# SAINIK SCHOOL CHITTORGARH

UNDER THE AEGIS OF THE SAINIK SCHOOLS' SOCIETY, MINISTRY OF DEFENCE, GOVERNMENT OF INDIA

## AUTUMN BREAK
## HOLIDAY HOMEWORK

# CLASS : X

# SAINIK SCHOOL CHITTORGARH

## AUTUMN BREAK HOLIDAY HOMEWORK : 2024-25

| **SUBJECT** : BIOLOGY | |
|---|---|
| **CLASS & SECTION** : X A & X B | **SUBJECT TEACHER** : MR BB VYAS |
| **INSTRUCTION** : Write the project report on given topic on A4 size plain paper in your own handwriting. Paste colourful pictures, cuttings from newspapers, data etc. | |

| **ASSIGNMENT** |
|---|
| **CHAPTER /TOPIC**: "DIABETES MELLITUS"<br>Prepare an investigatory report on "DIABETES MELLITUS" emphasizing the following points or contents :<br>Content 1. Diabetes mellitus & its causes<br><br>Content 2. Symptoms of the disorders<br><br>Content 3. Precautionary measures<br><br>Content 4. Treatment of the disorder<br><br>Content 5. Short term & long term impact of Diabetes on Individual's Health<br><br>Content 6. Role of Pancreas<br><br>Content 7. Types of Diadetes |

# SAINIK SCHOOL CHITTORGARH

## AUTUMN VACATION HOLIDAY HOMEWORK

| SUBJECT NAME | |
|---|---|
| CLASS & SECTION: X | SUBJECT TEACHER NAME: Mr GYANESHWAR SINGH |
| **INSTRUCTIONS:** Write the balanced chemical equations if possible in the question | |

## ASSIGNMENT

**CHAPTER 1: Chemical Reactions and equations**

**1.** How combination reaction differs from decomposition reaction?

**2.** Differentiate between displacement and double displacement reactions.

**CHAPTER 2: Acids, Bases and Salts**

**1.** Name the gas evolved when dil. HCl reacts with an active metal. How is it recognised?

**2.** Write the name and chemical formula of the calcium compound used for disinfecting drinking water.How is this compound manufactured?

**CHAPTER 3: Metals and Non-Metals**

**1.** Name one metal and one non-metal that exists in liquid state at room temperature.

**2.** Why metals can act as reducing agents while non-metal cannot?

**CHAPTER 4: Carbon and its Compounds**

**1.** Give a electronic dot structure of $CO_2$ molecule.

**2.** What is the unique ability of carbon atom?

PROJECT WORK: Completion of practical file with all the four experiments.

*Note*: Kindly allocate the required number of questions.*

# SAINIK SCHOOL CHITTORGARH

## AUTUMN VACATION HOLIDAY HOMEWORK

| COMPUTER SCIENCE | |
|---|---|
| **CLASS & SECTION: X** | **SUBJECT TEACHER NAME: KULDEEP MALVIYA** |

**INSTRUCTIONS:**

- Make sure all the files are correctly named using the format: SCHOOL No_Name_HomeworkTitle (e.g., Class6_15_Arjun_ScratchProject).
- Plagiarism will not be tolerated, so ensure that the work is original.

## ASSIGNMENT

**Topic: Advanced Python Programming and Cyber Security**

**1. Practical Task:**

Write a all Excel formula in detail

**2. Research Task:**

- Prepare a presentation (minimum of 10 slides) on "Cyber Security: Best Practices for Protecting Personal Information Online." Include sections on phishing, passwords, malware, and two-factor authentication.

**3. Activity Task:**

- Create a poster or digital graphic that can be shared online about "Safe Internet Practices for Teens." You can use tools like Canva, Adobe Spark, or PowerPoint to design the poster.

