

SHREE VASISHTHA VIDHYALAYA

Diwali Assignment (2024 25)

STD-11 Science

Sr. No.	Subject	Topics
1.	English	<p>Note: Write in project paper and submit in separate file with Name, Class, Roll No & Subject.</p> <ol style="list-style-type: none"> Why do you think old age needs more attention and care? Do old people need someone to be there to look after them? Discuss with reference to the chapter "Portrait of a Lady". The reaction of the crew and the children gives us an insight into the human mind and how it can help us to survive any disaster? Discuss in the light of the chapter "We are not afraid to die..." What do we know from the story —Discovering Tut... the Saga continues – about the materialistic attitude of a man? "One day back there in the good old days when I was nine and the world was full of every imaginable kind of magnificence, and life was still a delightful and mysterious dream..."The story begins in a mood of nostalgia. Can you narrate some incident from your childhood that might make an interesting story? The story is divided into pre-War and post-War times. What hardships do you think the girl underwent during these times? Explain in the light of the chapter The Address. Give your brief comments on the five main characters in the play Mother's Day. You are Sanya / saran Bansal, the mother/father of a 14-year-old son. Your son is weak in maths. Draft a classified advertisement, seeking a suitable maths tutor. You are the school captain at Holy Heart School, Vasant Nagar Lucknow. Your school is organising a two-day fete and blood donation camp. Prepare a poster for the same, including all essential details. Write an invitation in not more than 50 words to your friend Rameshwari / Ramesh to spend her winter break with you in Mumbai. You are Puja / Puneet of 25, M.G. Road, Mumbai. You are Dr. Suchitra Mukherjee. You have received an invitation from the Director, Health Services, Kharagpur, W.B, to preside over a gathering of leading medical practitioners attending a workshop on mental wellness on 09 November, 2022 at 11 a.m. in the Public Hospital, Jammu, J & K. Respond to accept the invitation in about 50 words.
2.	Physics	<p>Note: Solve the following in exercise/ paper solution notebook.</p> <ol style="list-style-type: none"> The radius of a uniform wire $r = 0.024$ cm. Take $\pi = 3.142$, then area of cross-section upto appropriate significant figures. Find the value of 100 J on a system which has 20 cm, 250 g and half minute as fundamental units of length, mass and time. Can a body have zero velocity and still be accelerating? If yes gives any situation. What will be the effect on horizontal range of a projectile when its initial velocity is doubled keeping angle of projection same? Draw (a) acceleration - time (b) velocity - time (c) Position - time graphs representing motion of an object under free fall. Neglect air resistance. At what angle do the two forces $(P + Q)$ and $(P - Q)$ act so that the resultant is $\sqrt{3P^2 + Q^2}$. Show that there are two values of time for which a projectile is at the same height. Also show that the sum of these two times is equal to the time of flight.

		<p>8. Define centripetal acceleration. Derive an expression for the centripetal acceleration of a particle moving with constant speed v along a circular path of radius r.</p> <p>9. Two town A and B are connected by a regular bus service with a bus leaving in either direction every T min. A man cycling with a speed of 20 kmh^{-1} in the direction A to B notices that a bus goes past him every 18 min in the direction of his motion, and every 6 min in the opposite direction.</p> <p>10. China wares are wrapped in straw paper before packing. Why?</p> <p>11. A hunter has a machine gun that can fire 50g bullets with a velocity of 150 ms^{-1}. A 60 kg tiger springs at him with a velocity of 10 ms^{-1}. How many bullets must the hunter fire into the target so as to stop him in his track?</p> <p>12. Two blocks of mass 2 kg and 5 kg are connected by an ideal string passing over a pulley. The block of mass 2 kg is free to slide on a surface inclined at an angle of 30° with the horizontal whereas 5 kg block hangs freely. Find the acceleration of the system and the tension in the string.</p> <p>13. Define the principle of conservation of linear momentum. Deduce the law of conservation of linear momentum from Newton's third law of motion.</p> <p>14. K.E. of a body is increased by 300 %. Find the % increase in its momentum?</p> <p>15. Prove that bodies of identical masses exchange their velocities after head-on elastic collision.</p> <p>16. A bullet of mass 0.02 kg is moving with a speed of 10 ms^{-1}. It can penetrate 10 cm of a wooden block, and comes to rest. If the thickness of the target would be 6 cm only, find the K.E. of the bullet when it comes out.</p> <p>17. Can a body be in equilibrium while in motion? If yes, give an example.</p> <p>18. Three masses 3 kg, 4 kg and 5 kg are located at the corners of an equilateral triangle of side 1 m. Locate the centre of mass of the system.</p> <p>19. At what depth is the value of 'g' same as at a height of 40 km from the surface of earth.</p> <p>20. The escape velocity of a projectile on earth's surface is 11.2 kms^{-1}. A body is projected out with thrice this speed. What is the speed of the body far away from the earth ? Ignore the presence of the sun and other planet.</p>
3.	Chemistry	<p>A. <u>Investigatory projects</u></p> <ol style="list-style-type: none"> 1. Checking the bacterial contamination in drinking water by testing sulphide ion 2. Study of the methods of purification of water. 3. Testing the hardness, presence of Iron, Fluoride, Chloride, etc., depending upon the regional variation in drinking water and study of causes of presence of these ions above permissible limit (if any). 4. Investigation of the foaming capacity of different washing soaps and the effect of addition of Sodium carbonate on it. 5. Study the acidity of different samples of tea leaves. 6. Determination of the rate of evaporation of different liquids Study the effect of acids and bases on the tensile strength of fibers. 7. Study of acidity of fruit and vegetable juices. <p>B. To solve exercise questions of Thermodynamics and question no. 1 to 30 of Equilibrium.</p>
4.	Mathematics	<p>Note: Complete the worksheet and file it properly and submit with Name, Class, Roll No. and Subject.</p> <p>Q1. Which term of the GP 2, 8, 32, 128.....is 131072?</p>

