BHAVDIYA PUBLIC SCHOOL AYODHYA SUMMER VACATION HOMEWORK (2025-26) CLASS-XII SCIENCE



English Core (301)

1.Create a collage or PowerPoint presentation on the poem My Mother at sixty six by Kamla Incorporating relevant images and your interpretations.

2.Read at least one of the following books & write the book review in at least 500 words The Guernsey Literary and Potato Peel Pie Society by Annie Barrows Anxious People by Fredrik Backman The Stationery Shop of Tehran by MarjanKamali

3.Develop an informative poster that raises awareness about child labor, using statistics, quotes from the text, and impactful imagery.(Lost Spring)

<u>MATHS :-</u>

Do research and make a project on any one of the given topics

- 1. Development of Number Systems with their needs.
- 2. Chronology of Indian Mathematicians with their contributions.
- 3. Chronological development of solution of a quadratic equation.
- 4. A working model on any topic related to Mathematics.

<u>Note</u>

- Use A4 sheet or graph sheet or chart paper only.
- Don't share your project with other students.
- Project should be art integrated.
- Don't use plastic cover or files, your project will be ecofriendly.

Last page of your project should contain 10 simple Questions/Answers based on your project

CHEMISTRY:-

Q.1 How will you convert ethanol to ethene? 1

Q.2 Why phenol does not give a protonation reaction readily? 1

Q.3 Write the equation involved in Reimer-Tiemann reaction. 1

Q.4 Arrange the following:

(i) C6H5-NH2, C6H5-CH2-NH2, C6H5-NH-CH3

(ii) C2H5-OH, CH3CH2-NH2, CH3-NH-CH3 2

Q.5 How can the following conversions be carried out

- (i) Aniline to bromobenzene
- (ii) Chlorobenzene to 2-chloroacetophenone
- (iii) Chloroethane to butane
- Q6. How will you bring about the following conversions?
- (a) Aniline to Benzonitrile
- (b) Aniline to iodobenzene
- (c) Phenol to Picric acid 3
- Q7. How will you distinguish between the following pairs by chemical reactions?
- (i) CH3OH and C2H5OH (ii) Phenol and cyclohexanol
- (iii) Aniline and N-Methyl aniline 3
- Q8. Write the name of the reaction, structure and IUPAC name of the product formed when:
- (a) phenol reacts with CHCl3 in presence of NaOH followed by hydrolysis.
- (b) Phenol reacts with Zinc dust.
- (c) Phenol reacts with concentrated Nitric acid. 3

Q9. An organic compound A with the molecular formula (+)C4H9Br undergoes hydrolysis toform (+)C4H9OH. Give the structure of A and write the mechanism of the reaction. 3

Q10. (a) Write the structure of the main products when aniline reacts with the followingreagents. (i) Br2 water (ii) (CH3CO)2O/pyridine

(b) Arrange the following in the increasing order of basicity in the vapour phase:

C2H5NH2, (C2H5)3N, (CH3CH2)2NH

(c) Complete the following:

(i) CH3CH2CH2NH2 + CHCl3 + KOH(alc.) ---- \rightarrow

(ii) CH3CONH2 + Br2 + KOH \rightarrow

BIOLOGY:-

- 1. Complete your investigatory projects as allotted in the class.
- 2. Solve the worksheet given as printouts in the class and submit the same after vacations.
- 3. All the exercise questions from sexual reproduction in flowering plants and human reproduction must be solved the copy.

PHYSICS:-

Q.1 Does the Force Between Two Point Charges Change if the Dielectric Constant of the Medium in which they are Kept is Increased?

Q.2 A Charged Rod P Attracts a Rod R Whereas P Repels another Charged Rod Q. What Type ofForce is Developed Between Q and R ?

Q.3A Free Proton and a Free Electron are Placed in a Uniform Field. Which of the Two ExperiencesGreater Force and Greater Acceleration?

Q.4 No Two Electric Lines of Force Can Intersect Each Other. Why?

Q.5 An Electric Dipole When Held at 30° with Respect to a Uniform Electric Field of

104N/CExperiences a Torque of 9×10-26Nm. Calculate Dipole Moment of the Dipole?

Q.6 Explain the Meaning of the Statement; Electric Charge of a Body is Quantized'.

Q.7 Why Can One Ignore the Quantization of Electric Charge When Dealing With Macroscopic I.e.,Large Scale Charge?

Q.8 An Electric Field Line is a Continuous Curve. That is, a Field Line Cannot Have Sudden Breaks.Why Not?

Q.9 Explain Why Two Field Lines Never Cross Each Other at Any Point?

Q.10 What is the Net Flux of the Uniform Electric Field of Exercise 1.15 through a Cube of Side 20cm Oriented So That Its Faces Are Parallel to the Coordinate Planes?

Q.11A Particle of Mass m and Charge q is Released from Rest in a Uniform Electric Field of IntensityE. Calculate the Kinetic Energy Attained by this Particle after Moving a Distance BetweenThePlates.

