D.A.V PUBLIC SCHOOL ,BISTUPUR,JAMSHEDPUR
HOLIDAY HOMEWORK
CLASS 12
SESSION 2024-25

HOLIDAY HOME WORK FOR SUMMER BREAK

SUBJECT: ENGLISH

1. Write an article on any TWO from the following:

(a) Value Education- A Part of Curriculum in Schools

(b) **By 2050, India will be amongst the countries which will face acute water shortage. You are highly alarmed and terrified of the future world without water. Write an article on "Save water- are we doing enough?" for the local daily in about 150 words.**

(c) The Role of Youth In National Development

(d) You think differently from the way your parents think about food, clothing and lifestyle. Write an article on --- Generation Gap – A Myth or Reality

2.As Principal of Sardar Patel Vidyalaya, Lucknow, draft a notice in not more than 50 words informing students of the change in school timings with effect from 1st of July 20xx. State valid reasons for the change.

3. You are Sports Secretary of Lalwani Public School, Udaipur. Draft a notice in not more than 50 words for your school notice board asking the students to give their names for participation in various events to be held on the Annual Sports Day of your school. Invent the details of the events. Sign as Lalit/Lalita.

4. Learn and Revise all the syllabus of Unit Test 2.

SUBJECT:PHYSICS

1."For any charge configuration, equipotential surface through a point is normal to the electric field." Justify.
2. An electrostatic field line cannot be discontinuous. Why?
3.Why is the potential inside a hollow spherical charged conductor constant and has the same value as on its surface?
4. Two point charges q and – 2q are kept'd' distance apart. Find the location of the point relative to charge 'q' at which potential due to this system of charges is zero.

5. An electric dipole is placed in a uniform electric field E with its dipole moment p parallel to the field. Find (i) the work done in turning the dipole till its dipole moment points in the direction opposite to E. (ii) the orientation of the dipole for which the torque acting on it becomes maximum.

6. A parallel plate capacitor is charged to a potential difference V by d.c. source and then disconnected. The distance between the plates is then halved. Explain with reason for the change in electric field, capacitance and energy of the capacitor.

7. What happen to capacitance of capacitor when a copper plate of thickness one third is of the separation between the plates is introduced in the capacitor.

8. N identical spherical drops charged to the same potential 'V' is combined to form a big drop. Find the potential of the new big drop formed.

9. In the electric field of a point charge 'q', the four points A,B,C and D are equidistant from q,however AB>AC>AD. Calculate the work done in taking a unit charge along AB, AC and AD

10. Three identical charges each +q are placed at the corners of an equilateral triangle of side d cm. Calculate the force on a +ve charge +2q at the centroid of the triangle.

11. A 4uF capacitor is charged by a 200 V supply. The supply is then disconnected and the charged capacitor is connected to another uncharged 2 uF capacitor. How much electrostatic energy of the first capacitor is lost in the process of attaining the steady situation?

12. You are given an isolated parallel plate capacitor of capacitance C charged to a potential difference V. What will happen to the following when separation distance between the plates is doubled with the help of insulating handle attached to the plates: (i) charge on the plates (ii) potential difference across the plates (iii) energy stored by the capacitor.

13. The plates of a parallel plate system are charged up to 100V. A 4 mm thickness dielectric slab is inserted between the plates. Then to maintain the same potential difference, the distance between the systems plates are increased by 2mm. find the dielectric constant.

14.Consider a uniform electric field **E** = 3 × 103 î N/C. (a) What is theflux of this field through a square of 10 cm on a side whose plane isparallel to the *yz*plane? (b) What is the flux through the samesquare if the normal to its plane makes a 60° angle with the *x*-axis?

15.What is the net flux of the uniform electric field of Exercise 14 through a cube of side 20 cm oriented so that its faces are parallelto the coordinate planes?

16.Careful measurement of the electric field at the surface of a blackbox indicates that the net outward flux through the surface of thebox is 8.0 × 103 Nm2/C. (a)What is the net charge inside the box?

(b) If the net outward flux through the surface of the box were zero,could you conclude that there were no charges inside the box? Whyor Why not?

