average speed of the car A in the race.
2. Anand leaves his house at 8.30 a.m. for his school. The school is 2 km away and classes start at 9.00 a.m. If he walks at a speed of 3 km/h for the first kilometer, at what speed should he walk the second kilometer to reach just in time?
3. An object moves along a straight line with an acceleration of 2 m/s^2 . If its initial speed is 10 m/s, what will be its speed 2 s later?
4. A bullet hits a Sand box with a velocity of 20 m/s and penetrates it up to a distance of 6 cm. Find the deceleration of the bullet in the sand box.
5. State with reasons, if it is possible or impossible, for an object in motion to have:
 - (a) Zero distance covered and may have non zero displacement.
 - (b) Zero speed at an instant but non zero acceleration at the same time.
 - (c) Zero speed and may have non zero velocity.
 - (d) Acceleration opposite to the direction of motion.
 - (e) Positive acceleration while speeding up
6. Name the 2 physical quantities which can be obtained from velocity-time graph.
7. An electric train is moving with a velocity of 120km/hr. how much distance will it cover in 30 sec?
8. A physical quantity is measured – 10m/s. is it speed or velocity?
9. A car is moving with a uniform velocity of 10m/s. the driver of the car decides to overtake the bus moving ahead of the car. So the driver of the car accelerates at 1m/s^2 for 10 sec. Find the velocity of the car at the end of 10 sec. also find the distance traveled by the car while accelerating
10. Plot the following graphs:
 - (a)distance –time graph for an object with uniform speed
 - (b)distance –time graph for an object with non- uniform speed
 - (c)velocity –time graph for uniform motion of a car
 - (d)Velocity –time graph for a car moving with uniform accelerations.

- (e) Velocity –time graph for a car moving with non- uniform accelerations.
(f) A body at rest
11. A car is traveling with a speed of 36km/h. the driver applies the brakes and retards the car uniformly. The car is stopped in 5s. Find (i) the retardation of the car (ii) distance traveled before it is stopped after applying the brakes.
 12. A car starts from rest and accelerates uniformly at the rate of 1m/s^2 for 5s. It then maintains a constant velocity for next 30s. Then brakes are applied and the car is uniformly retarded to rest in 10s. Find the maximum velocity attained by the car and the total distance traveled by it. Also plot v-t graph for the motion of the car
 13. In your everyday life you came across a range of motions in which acceleration is non uniform. Identify one example of each of the type.
 14. Can the state of absolute rest or motion be defined for any object? Comment.
 15. Derive the equation of motion by graphical representation method.

CHEMISTRY

1. On converting 25°C , 38°C and 66°C to kelvin scale, the correct sequence of temperature will be
 - (a) 298 K, 311 K and 339 K
 - (b) 298 K, 300 K and 338 K
 - (c) 273 K, 278 K and 543 K
 - (d) 298 K, 310 K and 338 K
2. A sample of water under study was found to boil at 102°C at normal temperature and pressure. Is the water pure? Will this water freeze at 0°C ? Comment.
3. It is a hot summer day, Priyanshi and Ali are wearing cotton and nylon clothes respectively. Who do you think would be more comfortable and why?
4. Which one of the following sets of phenomena would increase on raising the temperature?
 - (a) Diffusion, evaporation, compression of gases
 - (b) Evaporation, compression of gases, solubility
 - (c) Evaporation, diffusion, expansion of gases
 - (d) Evaporation, solubility, diffusion, compression of gases
5. Classify the following into osmosis/diffusion
 - (a) Swelling up of a raisin on keeping in water.
 - (b) Spreading of virus on sneezing.
 - (c) Earthworm dying on coming in contact with common salt.
 - (d) Shrinking of grapes kept in thick sugar syrup.
 - (e) Preserving pickles in salt.
 - (f) Spreading of smell of cake being baked throughout the house.
 - (g) Aquatic animals using oxygen dissolved in water during respiration.
6. Water as ice has a cooling effect, whereas water as steam may cause severe burns. Explain these observations.

