Winter Vaccation Homework.

Q. Practice all the question of NCERT of ch-
Or.
- ✓ Body fluid & circulation
- ✓ Breathing and exchange of gases
- ✓ Photosynthesis in Higher plants.

Q. Diagram practice -
- ✓ Heart
- ✓ Respiratory system
- ✓ O_2 dissociation curve (both shift)
- ✓ Table of partial pressure.
- ✓ Electrocardiograph
- ✓ C_3 cycle
- ✓ C_4 cycle
- ✓ Light reaction — both cyclic & Non-cyclic
- ✓ chemiosmotic theory.
- ✓ Blood group table
- ✓ Chloroplast

Q. Differentiate between:-
- ✓ C_3 & C_4 plant   ✓ Breathing & Respiration
- ✓ Light & Dark reaction   ✓
- ✓ Inspiration & Expiration
- ✓ Mesophyll & bundlesheath cell.

Q. a) cardiac cycle
   b) Blood clotting Mechanism
   c) Transport of O_2 & CO_2.

1

Thermodynamics

Q. Definition of System, Surrounding, Extensive, intensive properties, Entropy, Enthalpy.

Q. Ist law, 2nd law, 3rd law of thermodynamics with numericals.

Q. Define Hess's law (with Numericals on Enthalpy)

Q. Sign of ΔS in any Reaction.

Q. Derive Relation between ΔH & ΔU.

Q. Derive Relation between C_p & C_v

Q. What is Gibbs Halmholtz Equation.

Q. For the Reaction
$$2\,Cl\,(g) \longrightarrow Cl_2\,(g)$$
what are the Sign of ΔH & ΔS.

Q. Numericals on Enthalpy.

Q. Define spontaneous & Non-spontaneous process. & what is the condition of spontaneous process.

Some Basic ~~Conce~~ Principles & Techniques

Q. IUPAC Naming of functional group compd. (at least 50)

Q. Chromatography with Example

Q. Distillation with Example.

Q. What is Resonance & its types with Examples.

Q. What is Inductive effect & its types.

Q. What is Hyperconjugation & draw its Examples.

Q. What is Electromeric effect & its types.

Q. Stability of carbocation, carbanion, free Radical. with Examples. & its questions.

Q. Acidic & Basic strength Question Related to carbocation, carbanion & free Radicals.

Q. What are Electrophiles & Nucleophiles with Examples.

Q. Define Isomers & its types.

Q. Hybridisation of C in some compounds.

Q. Define Kjeldahl Method & Dumas Method

Q. Benzyl carbocation is more stable than methyl carbocation. why?

Q. Define Homolytic & Heterolytic fission.

1. What will be the output of the following statements?

i.
```
list1 = [12,32,65,26,80,10]
list1.sort()
print(list1)
```

ii.
```
list1 = [12,32,65,26,80,10]
sorted(list1)
print(list1)
```

iii.
```
list1 = [1,2,3,4,5,6,7,8,9,10]
list1[::-2]
list1[:3] + list1[3:]
```

iv.
```
list1 = [1,2,3,4,5]
list1[len(list1)-1]
```

2. Consider the following list myList. What will be the elements of myList after the following two operations:
```
myList = [10,20,30,40]
  i. myList.append([50,60])
 ii. myList.extend([80,90])
```

3. What will be the output of the following code segment:
```
myList = [1,2,3,4,5,6,7,8,9,10]
for i in range(0,len(myList)):
     if i%2 == 0:
          print(myList[i])
```

4. What will be the output of the following code segment:

a.
```
myList = [1,2,3,4,5,6,7,8,9,10]
del myList[3:]
print(myList)
```

b.
```
myList = [1,2,3,4,5,6,7,8,9,10]
del myList[:5]
print(myList)
```

c.
```
myList = [1,2,3,4,5,6,7,8,9,10]
del myList[::2]
print(myList)
```

5. Differentiate between append() and extend() functions of list.

6. Consider a list:
```
list1 = [6,7,8,9]
```
What is the difference between the following operations on list1:
```
a. list1 * 2
b. list1 *= 2
c. list1 = list1 * 2
```

