

**VASISHTHA
GENESIS
SCHOOL**
BARDOLI, DIST. SURAT, GUJ



DIWALI ASSIGNMENT CLASS : X

Student's Name: _____

Division: _____ Roll No: _____



At. & Po. Baben, Tal. Bardoli, Dist. Surat





Dear Parents,
Greetings from VGS Family!

As we celebrate the Festival of Lights, Diwali, we extend our warmest greetings and best wishes to you and your family. May this joyous occasion bring happiness, prosperity, and togetherness into your lives.

We are excited to share the spirit of Diwali with your children at school. Diwali is a time for reflection, renewal, and gratitude. It is a time to celebrate the triumph of light over darkness and good over evil.

Along with this message, we have enclosed subject-wise Diwali assignment sheet(s) for your child, each thoughtfully designed to enhance their understanding, while reinforcing their academic growth. We believe that these assignments will not only allow your child to appreciate the cultural and spiritual significance of Diwali but also promote their subject-specific knowledge and skills.

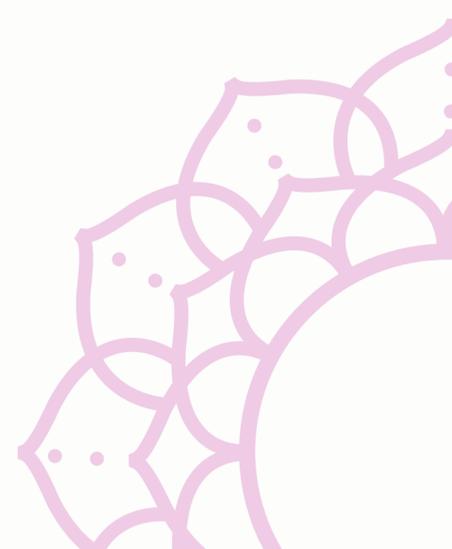
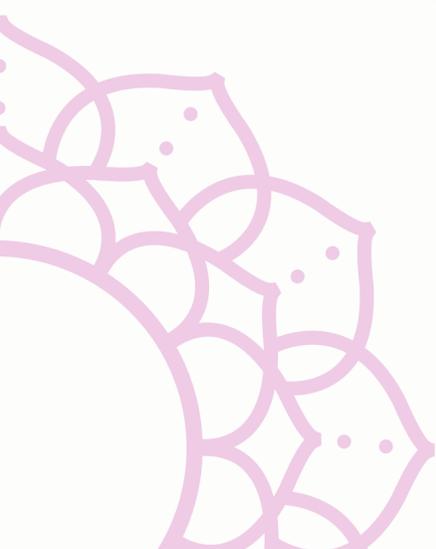
We kindly request that you encourage your child to complete these assignments enthusiastically and curiously. Our teachers have carefully curated them to align with their ongoing subjects, ensuring a seamless blend of celebration and education. Should your child require any support or clarification, please do not hesitate to reach out to our dedicated teaching staff.

We wish you a Diwali filled with love, joy, and the company of loved ones. May this festival illuminate your lives with positivity and prosperity, and may the completion of these assignments further brighten your child's academic journey.

Once again, wishing you all a Happy Diwali and a Prosperous New Year!