7. What is dry ice?
8. Why do you see water droplets collected on the outer surface of the glass container, containing ice?
9. A balloon when kept in sun, bursts after some time? Why?
10. Why is it advisable to use pressure cooker at high altitudes?
11. Cotton is solid but it floats on water. Why?
12. Name and explain the factors that affect evaporation.
13. Explain how pressure and temperature determine the state of the substance.
14. Distinguish between evaporation and boiling.
15. Between 1 kg cotton and 1 kg sand which is denser? Explain.
16. On a hot sunny day why do we feel pleasant sitting under a tree?
17. With the help of an example, explain how diffusion of water in gases is essential?
18. Comment on the following statements:
 - (a) Evaporation produces cooling.
 - (b) Rate of evaporation of an aqueous solution decreases with increase in humidity.
 - (c) Sponge though compressible is a solid.
19. Why does the temperature of a substance remain constant during its melting point or boiling point?
20. You are provided with a mixture of naphthalene and ammonium chloride by your teacher. Suggest an activity to separate them with well labelled diagram.
21. Water as ice has a cooling effect, whereas water as steam may cause severe burns. Explain these observations.

BIOLOGY

I. Activity:

1. Effect of different types of solutions on plant cells.

Instructions- Prepare a report for the same on ruled A4 sheets and draw the diagrams of the experimental setup at the beginning and end of the activity..

Prepare an experimental set up consisting of two containers.

One container has water to which peeled pieces of carrot have been added.

In the second container, saturated sugar/salt solution has been put in which peeled pieces of carrot have been added.

Prepare this set-up and keep it for 6-8 hours or overnight.

Observe the carrots in the two containers and compare the physical state of the carrots carefully.

- 1. What is the difference in the physical state of the carrots as observed in the two containers?**
- 2. Name the process involved that has caused a change in the carrot piece in one container.**
- 3. Why has the above process occurred?**

4. Name the type of solutions in container A and B with reference to the carrot pieces.

5. Name one process in your daily life which works on the same principle.

(You can also conduct this activity by keeping raisins in plain water and grapes in salt solution)

2. Bacterial cells also possess similar feature. Collect information on ability of bacteria to survive under extreme environmental conditions.

II. Draw electron microscopic diagrams of plant cell, animal cell and a bacteria on A4 sized sheets.

Use your creative imagination to make them more attractive and innovative.

SOCIAL SCIENCE

Project Work on Disaster Management

Topic- Man Made Disasters

Guidelines : Prepare a Project report based on the given Man Made disasters-Nuclear accidents, Chemical and Industrial accidents & Biological accidents. The Project report should contain the definition, causes, effects and mitigation strategies of these disasters, examples and pictures of the disasters and Public Awareness Programs.

Note: - Do the above given project work on A4 Size ruled sheets. It will be hand written and supported with adequate pictures and illustrations appropriately labelled. The total length of the Project report will be 15-20 pages and presented in a neatly bound simple folder.

The project report will be developed and presented in the following order:

Page- 1 Cover Page showing project title, student information, school and year.

Page-2 Contents : List of contents with page numbers.

Page- 3 Acknowledgements : Acknowledging the institution, offices and libraries visited and persons who have helped.

Page- 4 Project Overview : Purpose, Aim, Methodology and experiences while doing the project.

Page- 5 to Page- 12 Subject Matter: Chapters with relevant headings.

Page- 13 Conclusions: Based on findings. (Summary and Suggestions).

Page- 14 Bibliography : It should have the title, pages referred, author, publisher, year of publication and if a website the name of the website with the specific website link which has been used.

All the photographs & sketches should be labelled and acknowledged.

PROJECT REPORT FOR CLASS IX

SPECIMEN

ACKNOWLEDGEMENTS

This is to acknowledge all those without whom this project would not have been reality. Firstly, I would wish to thank our Social Science teacher who gave his/her immense support, dedicated his/her time towards it and made us understand how to make this project. Without his/her guidance, the project would not have been complete.

The matter contained in it has been widely taken from the internet. The source of the newspaper article is 'The Times of India'. The statistical data has been extracted from

PROJECT EVALUATION PROFORMA

SCHOOL'S NAME _____

ADDRESS _____

STUDENT'S NAME _____

ROLL NO. _____

CLASS _____

SECTION _____

TEACHER'S ASSESSMENT:

1. Content accuracy and originality _____
2. Presentation and creativity _____
3. Process of project completion _____
4. Viva-Voce _____
5. Overall remarks _____

6. Teacher's signature _____ Date _____ with school stamp.

Prepare the chapters & reckoner done till May for the upcoming periodic test.