SUBJECT: MATHEMATICS
ACTIVITIES :TO BE WRITTEN IN MATHS LAB MANUAL
1.To verify that the relation R in the Set L of all lines in a plane ,defined by $R = \{(l, m) : l \perp m\}$ is symmetric but neither reflexive nor transitive.
2. To verify that the relation R in the Set L of all lines in a plane ,defined by $R = \{(l, m) : l \parallel m\}$ is an equivalence relation.

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

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

5. To draw the graph of $sin^{-1}x$, using the graph of $sinx$ and demonstrate the concept of mirror reflection 9about the line $y = x$).

SUBJECT: CHEMISTRY

1.(a) If Solubility product of CuS is 6 x 10 -16 , Calculate the maximum molarity of CuS in aqueous solution.

(b) Why excess intake of coomon salt is not advised to person suffering from High Blood pressure.

(c) Suggest type of intermolecular attractions present in I2and CCl4 , Methanol and acetone
.

2. (a) What is the value of vant Hoff factor i for K4[Fe(CN)6]

(b) The preservation of fruits by adding concentrated sugar Solution protect against bacterial action.

(c) when 2 gram of benzoic acid is dissolved in25 g of benzene ,the experimentally determined molar mass is always greater than the true value .

(d) H2S is a toxic gas with rotten egg smell is used for qualitative analysis. If solubility of H2S in water at STP is 0.195m ,calculate Henrys constant.

3.(a) Determine the Osmotic pressure of a solution prepared by dissolving 25 mg of K2SO4 in 2 L water at 25oC ,assuming to be completely dissociated.(at mass of K=39 and S=32)

(b) Give one example of Maximum and Minimum boiling Azeotrope.

4. (a) What will be the Osmotic pressure of 58.5 g/l of NaCl . (at mass of Na=23 and Cl =35.5)

(b) Define Reverse Osmosis with one use.

(c) Why 0.9 % NaCl is used as intravenous liquid and is administered to human body.

5.(a) write Units of Ebullioscopic constant and write its definition.

(b) Why aquatic species are more comfortable in cold water than in warm water.

(c) Give formula of Raoults law with graphs of Positive and negative deviation.

6. Three electrolytc cells A,B and C containing ZnSO4 ,CuSO4 and AgNO3 are connected in series .A steady current of 1.5 amperes is passed till 1.45 g of Ag was deposited .How long did the current flow ,what massed of zinc and copper got deposited.

7. Draw a neat diagram of Dry cell.Lead storage battery and fuel cell .Also write theirAnodic and cathodic reactions.

8. What are concentration cells .Draw the diagram and write chemical reactions .

9. write the Nernst equation for the following and calculate Ecell. Zn (s) / Zn(0.004M) // Cu (0.200M)/Cu (s) .

10. Write electrolysis for the aq AgNO3 containing Platinum electrodes.

SUBJECT:COMPUTER SCIENCE

Unit/Topic: Revision Tour of class XI

I. Answer the following questions with appropriate example:

i) Differentiate the terms Mutable and Immutable

ii) List and Dictionary

iii) and , or operator

iv) Suntax and Runtime errors

v) Phishing and Pharming

II. Programming in Python:

i) WAP to find the 2nd largest word in a sentence.

ii) WAP to display all the palindrome numbers present in a list of n integers

iii) WAP to create a dictionary containing n no.of names of students as keys and percentage as values. Find the following out of it.

   A) Find the name of the topper/toppers
   B) Find the average percentage
   C) Display the name of students having same percentage.

II) Answer the following questions:

Topic: User Defined Function

i) Answer following questions with appropriate example:

a) Positional and Keyword argument

b) nonlocal and global keyword

c) What is the use of return keyword.

Programming:

   i)   WAP to create a function accepting a list of n no. of words as argument and create a dictionary out of it. The keys of dictionary will be 'vowel' and 'consonant'. The values will the tuple of words start with vowel and consonant respectively.
   ii)   WAP to create a function to check elements of tuples (Elements are float values) whether they are arranged or not. If arranged return 'A' for ascending, 'D' for descending and 'U' for unordered.

iii)   Write a menu driven program to check an integer whether it is a) Armstrong b) Special c) Prime d) Niven e) Spy numbers using separate user defined function.