Warm regards,

Dr Gautam Guha
Principal



VASISHTHA GENESIS SCHOOL, BABEN, BARDOLI
DIWALI ASSIGNMENT
CLASS 10

SUBJECT	CONTENT
English	Prepare an assignment from the given question bank of letter / Analytical Paragraph. Letter writing questions Q 7, Q 15 & Q 34 Analytical paragraph Q 10, Q 5 Take assignment papers and answer the questions on it named as 'Assignment 1 to 5'.
Mathematics	SEPARATE QUESTIONS ATTACHED HEREWITH
SOCIAL SCIENCE	Prepare an assignment on the following questions: Ch-5 History- Print Culture in the Modern World Q-1. "Woodblock print came to Europe after 1295". Give any three reasons to explain the above statement. (3 marks) Q-2. In what ways the Vernacular Press Act of 1878 was a repressive step by the Government Explain. (3 marks) Q-3. How had the earliest print technology developed in the world Explain. (5 marks) Q-4. 'From the late 19th century, issue of caste discrimination began to be written about in many printed tracts and essays.' Explain by giving examples. (5 marks) Ch-5 Civics- Outcomes of Democracy Q-1. 'A democratic government is a legitimate government.' Support the statement with arguments. (3 marks) Q-2. 'Democracy accommodates social diversities.' Support the statement with examples. (3 marks) Q-3. 'There is an overwhelming support for the idea of democracy all over the world.' Support the statement. (3 marks)
SCIENCE	BIOLOGY: Prepare a brief write-up on the management of the following natural resources: <u>COAL, PETROLEUM AND NATURAL GAS.</u> <ul style="list-style-type: none"> Your write-up may also include: <ul style="list-style-type: none"> ✓ Concept map / Mind map / Pictures NOTE - The write-up including relevant explanation of the selected topic should be completed in less than 7-8 pages in A4 size project papers. CHEMISTRY: Prepare a Mind Map on the following Chapters on A3 Size sheets: 1) Ch.1 Chemical Reactions and Equations: Topics → Types of Chemical Reaction, Corrosion 2) Ch.3 Metals and Non-metals: Topics → Chemical Properties of Metals and Non-metals, Extraction of Metal PHYSICS: SEPARATE QUESTIONS ATTACHED HEREWITH
HINDI	निम्नलिखित पाठ्यपुस्तक को पढ़कर पाठ के शिर्षक एवं लेखक तथा कवियों के नमो के साथ उनके चित्र लगाकर संक्षिप्त परिचय A4 - साइज़ के पेपर में लिखिए। <ul style="list-style-type: none"> स्पर्श संचयन
GUJARATI	નીચે આપેલા વિષયો પર જાહેરાત તૈયાર કરી સૂચનો લાખો. ૧) સર્વ શિક્ષા અભિયાન ૨) આઝાદી નો અમૃત મહોત્સવ ૩) G-20 ૪) વૃક્ષ વાવો, પૃથ્વી બચાવો
IT	PROJECT WORK: Any Interdisciplinary Real World Case Study to be taken. Summarized data reports of same can be presented in base. Input should be taken using forms and output should be done using reports using base. Documentation of the case study should be presented using writer.

MATHEMATICS ASSIGNMENT

Chapter 4. QUADRATIC EQUATIONS

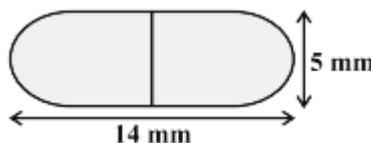
- 1 Represent the following situations mathematically:
 - (a) John and Jivanti together have 45 marbles. Both of them lost 5 marbles each, and the product of the number of marbles they now have is 124. We would like to find out how many marbles they had to start with.
 - (b) A cottage industry produces a certain number of toys in a day. The cost of production of each toy (in rupees) was found to be 55 minus the number of toys produced in a day. On a particular day, the total cost of production was ₹ 750. We would like to find out the number of toys produced on that day
- 2 Check whether the following are Quadratic Equations:
 - (a) $(x + 1)^2 = 2(x - 3)$
 - (b) $(x - 2)(x + 1) = (x - 1)(x + 3)$
 - (c) $(x + 2)^3 = 2x(x^2 - 1)$
- 3 Find the roots of the quadratic equation $3x^2 - 2\sqrt{6}x + 2 = 0$
- 4 Find the discriminant of the equation $3x^2 - 2x + \frac{1}{3} = 0$ and hence find the nature of its roots. Find them, if they are real.
- 5 Explain nature of roots along with its cases and formulas.