7. The record of a student (Name, Roll No., Marks in five subjects and percentage of marks) is stored in the following list:

```
stRecord = ['Raman','A-36',[56,98,99,72,69],
            78.8]
```

Write Python statements to retrieve the following information from the list stRecord.

    a) Percentage of the student
    b) Marks in the fifth subject
    c) Maximum marks of the student
    d) Roll no. of the student
    e) Change the name of the student from 'Raman' to 'Raghav'

1. Consider the following tuples, tuple1 and tuple2:

```
tuple1 = (23,1,45,67,45,9,55,45)
tuple2 = (100,200)
```

Find the output of the following statements:

    i. print(tuple1.index(45))
    ii. print(tuple1.count(45))
    iii. print(tuple1 + tuple2)
    iv. print(len(tuple2))
    v. print(max(tuple1))
    vi print(min(tuple1))

    vii. print(sum(tuple2))
    viii. print(sorted(tuple1))
        print(tuple1)

2. Consider the following dictionary stateCapital:

```
stateCapital = {"AndhraPradesh":"Hyderabad",
"Bihar":"Patna","Maharashtra":"Mumbai",
"Rajasthan":"Jaipur"}
```

Find the output of the following statements:

    i. print(stateCapital.get("Bihar"))
    ii. print(stateCapital.keys())
    iii. print(stateCapital.values())
    iv. print(stateCapital.items())
    v. print(len(stateCapital))
    vi print("Maharashtra" in stateCapital)
    vii. print(stateCapital.get("Assam"))
    viii. del stateCapital["Rajasthan"]
        print(stateCapital)

3. "Lists and Tuples are ordered". Explain.

4. With the help of an example show how can you return more than one value from a function.

5. What advantages do tuples have over lists?

6. When to use tuple or dictionary in Python. Give some examples of programming situations mentioning their usefulness.

7. Prove with the help of an example that the variable is rebuilt in case of immutable data types.

8. TypeError occurs while statement 2 is running. Give reason. How can it be corrected?

```
>>> tuple1 = (5)        #statement 1
>>> len(tuple1)         #statement 2
```

1. Write a program to read email IDs of n number of students and store them in a tuple. Create two new tuples, one to store only the usernames from the email IDs and second to store domain names from the email IDs. Print all three tuples at the end of the program. [**Hint:** You may use the function split()]

2. Write a program to input names of n students and store them in a tuple. Also, input a name from the user and find if this student is present in the tuple or not.

We can accomplish these by:

(a) writing a user defined function

(b) using the built-in function

3. Write a Python program to find the highest 2 values in a dictionary.

4. Write a Python program to create a dictionary from a string.
Note: Track the count of the letters from the string.
Sample string   : 'w3resource'
Expected output : {'3': 1, 's': 1, 'r': 2, 'u': 1, 'w': 1, 'c': 1, 'e': 2, 'o': 1}

5. Write a program to input your friends' names and their Phone Numbers and store them in the dictionary as the key-value pair. Perform the following operations on the dictionary:

a) Display the name and phone number of all your friends

b) Add a new key-value pair in this dictionary and display the modified dictionary

c) Delete a particular friend from the dictionary

d) Modify the phone number of an existing friend

e) Check if a friend is present in the dictionary or not

f) Display the dictionary in sorted order of names

PROJECT WORK

1. GAME PROJECT IN PYTHON **"Rock –Paper – scissors"**
2. GAME PROGRAM IN PYTHON **"Guessing Number Game"**
3. Simulation of Dice – in Python

Subject : English

Class - XI

(Sec - A & B)

① Write down the summary of the chapter "Birth".