# SAINIK SCHOOL CHITTORGARH

## AUTUMN VACATION HOLIDAY HOMEWORK

| SUBJECT NAME | |
|---|---|
| **CLASS & SECTION: 10** | **SUBJECT TEACHER NAME: Life skills & value education** |
| **INSTRUCTIONS: Kindly write your answers on A4 size plain paper. Answer to 2nd question should be of minimum 5-6 lines.** | |

## ASSIGNMENT

Read the given poem and answer the questions written at its end-

*A House Called Tomorrow*

-Alberto Rios

You are not fifteen, or twelve, or seventeen—
You are a hundred wild centuries

And fifteen, bringing with you
In every breath and in every step

Everyone who has come before you,
All the yous that you have been,

The mothers of your mother,
The fathers of your father.

If someone in your family tree was trouble,
A hundred were not:

The bad do not win—not finally,
No matter how loud they are.

We simply would not be here
If that were so.

You are made, fundamentally, from the good.
With this knowledge, you never march alone.

You are the breaking news of the century.
You are the good who has come forward

Through it all, even if so many days
Feel otherwise.  But think:

When you as a child learned to speak,
It's not that you didn't know words—

It's that, from the centuries, you knew so many,
And it's hard to choose the words that will be your own.

From those centuries we human beings bring with us
The simple solutions and songs,

The river bridges and star charts and song harmonies
All in service to a simple idea:

That we can make a house called tomorrow.
What we bring, finally, into the new day, every day,

Is ourselves.  And that's all we need
To start.  That's everything we require to keep going.

Look back only for as long as you must,
Then go forward into the history you will make.

Be good, then better.  Write books.  Cure disease.
Make us proud.  Make yourself proud.

And those who came before you?  When you hear thunder,
Hear it as their applause.

Q1-What is the theme of the poem?
Q2-What is the poem's message and what are the values that we can derive from this poem?

*Note*: Kindly allocate the required number of questions.*

# SAINIK SCHOOL CHITTORGARH

## AUTUMN VACATION HOLIDAY HOMEWORK

| SUBJECT NAME | |
|---|---|
| **CLASS & SECTION: X** | **SUBJECT TEACHER NAME: DIVYA RAO** |

**INSTRUCTIONS:** 1. The holiday homework will be considered and assessed as your English project work.

2. The marks awarded for this will be counted towards Internal –assessment.

3. Project should be done in a file (plastic strip file with A4 sheet may also be used) . Question 2,4 to be done in Question 3,5 in file. Else as directed.

4. On page 1: Write -English Project Work, Name, Class, Roll number, Topic etc.

## ASSIGNMENT

ENGLISH PROJECT WORK

NAME:

CLASS: SECTION

SCHOOL NUMBER:

HOUSE:

5. Last page of the project will carry the following certificate

**CERTIFICATE**

This is to certify that I_____ OF Class _____. Have done the English project work on my own. It is my own original work as per the guidelines provided by _____( Name of the teacher).

Signature

Name:

Q1. Login using the English lab Id allotted to you on www.ai.wordsworthlab.com. Complete and submit the given task assigned on it, both on the software and in module workbook. The date of completing the given task is 16 November.

Q2..Analyse the forthcoming chapters and prepare 15 multiple choice questions from each chapter of both the books.

Q3. Learn and use and write 100 new vocabulary words in sentences.

Q4.Prepare a mind map of all the chapters you have studied for Mid – Term.

Q5.Read a novel and an inspirational book during Autumn vacation (e.g. “The Great Gatsby “by F. Scott Fitzgerald) and submit a review.

Q6.Refresh the grammar knowledge by covering some grammar topics like- Tenses, clauses, phrases, Modals, Active and passive voice.

. **The deadline for submission of the above work is 19 Nov, 2024, within the subject period.**

# SAINIK SCHOOL CHITTORGARH

## AUTUMN VACATION HOLIDAY HOMEWORK

| SUBJECT - HINDI | |
|---|---|
| **CLASS & SECTION: X A, B** | **SUBJECT TEACHER NAME: B K SINGH** |

**INSTRUCTIONS:**

- सभी प्रश्नों को क्रमानुसार हल करें।
- अवकाश के बाद विद्यालय आने पर गृहकार्य जमा करना अति आवश्यक है।
- यह अवकाश कार्य आप के आंतरिक मूल्यांकन के अंतर्गत बहु-मूल्यांकन (Multiple Assessment) का एक अंग है।