d) Find the output of the following program code:

i)

```
x=5
def fun(a,b=10):
        global x
        for I in range(a,b):
                x+=i
        return x
print(fun(4))
print(fun(10,15))
```

ii)

```
def f1(a,b):
        C=10
        A+=b+c
        b-=c
        print(a,b,c)
        def f2(n):
                nonlocal c
                while n:
                        c+=n%10
                        n//=10
                else:
                        return c
        c=f2(543)
        print©
f1(15,25)
```

iii)

```python
s='ENCYCLOPEDIA'
def prn(n=2):
        st=''
        for I in range(len(s)-1,n,-1):
                st=st+s[i].lower()
        return st
print(prn())
print(prn(3))
```

iv)

```python
s='CbsE@AiisCE23-24'
def fun(lst):
        x=0
        while x<len(s):
                if s[x].isalpha():
                        if s[x].islower():
                                        lst.append(s[x].upper())
                        elif s[x].isupper():
                                lst.append(s[x+1])
                elif s[x].isdigit():
                        lst.append(chr(ord(s[x])+1))
                else:
                        lst.append('#')
                x+=1
        else:
                return lst
#Main Block
lst=fun(list(s))
```

```
        print(lst)

v)

def outer():

        x='welcome'

        def inner():

                x='goodbye'

        inner()

        print('x=',x)

outer()

vi)

def outer():

        x='welcome'

        def inner():

                nonlocal x

                x='goodbye'

        inner()

        print('x=',x)

outer()

vii)

def outer():

        x='welcome'

        def inner():

                nonlocal x

                x='goodbye'

        inner()

        print('x=',x)

outer()

viii)
```

```python
a=1
def block3():
        a=2;b=3
        print('block3:',a,b)
        def block2():
                global a
                a=a+100
                print('block2:',a,b)
                def block1():
                        print('block1:',a,b)
                block1()
        block2()
block3()
```

ix)

```python
a=1
def block3():
        a=2;b=3
        print('block3:',a,b)
        def block2():
                #nonlocal a
                global a
                a=a+100
                print('block2:',a,b)
                def block1():
                        print('block1:',a,b)
                block1()
        block2()
block3()
```

SUBJECT:ECONOMICS

1. Briefly discuss the meaning of domestic territory.

2. Which of the following are covered under the domestic territory of India?

(a) An Indian Company in London.

(b)Microsoft Office in India.

(c) Company in India owned by a Japanese.

 (d) Office of Reliance Industries in New York.

(e) Branch of Foreign Bank in India.

(f) Indian Embassy in Japan

(g) Branch of State Bank of India in China.

(h) Russian Embassy in India.

(i)Tata rented its building to Google in America

3. Identify the following as Normal Residents of India:

(a)Indian officials working in the Indian Embassy in USA.

(b)A Japanese tourist who stays in India for 2 months.

 (c)Indians going to Pakistan for watching the cricket match.

(d)Indians working in the UNO office, located in America for less than 1 year.

 (e)Indian employees working in WHO, located in India.

(f) Foreign tourists visiting India for a month to see the Taj Mahal

(g) Indian Muslims going for the Haj pilgrimage.

SUBJECT: BIOLOGY

 1. Investigatory project based on class 12 syllabus as prescribed by CBSE.
 2. Solve the NCERT Questions from the topics completed.

SUBJECT: BIOTECHNOLOGY

1. Make a investigatory project on topic given in Biotechnology syllabus.

2. Briefly explain following topics given below.

   (a) Introduction of protein.

   (b) Structure of proteins

   (c) Bond involved in different structures of proteins

3. Do excercise questions of the chapter completed.

SUBJECT: PHYSICAL EDUCATION

1. What do you mean by knock out tournaments? Draw the fixtures of 21 teams on knock out basis.
2. What is league tournament? Draw a fixture of six teams using round robin method.
3. What do you mean by specific sports programmes? Explain any three.
4. Define and classify 'fixtures'. Draw a league fixture of 16 teams.
5. Write three differences between intramurals and extramurals.
6. What do you mean by balanced diet? Explain the components of diet.
7. What do you mean by healthy weight? Discuss about the methods to control healthy body weight for life time.
8. 'Vitamins are essential for our metabolic process'. What happens if there is deficiency of vitamins.
9. Discuss briefly about various food myths.
10. Draw the chart of macro and micro minerals – sources, function and deficiency.

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