- Q2. If a, b, c, d are in GP, prove that $(a^2+b^2+c^2)(b^2+c^2+d^2) = (ab + bc + cd)^2$.
- Q3. Find the GP whose 4th and 7th terms are $\frac{1}{18}$ and $\frac{-1}{486}$ respectively.
- Q4. If a and b are the roots of $x^2 - 3x + p = 0$ and c and d are the roots of $x^2 - 12x + q = 0$, where a, b, c, d form a GP, prove that $(q + p) : (q - p) = 17:15$.
- Q5. The product of three numbers in GP is 216. If 2, 8, 6 be added to them in that order, we get an AP. Find the numbers.
- Q6. If a, b, c are three consecutive terms of an A.P. and x, y, z are three consecutive terms of a G.P. Then prove that $x^{b-c} \cdot y^{c-a} \cdot z^{a-b} = 1$
- Q7. In a G.P. of even number of terms, the sum of all terms is 5 times the sum of the odd terms. Find the common ratio of the G.P.
- Q8. If in an A.P., $S_n = q n^2$ and $S_m = qm^2$, where S_r denotes the sum of r terms of the A.P., then find the value of S_q .
- Q9. A G.P. consists of an even number of terms. If the sum of all the terms is 5 times the sum of terms occupying odd places, then find the common ratio.
- Q10. In an A.P., the first term is 2 and the sum of the first five terms is one-fourth of the next five terms. Show that 20th term is -112.
- Q11. The ratio of the A.M. and G.M. of two positive numbers a and b, is m: n. Show that $a : b = (m + \sqrt{m^2 - n^2}) : (m - \sqrt{m^2 - n^2})$.
- Q12. If the m^{th} term of an A.P be $\frac{1}{n}$, and $n^{th} = \frac{1}{m}$ then show that its $(mn)^{th}$ term is 1.
- Q13. In an A.P, it is being given that $\frac{T_4}{T_7} = \frac{2}{3}$. Find $\frac{T_7}{T_{10}}$.
- Q14. Find the value of x such that $1 + 4 + 7 + \dots + x = 715$.
- Q15. Find the equation of the line where length of the perpendicular segment from the origin to the line is 4 and the inclination of the perpendicular segment with the positive direction of x-axis is 30° .
- Q16. Find the equation to the straight line passing through (1,1) and perpendicular to the line $3x - 5y + 11 = 0$.
- Q17. A ray of light coming from the point (1, 2) is reflected at a point A on the x-axis and then passes through the point (5, 3). Find the coordinates of the point A.
- Q18. Point R (h, k) divides a line segment between the axes in the ratio 1: 2. Find equation of the line.
- Q19. Two lines passing through the point (2, 3) intersects each other at an angle of 60° . If slope of one line is 2, find equation of the other line.
- Q20. If the lines $y = 3x + 1$ and $2y = x + 3$ are equally inclined to the line $y = mx + 4$, find the value of m.
- Q21. In what direction should a line be drawn through the point (1, 2) so that its point of intersection with the line $x + y = 4$ is at a distance $\frac{\sqrt{6}}{3}$ from the given point?
- Q22. Find the distance of the line $4x + 7y + 5 = 0$ from the point (1, 2) along the line $2x - y = 0$
- Q23. If p and q are the lengths of perpendiculars from the origin to the lines $x \cos \theta - y \sin \theta = k \cos 2 \theta$ and $x \sec \theta + y \operatorname{cosec} \theta = k$, respectively, prove that $p^2 + 4q^2 = k^2$.
- Q24. Show that the path of a moving point such that its distances from two lines $3x - 2y = 5$ and $3x + 2y = 5$ are equal is a straight line.
- Q25. If p is the length of perpendicular from the origin to the line whose intercepts on the axes are a and b, then show that $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$.