Q.12What is the Force Between Two Small Charged Spheres Having Charges of $2\times10-7$ C and $3\times10-7$ C placed 30cm Apart in Air?

Q.13A Point Charge of 2.0µC is Kept at the Center of a Cubic Gaussian Surface of EdgeLength 9cm.What is the Net Electric Flux through the Surface?

Q.14 An Infinite Line Charge Produces a Field of Magnitude 9×104N/C at a Distance of2cm. Calculate the Linear Charge Density.

Q.15 What Is an Equi-Potential Surface? Show That the Electric Field Is Always Directed Perpendicular to an Equi-Potential Surface.

Q.16Why does the electric field inside a dielectric decrease when it is placed in anexternal electric field?

Q.17. What is the work done in moving a $2\mu C$ point change from corner A to corner B of asquare ABCD when a $10\mu C$ charge exists at the centre of the square?

Q.18 The distance of the field point on the equatorial plane of a small electric dipole ishalved. By what factors will the electric field due to the dipole changes?

Q.19The Plates of a charged capacitor are connected by a voltmeter. If the plates of the capacitor aremoved further apart, what will be the effect on the reading of the voltmeter?

Q.20 State Gauss's Theorem in electrostatics?

Q.21. Three capacitors each of capacitance 9pF are connected in series

(a) What is the total capacitance of the combination?

(b) Determine the charge on each capacitor if the combination is connected to a100Vsupply.

Q.22 A 12pFcapacitor is connected to a 50Vbattery. How much electrostatic energy isstored in thecapacitor?

Q.24 Show mathematically that the potential at a point on the equatorial line of an electricdipole isZero?

Q.25What is the direction of the electric field at every point on this surface?

PHYSICAL EDUCATION :-

Make project on the following topics:-

- Yoga as preventive measure for lifestyle disease
- Fitness test- SA I Khelo India [Fitness test in School.]

COMPUTER:-

Make any 7 program for your report file.

Program 1:Make a simple Calculator by using Function.

Program 2: Write a Program to check if the entered number is Armstrong or not.

Program 3: Write a function to find factorial of the entered number.

Program 4: Write a function to enter the number of terms and to print the Fibonacci Series.

Program 5:Write a function to enter the string and to check if it's palindrome or not using loop.

Program 6: Write a program that generates a series using a function while takes first and last values of the series and then generates four terms that are equidistant e.g., if two number passed are 1 and 7 then function returns 1 3 5 7

Program 7: write a function that take two no and returns the number that has minimum ones digit. **Program 8:** write a function namely nth root () that receives two parameters x and n and returns nth root of x I.e x^1/n The default value of n is 2.

<u>Note</u>

- Use A4 sheet paper only.
- Don't use plastic cover or files, your project will be eco friendly.

हिन्दी

* विभिन्न जनसंचार माध्यमों - प्रिंट, रेडियो, टेलीविजन, इंटरनेट से जुड़ी पाँच - पाँच खूबियां और खामियों को लिखते हुए एक तालिका तैयार करें।

<u>Psychology</u>

Psychology Chart/Poster (choose any one topic): **Option 1: Types of Intelligence (Howard Gardner's Theory**) Title: "We All Are Smart in Different Ways!" Design Ideas:

Draw a big colorful brain in the center.

Divide it into 8 sections, each labeled with a type of intelligence (e.g., Musical, Bodily-Kinesthetic, Logical-Mathematical, Linguistic, Interpersonal, Intrapersonal, Naturalistic, Spatial).

In each section, paste/draw:

A small icon or picture (e.g., guitar for Musical, book for Linguistic).

1 line description (e.g., "Loves music and rhythms" for Musical Intelligence).

Add a small quote at the bottom:

"Everyone is a genius in their own way!"

Option 2: Difference between IQ and EQ

Title: "IQ vs EQ – Head vs Heart?" Design Ideas: Divide the chart into two sides. Left Side: IQ (Intelligence Quotient) Picture of a brain. Keywords: "Logic", "Math", "Memory", "Reasoning". Paste a picture of a scientist (like Einstein). Right Side: EQ (Emotional Quotient) Picture of a heart or face with emotions. Keywords: "Empathy", "Self-awareness", "Relationship skills", "Emotional control". Paste a picture of a good leader (like Dr. A.P.J. Abdul Kalam). Add a fun line at the bottom: "Smart mind + Kind heart = Real success!"

Option 3: Famous Creative Personalities of India

Title: "Creative Minds of India!" Design Ideas: Paste pictures (or draw) of 5–6 Indian legends: Rabindranath Tagore (Poetry) C.V. Raman (Science) Satyajit Ray (Film) M.F. Husain (Painting) LataMangeshkar (Music) Below each picture: Write their creative field and 1 achievement. Background: Draw or paste symbols like a pen, brush, tabla, film roll, etc. Add this quote on top: "Creativity is intelligence having fun!" – Albert Einstein

Note: Do all written homework of all the subjects except charts/posters/modals in fair Notebook only.