Chapters 8 & 9. TRIGONOMETRY & ITS APPLICATIONS

- 1 Prepare the Trigonometric Value Table for angles 0, 30, 45, 60, 90.
- 2 Write all the 4 identities and the formulas of Trigonometric ratios.
- 3 Given $\operatorname{cosec} A = 4/3$, calculate all other trigonometric ratios.
- 4 Prove that: $(\operatorname{cosec} A - \cot A)^2 = \frac{1 - \cos A}{1 + \cos A}$
- 5 A person standing on the bank of a river observes that the angle of elevation of the top of a tree standing on the opposite bank is 60° . When he moves 40 meters away from the bank, he finds the angle of elevation to be 30° . Find the height of the tree and the width of the river.

Chapter 12. SURFACE AREAS & VOLUMES

- 1 Make a table listing out the Curved Surface Area, Total Surface Area and Volume of following solid shapes.
 - (a) Cube (b) Cuboid (c) Sphere (d) Hemisphere (e) Cone (f) Cylinder
- 2 A medicine capsule is in the shape of a cylinder with two hemispheres stuck to each of its ends (see Fig.). The length of the entire capsule is 14 mm and the diameter of the capsule is 5 mm. Find its surface area.



- 3 A solid is in the shape of a cone standing on a hemisphere with both their radii being equal to 1 cm and the height of the cone is equal to its radius. Find the volume of the solid in terms of π .
- 4 A tent is in the shape of a cylinder surmounted by a conical top. If the height and diameter of the cylindrical part are 2.1 m and 4 m respectively, and the slant height of the top is 2.8 m, find the area of the canvas used for making the tent. Also, find the cost of the canvas of the tent at the rate of Rs. 500 per m^2 . (Note that the base of the tent will not be covered with canvas)
- 5 A vessel is in the form of an inverted cone. Its height is 8 cm and the radius of its top, which is open, is 5 cm. It is filled with water up to the brim. When lead shots, each of which is a sphere of radius 0.5 cm are dropped into the vessel, one-fourth of the water flows out. Find the number of lead shots dropped in the vessel.

Chapter 13. STATISTICS

- 1 Write formula to find:
 - (a) Mean of grouped data by Direct Method, Assumed mean method and Step Deviation method clearly mentioning the meaning of the letters used
 - (b) Median of grouped data clearly mentioning the meaning of the letters used and
 - (c) Mode of grouped data clearly mentioning the meaning of the letters used
- 2 In a retail market, fruit vendors were selling mangoes kept in packing boxes. These boxes contained varying number of mangoes. The following was the distribution of mangoes according to the number of boxes. Find the mean number of mangoes kept in a packing box. Which method of finding the mean did you choose?

Number of mangoes	50 - 52	53 - 55	56 - 58	59 - 61	62 - 64
Number of boxes	15	110	135	115	25

- 3 The following data gives the distribution of total monthly household expenditure of 200 families of a village. Find the modal monthly expenditure of the families. Also, find the mean monthly expenditure :

Expenditure (in ₹)	Number of families
1000 - 1500	24
1500 - 2000	40
2000 - 2500	33
2500 - 3000	28
3000 - 3500	30
3500 - 4000	22
4000 - 4500	16
4500 - 5000	7

- 4 The following table gives the distribution of the life time of 400 neon lamps. Find the median life time of a lamp.

Life time (in hours)	Number of lamps
1500 - 2000	14
2000 - 2500	56
2500 - 3000	60
3000 - 3500	86
3500 - 4000	74
4000 - 4500	62
4500 - 5000	48

Chapter 14. PROBABILITY

- A bag contains a red ball, a blue ball and a yellow ball, all the balls being of the same size. Kritika takes out a ball from the bag without looking into it. What is the probability that she takes out the (a) yellow ball? (b) red ball? (c) blue ball?
- Harpreet tosses two different coins simultaneously (*say, one is of Rs. 1 and other of Rs. 2*). What is the probability that she gets at least one head?
- Two dice, one blue and one grey, are thrown at the same time. Write down all the possible outcomes. What is the probability that the sum of the two numbers appearing on the top of the dice is (a) 8 (b) 13 (c) less than or equal to 12?
- Which of the following arguments are correct and which are not correct? Give reasons for your answer.
 - If two coins are tossed simultaneously there are three possible outcomes—two heads, two tails or one of each. Therefore, for each of these outcomes, the probability is $\frac{1}{3}$.
 - If a die is thrown, there are two possible outcomes—an odd number or an even number. Therefore, the probability of getting an odd number is $\frac{1}{2}$.
- For Deck of cards, give detail about the number of cards in deck based on their type. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting
 - a king of red colour
 - a face card
 - a red face card
 - the jack of hearts
 - a spade
 - the queen of diamond

