SHRI GURU NANAK H/S PUBLIC SCHOOL
Summer Holiday Homework (2024-25)

Class-XII Science

- Holidays homework of all the subjects will be done as directed in each subject.
- Last date of the submission of holiday homework is 4 July 2024.
- School will reopen on 1 July 2024.

PHYSICS

S.No.	Projects	Student's Roll Number			
1	Full Wave Rectifier	1	13	25	37
2	Half Wave Rectifier	2	14	26	38
3	Electromagnetic Induction	3	15	27	39
4	Touch Sencer	4	16	28	40
5	A.C. Motor	5	17	29	41
6	D.C. Motor	6	18	30	42
7	Solenoid Engine	7	19	31	43
8	Light Dependent Resistor(LDR)	8	20	32	
9	Wheatstone Bridge Working Model	9	21	33	
10	Free Energy with small D.C. Motor	10	22	34	
11	Wireless power Transfer system	11	23	35	
12	EDDY Current Braking System	12	24	36	

CHEMISTRY

1. Make a investigatory project on any one of the following topics

   (i) Determination of content of cold drink.

   (ii) Study and Analysis of Honey

   (iii) The amount of casein in different sample of milk

   (iv) Analysis of hand sanitizer

   (v) Analysis of Tooth paste

   (vi) Analysis of composition of chocolate.

   (vii) Alloy

   (vi) Saponification

   (viii) Foaming capacity of different soaps.

   (ix) Study of Antacids

   (x) Setting of curd from milk on different temperature

   (xi) Formation of Biodiesel

   (xii) Formation of Mohr's salt and Potash Alum

   (Xiii) Study of adulterants in food stuff.

2. Write the following experiments in lab manual

   (i) To determine the molarity of $KMnO_4$, solution by titrating it against a standard solution of oxalic acid.

   (ii) To determine the molarity of $KMnO_4$ solution by titrating it against a standard solution of Mohr's salt.

MATHS

1-To verify that the relation R in the set L of all lines in a plane. Define by R=((L,m): L|| m) is an equivalence relation.

2-To demonstrate a function which is not one to one but is onto.

3-To draw a graph of $\sin^1 x$, using the graph of sin x demonstrate the concept.

4-To verify that for a function f to be continuous at given point xo $\triangle y = f(Xo+\triangle x)-f(Xo)$

(5) Prepare the chapter (1) Differentiation (Chaim Rule)

PROJECT

1-Eliminations of population of a particular region or country.

BIOLOGY

1. Lab Manual - Do Experiments and spotting as discussed in class (draw diagrams with pencil only).

2. Prepare a project file of investigatory project on any one of the following topics discussed in class.

       Male reproductive System & Spermatogenesis

       Pedigree analysis & Chromosomal Disorder

       Reproductive Health

       Laws of Inheritance

       Mensturation Cycle

       DNA-Replication Structure

       Female reproductive System & Oogenesis.

       Biodiversity

       STD'S & AIDS

       Diseases.

       Sexual Reproduction in Flowering Plant

       Human Evolution

       Sewage Treatment Plant & Biogas Production

       Population Interaction

       Drugs & Alcohol abuse

       Cancer

3. Revise and learn Ch-1,2,3and4. Do Board Question paper of last 2 Years in notebook of these chapters.

PHYSICAL EDUCATION

1 Do the questions of the following chapters from the board question papers of last 2 years.

       Chapter 1.Management of Sporting Events.

       Chapter 2.Children and Women in Sports.

       Chapter 3.Yoga as Preventive Measure for Lifestyle Disease.

2) Prepare lab manual (5 games)

3) Prepare 2 Spiral binded Files (Specific game & Yoga)

4) Practice Physical Fitness activities For 30 minutes daily:

*Sit ups 100   *Push ups 60   *Duck race & Frog jump 5 minutes   *Standing broad jump 4 times.

* Practice skills of your game.

ENGLISH

ASL Topics:

      1. E-Governance   2. Water security   3. Disaster management

      4. Cyber security   5. Uniform civil code   6. Science and Technology

Project:

1. Make a project file keeping in view the chapter "The last lesson" and elucidating nationalism culture, role of mother tongue and native language in context of our own country.

INFORMATION PRACTICES (065)

Note: Do these questions in Computer Notebook with heading" SUMMER HOLIDAY HOMEWORK 2024-25

Section-A

1. To create an empty Series object, you can use:
   - (a) Pd Series (empty).
   - (b) Pd.Series (np.NaN)
   - (c) pd.Series()
   - (d) all of these

2. To specify datatype int 16 for a Series object, you can write
   - (a) Pd.Series (data array, dtype = int16)
   - (b) Pd.Series(data array, dtype = numpy.int16)
   - (c) Pd Series(data = array.dtype pandas.int16)
   - (d) All of the above

3. To get the number of dimensions of a Series object,
   - (a) Index
   - (b) Itemsize
   - (b) size attribute is displayed.
   - (d) ndim

4. To get the size of the datatype of the items in Series object, you can display attribute.
   - (a) Index
   - (b) Itemsize
   - (b) size
   - (d) ndim

5. To get the number of elements in a Series object, attribute may be used.
   - (a) Index
   - (b) Itemsize
   - (b) size
   - (d) ndim

6. To get the number of bytes of the Series data, attribute is displayed.
   - (a) Hasnans
   - (b) Ndim
   - (b) nbytes
   - (d) dtype

7. To check if the Series object contains NaN values, attribute is displayd.
   - (a) Hasnans
   - (b) nbytes
   - (c). Ndim
   - (d) dtyp

8. To display third element of a Series object S, you will write
   - (a) 5:3]
   - (b) S[3]
   - (c) 5[2]
   - (d) S[:2]

9. To display first three elements of a Series object S, you may write
   - (a) 5[:3]
   - (b) S(3)
   - (c) 5[3]
   - (d) all of these

10. To display last five rows of a Series object S, you may write
   - (a) Head()
   - (b) Tail()
   - (c) head(5)
   - (d) tail(5)

Section-B

Q1.Create the following Data Frame

	Name	age	Department	Salary
0	Arpit	62	Surgery	30000
1	Zarina	22	ENT	25000
2	Kareen	32	Surgery	30000
3	Ankita	22	Cardiology	50000
4	Kush	32	Cardiology	60000

Q2.Consider the Data Frame

Product	Company	Qty	Price
CPU	Compaq	40	7000
Mouse	Compaq	20	500
Keyboard	HP	10	500
Printer	Epson	2	4800
HD	Toshiba	10	2000
Plotter	Sony	5	8000

   i. Display all information for product CPU and mouse

   ii. Display product and company information for all product.   iii. Find number of rows.

   iv. Count values with Non-NA values.   v. Without Non-NA values

   vi. Transpose the Data Frame (p).   vii. Display company. qty. price for printer. HD and Monitor.

Q3. Perform the following advance operation on above Data Frame.

   i. Add new column Total Price and calculate Qty Price for each product.

   ii. Add new product Scanner with information (Epson.2.8000).

   iii. Find the Grand total of all Qty, and total price.

   iv. Remove Plotter information.

   v. Remove Company column.