② Write a critical appreciation of the poem "The Childhoo

③ " I have done something, oh, God! I've done something real at last." Why does Andrew say this? What does it mean?

④ Who was Joe. Morgan? Why had he been waiting for Dr Andrew Manson?

⑤ What according to the poem is involved in the process of growing up?

⑥ Write a critical appreciation of the poem "Melon City".

⑦ Describe the character of the King in "Melon City."

1. दैनिक समाचार-पत्र के संपादक को दिव्या की ओर से एक पत्र लिखिए,जिसमें कार्यालयो में बढ़ते भ्रष्टाचार की ओर सरकार का ध्यान आकर्षित कराया गया हो।

2. 'आज की शिक्षा के बदलते स्वरूप' पर एक रचनात्मक लेखन लिखिए।

3. भारत के विकास को लेकर आप क्या सपने देखते हैं?
4. वर्तमान समय में किसानों की स्थिति किस सीमा तक बदली है? अपने विचार व्यक्त कीजिए।

5. पढ़ाए गए पाठ की पुनरावृत्ति करें।
6. जनसंचार अन्य संचार की तुलना में किस कारण महत्वपूर्ण है?
7. जनसंचार की विशेषताओं का उल्लेख कीजिए?

<u>SECTION – A</u>
Questions 1 to 10 carry 1 mark each.

1. The equation of line whose intercepts on the axes of x and y are –2 and 3 respectively is
   (a) $3x - 2y = 6$ (b) $3x - 2y + 6 = 0$ (c) $3x + 2y = 6$ (d) $3x + 2y = -6$

2. The new coordinates of point (3, –5), if origin is shifted to the point (–3, –2) are
   (a) (6, 3)   (b) (6, –3)   (c) (–6, 3)   (d) (–6, –3)

3. The angle between the X -axis and the line joining the points $(3, -1)$ and $(4, -2)$ is
   (a) 45°   (b) 135°   (c) 90°   (d) 180°

4. The value of y will be, so that the line through (3, y) and (2, 7) is parallel to the line through (−1, 4) and (0, 6).
   (a) 7   (b) 8   (c) 9   (d) 10

5. The equation of the line passing through the point (1, 2) and perpendicular to the line $x + y + 1 = 0$ is
   (a) $y - x + 1 = 0$ (b) $y - x - 1 = 0$ (c) $y - x + 2 = 0$ (d) $y - x - 2 = 0$

6. The equation of line, which passes through point (4, 3) and parallel to the line $2x - 3y = 7$ is
   (a) $2x - 3y + 1 = 0$ (b) $2x - 3y - 1 = 0$ (c) $2x + 3y + 1 = 0$ (d) $2x + 3y - 1 = 0$

7. The distance of the point $(3, -5)$ from the line $3x - 4y - 26 = 0$ is
   (a) $\dfrac{3}{7}$ (b) $\dfrac{2}{5}$ (c) $\dfrac{7}{5}$ (d) $\dfrac{3}{5}$

8. The distance between the parallel lines $3x - 4y + 7 = 0$ and $3x - 4y + 5 = 0$, is
   (a) $\dfrac{3}{7}$ (b) $\dfrac{2}{5}$ (c) $\dfrac{7}{5}$ (d) $\dfrac{3}{5}$

For Q9 and Q10, a statement of assertion (A) is followed by a statement of reason (R). Choose the correct answer out of the following choices.
   (a) Both A and R are true and R is the correct explanation of A.
   (b) Both A and R are true but R is not the correct explanation of A.
   (c) A is true but R is false.
   (d) A is false but R is true.

9. **Assertion (A):** Slope of line $3x - 4y + 10 = 0$ is 3/4.
   Reason (R): x-intercept and y-intercept of $3x - 4y + 10 = 0$ respectively are −10/3 and 5/2.

10. Assertion (A): The slope of the line x + 7y = 0 is 1/7 and y-intercept is 0.
   Reason (R): The slope of the line 6x + 3y − 5 = 0 is − 2 and y-intercept is 5/3.