## ASSIGNMENT

**पुस्तक : पाठ्य पुस्तक एवं व्याकरण**

**प्रश्न 1.** सूरदास एवं तुलसीदास का जीवन परिचय संक्षेप में लिखिए तथा उनका साहित्य में क्या योगदान है, उसका उल्लेख कीजिए ।

**प्रश्न 2.** साना-साना हाथ जोड़ी एवं माता का अंचल पाठ का सारांश अपने शब्दों में लिखिए।

**प्रश्न 3.** अपने राज्य के हिंदी से संबंधित किन्हीं तीन लेखकों का परिचय लिखिए।

**प्रश्न 4.** रचना के आधार पर वाक्य के भेद का नाम लिखते हुए उनके भेदों को उदाहरण सहित स्पष्ट कीजिए।

**परियोजन कार्य -** देश के किन्हीं पाँच धार्मिक /दर्शनीय स्थलों के बारे में विस्तारपूर्वक एक सचित्र चार्ट पेपर तैयार कीजिए।

**NOTEBOOK ASSIGNMENT:** सूरदास अथवा तुलसीदास के दो पदों को याद करें ।

# SAINIK SCHOOL CHITTORGARH

## AUTUMN VACATION HOLIDAY HOMEWORK

| SUBJECT : MATHEMATICS | |
|---|---|
| **CLASS & SECTION: X A & X B** | **SUBJECT TEACHER NAME: RAKESH RAMPURIA & MANISH JAIN** |

**INSTRUCTIONS:**

**1.** Use separate Note book for Mathematics.

**2.** Writing should be very neat and clean.

**3.** Do all work with date & day.

**INSTRUCTIONS FOR PROJECT WORK:**

**1.** Introduce yourself (Name of cadet, School No, Class & Section) and your topic (Name of Activity/Objective) at the beginning of your PROJECT WORK.

**2.** Activity should be framed in such a way that it is self-explanatory and well illustrated.

**3.** One cadet will do any one project out of the listed projects.

## ASSIGNMENT

**Notebook Assignment:**

CHAPTER 1: **REAL NUMBERS**

Q.1 The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds respectively. If they change simultaneously at 7 am, at what time they change together next.

Q.2 Prove that 6-√7 is irrational number, given that √7 is an irrational number.

Q.3 An army contingent of 612 members is to march behind an army band of 48 members in a parade. The two groups are to march in the same number of columns. What is the maximum number of columns in which they can march?

Q.4 Explain why 2× 3 × 5 + 5 and 5× 7× 11 + 7 × 5 are composite numbers.

CHAPTER 2: **POLYNOMIALS**

Q.1 If α and β, are zeroes of the quadratic polynomial x2 - 7x + 10, form a quadratic polynomial whose zeroes are $\alpha^2$ and $\beta^2$.

Q.2 Find a quadratic polynomial whose zeroes are reciprocals of the zeroes of the polynomial $f(x) = ax^2+bx+c$, $a\neq0.c\neq0$.

Q.3 Find the zeroes of a quadratic polynomial $2x^2+3x-14$ and verify the relationship between the zeroes and its coefficients.

Q.4 Write the polynomial, the product and sum of whose zeroes are −9/2 and −3/2 respectively.

CHAPTER 3: **PAIR OF LINEAR EQUATIONS IN TWO VARIABLES**

Q.1 Two people are 16 km apart on a straight road. They start walking at the same time. If they walk towards each other with different speeds, the will meet in 2 hours. Had they walked in the same direction with same speeds as before, they would have met in 8 hours. Find their walking speeds.

Q.2 If the system of linear equations 2x + 3y = 7 and 2ax + (a + b) y = 28 have infinite number of solutions, then find the values of a and b.

Q.3 A lending library has a fixed charge for the first three days and an additional charge for each day thereafter. Rittik paid Rs. 27 for a book kept for 7days and Manmohan paid Rs. 21 for a book kept for 5 days. Find the fixed charges and the charge for each extra day.

Q.4 Determine graphically the coordinates of the vertices of a triangle, the equations of whose sides are given by 2y-x=8, 5y-x=14 and y-2x=1.