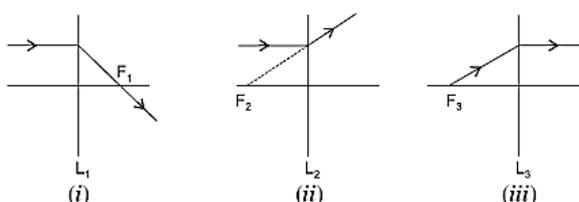
PHYSICS ASSIGNMENT

Answer the following questions in your Physics Notebook:

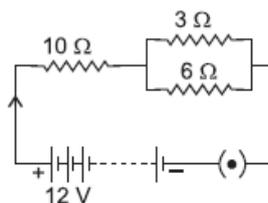
- The image of a candle flame placed at a distance of 30 cm from a spherical lens is formed on a screen placed on the other side of the lens at a distance of 60 cm from the optical centre of the lens. Identify the type of lens and calculate its focal length. If the height of the flame is 3 cm, find the height of its image.
- A convex lens has a focal length of 10 cm. At what distance from the lens should the object be placed so that it forms a real and inverted image 20 cm away from the lens? What would be the size of the image formed if the object is 2 cm high? With the help of a ray diagram show the formation of the image by the lens in this case
- An object 2 cm high is placed at a distance of 64 cm from a white screen. On placing a convex lens at a distance of 32 cm from the object it is found that a distinct image of the object is formed on the screen. What is the focal length of the convex lens and size of the image formed on the screen? Draw a ray diagram to show the formation of the image in this position of the object with respect to the lens.
- Two lenses have powers of (i) + 2D and (ii) - 4D. What is the nature and focal length of each lens?
 - An object is kept at a distance of 100 cm from each of the above lenses. Calculate the (i) image distance and (ii) magnification in each of the two cases.

- What is the focal length of the lens used in sunglasses?

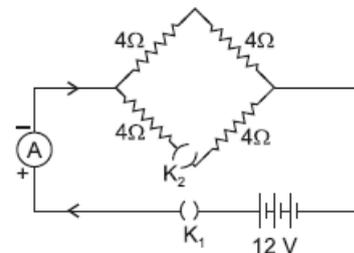
(b) The following figures show the path of light rays through three lenses marked L_1 , L_2 and L_3 and their focal points F_1 , F_2 and F_3 respectively. Identify the nature of lenses.



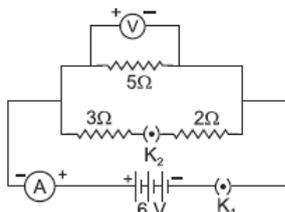
- Consider the circuit shown in the diagram. Find the current in 3 Ω resistor.



- Calculate the electric current in the given circuit when
 - key K_1 is open and K_2 is closed
 - both the keys are closed
 - K_1 is closed and K_2 is open



- In the given circuit, calculate:
 - net resistance of the circuit.
 - voltmeter reading when
 - both the keys are open, and
 - both the keys are closed.



- Two lamps, one rated 60 W at 220 V and the other 40 W at 220 V, are connected in parallel to the electric supply at 220 V.
 - Draw a circuit diagram to show the connections.
 - Calculate the current drawn from the electric supply.
 - Calculate the total energy consumed by the two lamps together when they operate for one hour.
- What is meant by electric current? Name and define its SI unit. In a conductor electrons are flowing from B to A. What is the direction of conventional current? Give justification for your answer. A steady current of 1 ampere flows through a conductor. Calculate the number of electrons that flows through any section of the conductor in 1 second. (Charge on electron 1.6×10^{-19} coulomb).