Find out fact on following investigatory project.

Instruction :-

- ❖ Write neatly and legibly
- ❖ Uses bullet point, subheading ,and diagrams to make it more readable

5. Biology

		<ul style="list-style-type: none"> ❖ Keep your language formal and scientific ❖ Add related images ❖ Write your observation and data collected in detail. ❖ Project file must have 15 to 20 pages. <ol style="list-style-type: none"> (1) Does oregano have antibiotic effect ? (2) Salt: friend or foe (3) Effect of reading and working on the computer on vision (4) Determining the effect of water temperature and exposure terms on seed germination (5) mystery behind bacteria levels in gym equipment (6) Does the surface clarity of plastics bottles solar water disinfection (7) Fun with phosphorus.
6.	Informatics Practices	<p>As our country is steadily moving towards digitalization, observe the digital activity around you in terms of data collection and segregate them into the python sequence & mapping data type like list & dictionary. Write atleast ten such variables in your notebook with the data as per the given format. For your reference one example is given below.</p> <p>location- <u>Petrol pump</u> datatype of variable = dictionary petrol= {'Gujarat': '95.50/L', 'Delhi': '94.72/L', 'Odisha': '95.90/L'}</p> <p>location- <u>xyz restaurant</u> datatype-List Food=['Dhokla', 'Khaman', 'Pizza']</p>
7.	Physical Education	Answer all the questions given in the ' pdf ' of question bank in PE Notebook.

NOTE:

- ❖ Students need to complete the subject specific assignments as per the instructed norms.
- ❖ Detailed guidelines are explained in the classes.
- ❖ **Worksheets and Sample Question Papers will be shared on Class WhatsApp Broadcast group and School App. You are advised to take the printout of the same and use the hard copies for doing the homework.**
- ❖ **Submission date for all assignments is 18th November, 2024.**
- ❖ These assignments are a part of the Internal Assessments and will be marked for the same. It is mandatory for the students to complete the assignments and submit it to the concerned **teachers.**
- ❖ Students are requested to get their doubts regarding's the assignments during regular classes before 26.10.2024.

May the divine light of Diwali spreads into your life and bring peace, prosperity, happiness, good health and grand success.



DIWALI WORKSHEET: 2024-25

STD – XI SCIENCE

PHYSICAL EDUCATION (048)

1. Define Physical Education?
2. Give the aim of physical education?
3. What do you understand by physical fitness?
4. Write any two methods for improving wellness?
5. Write two career options in Physical Education?
6. What is a positive life style?
7. Draw a diagram of factors which can affect physical fitness?
8. What are the components of positive lifestyle?
9. Explain the role of parents in the career aspects of their ward?
10. Highlight four avenues of career preparation in physical education?
11. What is Adapted physical education?
12. Write any two misconception of physical education?
13. What do you understand by International Olympic Committee?
14. Write short notes on:
 - a) Ancient Olympic games
 - b) Olympic Flame
 - c) Olympic Flag.
15. Describe the concept and principles of integrated physical education?
16. Explain the soft tissue injuries in detail.
17. Discuss the rehabilitation process through exercises in detail.
18. Describe the skin folds measurement
19. What do you mean by body mass index? Explain the procedure of calculation of BMI.
20. What do you mean by anatomy and physiology? Elucidate the importance on anatomy and physiology in the field of physical education and sports.
21. What do you mean by muscular system? Explain the structural classification of muscles in detail.
22. What do you mean by circulatory system? Explain the structure, location and function of heart.
23. Describe Integrated Physical Education. Write the Principle of Integrated Physical Education.
24. Name Some Important Sports awards. Explain any three of them?
25. Elucidate the origin of Ancient Olympic Games with its rules & regulations.
26. What is All India Council of Sports? What are its functions and achievements?
27. How can life threatening diseases be prevented through lifestyle change? Discuss in details.
28. Write an article on health indicators discussing its types.
29. Write any two importance of Physical fitness and wellness.
30. Make flow Chart of Health Related Fitness Test and Skill Related Test.