CHAPTER 4: **QUADRATIC EQUATIONS**

Q.1 Two water pipes together can fill a tank in 15/8 hours. The pipe with larger diameter takes 2 hours less than the pipe with smaller diameter to fill the tank separately. Find the time in which each pipe can fill the tank separately.

Q.2 If one zero of the polynomial p(x) =$6x^2$+37x-(k-2) is reciprocal of the other, then find the value of k.

Q.3 Find the value of m for which the quadratic equation (m-1) $x^2$+2(m-1) x+1=0 has two real and equal roots.

Q.4 A train travels 360 km at a uniform speed. If the speed had been 5 km/hr more, it would have taken 1 hr less for the same journey. Find the speed of the train.

CHAPTER 5: **ARITHMEIC PROGRESSIONS**

Q.1 Rohan repays his total loan of Rs. 1, 18,000 by paying every month starting with the first instalment of Rs. 1,000. If he increases the instalment by Rs. 100 every month, what amount will be paid by him in the 30th instalment? What amount of loan has he paid after 30th instalment?

Q.2 The ratio of 11th term to the 18th term of an AP is 2:3. Find the ratio of the 5th term to the 21st term. Also, find the ratio of the sum of first 5 terms to the sum of first 21 terms.

Q.3 If pth term of an AP is q and qth term is p, then prove that its nth term is (p+q-n).

Q.4 If m times the mth term of an Arithmetic Progression is equal to n times its nth term and m $\neq$ n, show that the (m + n)th term of the A.P. is zero.

CHAPTER 6: **TRIANGLES**

Q.1 Sides AB and BC and median AD of a triangle ABC are respectively proportional to sides PQ and QR and median PM of ΔPQR. Show that ΔABC ~ PQR.

Q.2 Diagonals AC and BD of a trapezium ABCD with AB‖DC intersect each other at point O. show that OA/ OC = OB/ OD .

Q.3 .If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, prove that the other two sides are divided in the same ratio.

Q.4 If the diagonals of a quadrilateral divide each other proportionally, prove that it is a trapezium.

CHAPTER 7: **COORDINATE GEOMETRY**

Q.1 Find the ratio in which y-axis divides the line segment joining the points (5, -6) and (-1, -4).

Q.2 The line segment joining the points A (4,-5) and B (4, 5) is divided by the point P such that AP: AB=2:5. Find the coordinates of P.

Q.3 If the points A(2,3) , B(-5,6), C(6,7) and D(p,4) are the vertices of a parallelogram ABCD, find the value of p.

Q.4 Points P and Q trisect the line segment joining the points A (– 2, 0) and B (0, 8) such that P is near to A. Find the coordinates of points P and Q.

CHAPTER 8: **INTRODUCTION TO TRIGONOMETRY**

Q.1 Prove that (cosec $A$ − sin $A$)(sec $A$ − cos $A$) = 1 /(cot $A$+tan$A$) .

Q…2 Prove that: (sin$\theta$−cos$\theta$+1)/(sin$\theta$+cos$\theta$−1) = 1 /(sec$\theta$−tan$\theta$).

Q.3 Prove that: $(\sin A - 2\sin^3 A)/(2\cos^3 A - \cos A) = \tan A$.

Q.4 Prove that: $(2\cos^3\theta - \cos\theta)/(\sin\theta - 2\sin^3\theta) = \cot\theta$

CHAPTER 9: **SOME APPLICATIONS OF TRIGONOMETRY**

Q.1 From a point on the ground, the angles of elevation of the bottom and the top of a transmission tower fixed at the top of a 20 m high building are $45^0$ and $60^0$ respectively. Find the height of the tower. (Use √3 = 1.73)

Q.2 A man on the top of a vertical tower observes a car moving at a uniform speed coming directly towards it. If it takes 18 minutes for the angle of depression to change from $30^0$ to $60^0$, how soon after this will the car reach the tower?

