



# DAV PUBLIC SCHOOL, SASARAM

## HA & PW for Diwali & Chhath Vacation 2024 - 25

### Class : XII (PCB)

SUBJECT	PROJECT WORK
<b>Chemistry</b>	1. Explain the following name reactions with the help of suitable example - <ol style="list-style-type: none"> <li>a) Reimer - Tiemann reaction</li> <li>b) Williamson's synthesis</li> <li>c) Kolbe's reaction</li> <li>d) Fridel crafts alkylation of anisole</li> <li>e) Etard reaction</li> </ol> 2. Describe a chemical test to distinguish between <ol style="list-style-type: none"> <li>a) ethanal and propanal</li> <li>b) benzaldehyde and acetophenone</li> <li>c) Propan-2-one and pentan-3-one</li> </ol>
<b>Physics</b>	<b>Make a in Investigatory Project on any one following topics.</b> <ol style="list-style-type: none"> <li>1. To study various factors on which the internal resistance/EMF of a cell depends.</li> <li>2. To study the variations in current flowing in a circuit containing an LDR because of a variation in               <ol style="list-style-type: none"> <li>a) the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance).</li> <li>b) the distance of a incandescent lamp (of fixed power) used to 'illuminate' the LDR</li> </ol> </li> <li>3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equiconvex lens (made from a glass of known refractive index) and an adjustable object needle.</li> <li>4. To investigate the relation between the ratio of (i) output and input voltage and (ii) number of turns in the secondary coil and primary coil of a self-designed transformer.</li> <li>5. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.</li> <li>6. To estimate the charge induced on each one of the two identical Styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law.</li> <li>7. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/ (bulb) in a circuit fed up by an A.C. source of adjustable frequency.</li> <li>8. To study the earth's magnetic field using a compass needle -bar magnet by plotting magnetic field lines and tangent galvanometer.</li> </ol>
<b>Biology</b>	Draw and explain Lac operon on chart Paper.
<b>English</b>	<ol style="list-style-type: none"> <li>1. Compare and contrast William's fear of water with another common fear. How can the methods he used to overcome his fear be applied to other situations? (Deep Water)</li> <li>2. Which, according to you, is higher – humanity or patriotism? Write a paragraph on the topic: Humanity vs Patriotism. ( The Enemy)</li> </ol>
<b>IP</b>	<ol style="list-style-type: none"> <li>1. What is the difference between a Series and Data Frame data structure of Pandas?</li> <li>2. Consider the following command to generate a data series "b".  <code>b=pd.Series([37,20,45.5,np.NaN,40],index=['a','b','c','d','e'])</code> Write the command to sort the values in ascending order for the above mentioned series. Also write the output generated after sorting.</li> <li>3. Consider the following series <code>d=pd.Series([40,30,45,69,50,39,60,35,70,25], index=['a1','a2','a3','a4','a5','a6','a7','a8','a9','a10'])</code> Write the output of the following:            a) <code>print(d[-5:-1])</code> b) <code>d['a5']+=5 print(d)</code> </li> </ol>