SECTION – B
Questions 11 to 14 carry 2 marks each.

11. Line through the points (–2, 6) and (4, 8) is perpendicular to the line through the points (8, 12) and (x, 24), find the value of x.

12. Find the equation of the straight line passing through the point (6, 2) and having slope – 3.

13. If the lines $2x + y – 3 = 0$, $5x + ky – 3 = 0$ and $3x – y – 2 = 0$ are concurrent, find the value of k.

14. Find the equation of lines passing through (1, 2) and making angle 30° with y-axis.

SECTION – C
Questions 15 to 17 carry 3 marks each.

15. Find the equations of the altitudes of the triangle whose vertices are A(7, –1), B(–2, 8) and C (1, 2).

16. If P (a, b) is the mid-point of a line segment between axes. Show that equation of the line is $\dfrac{x}{a} + \dfrac{y}{b} = 2$.

17. The vertices of the triangle are A(2, 3), B(4, –1) and C(1, 2). Find the length and equation of the perpendicular drawn from the point A on side BC.

SECTION – D
Questions 18 carry 5 marks.

18. Find the equations of the lines which pass through the point (4, 5) and make equal angles with the lines $5x – 12y + 6 = 0$ and $3x = 4y + 7$.

SECTION – E (Case Study Based Questions)
Questions 19 to 20 carry 4 marks each.

19. One triangular shaped pond is there in a park. Three friends Rani, Mansi, Sneha are sitting at the corners of the triangular park. They are studying in Class XI in an International.
Rani marked her position as (2, –2), Mansi marked as (1, 1) and Sneha marked her position as (–1, 0) as shown in figure given below.

Rani (2, –2)
Mansi (1, 1)   Sneha (–1, 0)
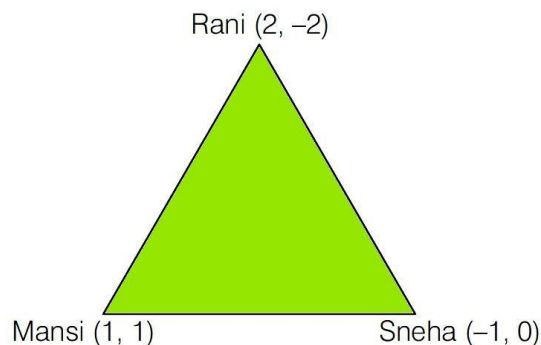
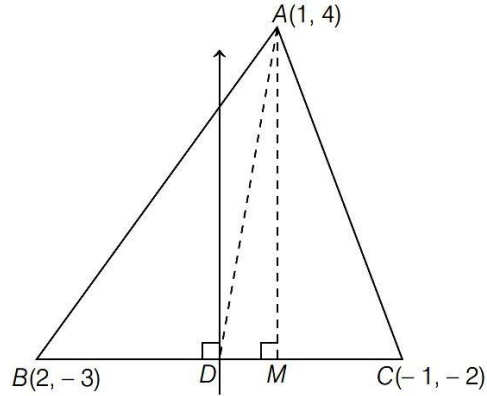Based on the above information answer the following questions.
(i) Find the equation of lines formed by Rani and Mansi. (1)
(ii) Find the Slope of equation of line formed by Rani and Sneha. (1)
(iii) Find the equation of median of lines through Rani. (1)

(iv) Find the equation of altitude through Mansi. (1)

20. One day the mathematics teacher drew a triangle ΔABC while revising straight lines. He marked vertices A(1, 4), B (2, − 3) and C(− 1, − 2) as shown in the given below figure. AD is the median and AM is the altitude through A.

Based on the above information answer the following questions.
(i) Find the slope of BC. (1)
(ii) Find the equation of median through A. (1)
(iii) Find the equation of the altitude through A. (1)
(iv) Find the equation of right bisector of side BC. (1)