Q.3 Two ships are approaching a light-house from opposite directions. The angles of depression of the two ships from the top of the light-house are $30^0$ and $45^0$ . If the distance between the two ships is 100 m, find the height of the light-house. [Use √3 = 1.732]

Q.4 The angle of elevation of an aeroplane from a point $A$ on the ground is $60^0$ . After a flight of 15 seconds, the angle of elevation changes to $30^0$. If the aeroplane is flying at a constant height of 1500√3 m, find the speed of the plane in km/hr.

CHAPTER 10: **CIRCLES**

Q.1 Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle.

Q.2 Prove that the length of tangents drawn from an external point to a circle are equal.

Q.3 Prove that a parallelogram circumscribing a circle is a rhombus.

Q.4 From an external point, two tangents are drawn to a circle. Prove that the line joining the external point to the centre of the circle bisects the angle between the two tangents.

**PROJECT WORK:**

1. To make a mathematical instrument 'clinometer' for measuring the angle of elevation/depression of an object.
2. To establish a formula for the sum of first n terms of an Arithmetic Progression.
3. To obtain the formula for the lateral surface area of a right circular cylinder in terms of radius (r) of its base and height (h).
4. To verify that the lengths of tangents to a circle from some external point are equal.
5. To verify experimentally that the tangent at any point of a circle is perpendicular to the radius through that point.
6. To get familiar with the idea of probability of an event through a double card experiment.
7. To give a suggestive demonstration of the formula for the volume of a right circular cone.
8. To find the formula for the volume of a sphere with the help of an activity.
9. To give a suggestive demonstration of the formula for the surface area of a sphere in terms of its radius.
10. To give a suggestive demonstration of the formula for the lateral surface area and total surface area of a right circular cone.
11. To obtain the formula for the lateral surface area of a right circular cylinder in terms of radius (r) of its base and height (h).
12. To verify the conditions of consistency/ inconsistency for a pair of linear equations in two variables by graphical method.
13. To find the sum of the first n odd natural numbers.
14. To verify the distance formula by graphical method.
15. To verify the Basic Proportionality Theorem using parallel line board and triangle cut-outs.
16. To verify section formula by graphical method.
17. To establish the criteria for similarity of two triangles.
18. To obtain formula for area of a circle experimentally.

# SAINIK SCHOOL CHITTORGARH

## AUTUMN VACATION HOLIDAY HOMEWORK

| SUBJECT NAME | |
|---|---|
| **CLASS & SECTION: X (A, B)** | **SUBJECT TEACHER NAME: Bhandarkar C L, Onkar Singh.** |
| **INSTRUCTIONS: Complete the given work in separate note book.<br>Project work is compulsory for all Cadets marks will be included in final practical exam.** | |

## ASSIGNMENT

**CHAPTER 10: LIGHT- REFLECTION AND REFRACTION**

**Content 1.** Identify the device used as the spherical mirror or lens in the following cases. When the image formed is virtual and erect in each case.

(a) Object is placed between device and its focus, image formed is enlarged and behind it.

(b) Object is placed between the focus and device, image formed is enlarged and on the same side as that of the object.

(c) Object is placed between infinity and device, image formed is diminished and between focus and optical centre on the same side of the object.

(d) Object is placed between infinity and device. Image formed is diminished and between pole and focus, behind it.

**Content 2.** Why does a light ray incident on a rectangular glass slab immersed in any medium emerges parallel to itself? Explain using a diagram.

**Content 3.** Refractive index of diamond with respect to the glass is 1.6 and absolute R.I of glass is 1.5. Find the absolute refractive index of diamond.

**Content 4.** A spherical mirror produces an image of magnification -1 on a screen placed at a distance of 50cm from the mirror: -

(a) Write the type of mirror.
(b) Find the distance of the image from the object.
(c) What is the focal length of the mirror?
(d) Draw the ray diagram to show the image formation in this case?

**Content 5.** A student focused the image of a candle flame on a white screen using a convex lens. He noted down the position of the candle screen and the lens as under

Position of candle = 12.0cm

Position of convex lens = 50.0 cm

Position of the screen = 88.0 cm

i.) what is the focal length of the convex lens?

ii) Where the image be formed if he shifts the candle towards the lens at a position of 31.0 cm

iii) What will be the nature of the image formed if he further shifts the candle towards the lens?

iv) Draw a ray diagram to show the formation of the image in case (iii) as said above.

**CHAPTER11: THE HUMUN EYE AND COLOURFUL WORLD**

**Content 1.** Write the function of (i) pupil (ii) Cornea (iii) retina (iv) ciliary muscle.

**Content 2.** Draw neat labelled diagram for (i) Myopia (ii) Hypermetropia

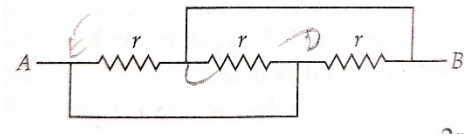
**Content 3.** Draw neat labelled diagram of recombination of white light.

**Content 4.** What do you mean by Atmospheric refraction. Explain formation of rainbow.

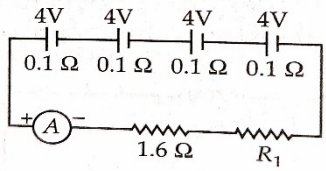
**Content 5.** What is Tyndall effect? Scattering of light depends upon which factor?

**CHAPTER 12: ELECTRICITY**

**Content 1.** Three resistances each equal to 'r' are connected as shown in the fig. The equivalent resistance between A and B is----




**Content 2.** If the current flowing in the circuit is 2 A, the value of $R_1$ is ---




**Content 3.** Length of a conducting wire is increased by 100%. Then find the change in the resistance of the wire ?

**Content 4.** Explain with neat labelled diagram force experienced by the current carrying conductor placed in a uniform magnetic field?

**Content 5.** Draw neat labelled diagram of Domestic electric circuit. Also write the principle and working of fuse wire?

**Project:-** For annual project work-prepare working model of any topic related to science with file. eg. Human eye formation of image using electric circuit, making simple telescope using two lenses.

**Notebook Assignment:** All question and answers from exercise chapter 12 must be written in your homework notebook.

*Note*: Kindly allocate the required number of questions.*

# SAINIK SCHOOL CHITTORGARH

## AUTUMN VACATION HOLIDAY HOMEWORK

| SOCIAL SCIENCE | |
|---|---|
| **CLASS & SECTION: X- A** | **SUBJECT TEACHER NAME: Dhiraj Sharma** |

**INSTRUCTIONS:**

- File work for given topic for different sections

## ASSIGNMENT

**TOPIC – SUSTAINABLE DEVELOPMENT**

Following contents may be added for above mention topic

(i) What is sustainable development?

(ii) Is sustainable development just about saving the environment, or other are there other factors involved such as human welfare, construction, politics or economies?

(iii) Are there any local sustainable development projects?

(iv) What are the benefits of sustainable development?

(v) What are some national sustainable projects?

(vi) What are problems and challenges associated with sustainable development?

(vii) What are some organizations that are involved in sustainable development?

(viii) Zero hunger

(ix) Clean water and sanitation

(x) Conclusion

(xi) Bibliography

(xii) Paste pictures from newspaper or handmade pictures as much u can

# SAINIK SCHOOL CHITTORGARH

## AUTUMN VACATION HOLIDAY HOMEWORK

| SOCIAL SCIENCE | |
|---|---|
| **CLASS & SECTION: X- B** | **SUBJECT TEACHER NAME: Dhiraj Sharma** |

**INSTRUCTIONS:**

- File work for given topic for different sections

## ASSIGNMENT

**TOPIC – SOCIAL ISSUES**

**Following contents may be added for above mention topic**

(i) Highlight any one social evil which you feel India is cursed with today

(ii) Give reasons why we are facing this evil after so many constitutional arrangements

(iii) Collect data from newspaper or magazine or from your surroundings to prove it is serious social concern and needs to be dealt with utmost priority.

(iv) Suggest ways to overcome this evil and prepare guidelines for social campaigns.

(v) Make a collage of newspaper cutting to show how it is affecting our society(Handmade pictures are also acceptable)

(vi) Write a slogan for any one social evil that you have dealt with.

(vii) List the programme and policies introduced by the government to eradicate this evil

(viii) Conclusion

(ix) Bibliography