TATA DAV PUBLIC SCHOOL, NOAMUNDI

SUMMER HOLIDAY HOME ASSIGNMENT

SUBJECT– ENGLISH

Class XII

- Solve 6 comprehension passages.
- Write an article (250–300 words) on 'Digital India: Boon or Bane'.
- Write 5 Notice and 5 Invitation drafting tasks from the shared questions
- Make a power point presentation to be presented on the project topic
- Prepare project on any taught chapter of Literature Chapters with critical analysis and relate the same with SDG(Sustainable Development Goals) values

CLASS-12 PHYSICS

1. Define electric field intensity. Write it's SI unit.
2. Two point charges 9 mC and 16 mC are separated by a distance of 25 cm. Find the position of null point.
3. Define electric dipole moment. Write it's dimensional formula .
4. Depict the orientation of stable and unstable equilibrium of a dipole placed in a uniform electric field.
5. State Gauss's law. A dipole is enclosed inside a spherical surface. What is the electric flux through this surface?
6. Three point charges each of +5 micro coulomb are placed at the three vertices of an equilateral triangle. Find the net electric field intensity at the centroid of the triangle.
7. State the characteristics of Coulomb's force.
8. Find the electric field intensity due to a charge +8 mC at a distance of 9 cm from it.
9. Distinguish between uniform electric field and non-uniform electric field .

Define the different charge densities.

SUMMER HOLI DAY HOME WORK
SUBJECT - CHEMISTRY

1. Why does the cell voltage of a mercury cell remain constant during it lifetime?

2. Write the reaction occurring at anode and cathode and the products of electrolysis of aq KCl.

3. What is the pH of HCl solution when the hydrogen gas electrode shows a potential of -0.59 V at standard temperature and pressure?

4. The resistance of a conductivity cell is 1500 ohm. What is the cell const if conductivity is 0.2×10^{-3}

5. What is the quantity of electricity in Coulombs required to produce 4.8 g of Mg from molten MgCl2? How much Ca will be produced if the same amount of electricity was passed through molten CaCl2? (Atomic mass of
Mg = 24 u, atomic mass of Ca = 40 u).

6. What is the standard free energy change for the following reaction at room temperature? Is the reaction spontaneous?

$Sn(s) + Cu^{2+}(aq) \longrightarrow Sn^{2+}(aq) + Cu(s)$

$E^o(Sn^{2+}/Sn) = -0.14$ $E^o(Cu^{2+}/Cu) = +0.34$

7. When 1.5 g of a non volatile solute was dissolved in 90g of benzene , the boiling point of benzene is raised from 353.23K to 353.93K . Calculate the molar mass of the solute. ($K_b = 0.76$)

8. Calculate the mass of ascorbic acid (MM=176gm/mol) to be dissolved in 75g of acetic acid to lower its melting point by 1.5^0C . $K_f = 3.9$ K Kg mol^{-1}

9. Vapour pressure of pure water at 298K is 23.8 mm Hg . 50g of urea (NH_2CONH_2) is dissolved in 850 g of water . Calculate the relative lowering in vapour pressure and vapour pressure for this solution .

10. Define azeotropes . What type of azeotrope is formed by negative deviation from Roult's law ? Give an example

SUMMER VACATION HOME WORK
CLASS -- XII SUBJECT-- BIOLOGY

1. When and where do chorionic villi appear in humans? State their functions.
   Arrange the following hormones in the sequence of their secretion during pregnancy in women:

hCG, LH, FSH, Relaxin..Mention their source and functions.

2. What is amniocentesis? Write one advantage and one disadvantage of it.

3. Name any two intrauterine contraceptive devices (IUDs) that affect the mobility of sperms.

4. Write any two differences between spermatogenesis and oogenesis.

5. Name the stage in which:

(i) Corpus luteum and placenta coexist.

(ii) Corpus luteum temporarily ceases to exist.

6. A couple has been trying to conceive for 8 years. The male partner has low sperm count. Suggest one suitable ART method. Briefly explain how it works.

7. Explain why IVF is called a "test tube baby" technique even though the baby does not develop inside a test tube.

8. Assertion: Colostrum is highly beneficial for newborn babies.

Reason: It contains antibodies that provide immunity.

9. Assertion: Amniocentesis is legally restricted in India.

Reason: It was misused for female foeticide.

10. Assertion: Vasectomy is a permanent contraceptive method for males.

Reason: In vasectomy, the vas deferens is cut and tied.

HOLIDAY HOME ASSIGNMENT

STD XII **SUBJECT- MATHEMATICS**

1. Show that the relation R in the set {1, 2, 3} given by R = {(1, 1), (2, 2), (3, 3), (1, 2), (2, 3)} is reflexive but neither symmetric nor transitive.
2. Let Z be the set of all integers and R be the relation on Z defined as R = {(a, b): a, b ε Z and (a – b)is divisible by 5}. Prove that R is an equivalence relation.
3. If R_1 and R_2 are two equivalence relations in a set A, show that$R_1 \cap R_2$ is also an equivalence relation.
4. Let A = {1, 2, 3, …, 9} and R be the relation in A X A defined by (a, b) R (c, d) if a +d = b +c, for (a, b), (c, d) ε A X A. Prove that R is an equivalence relation, also obtain the equivalence class [(2, 5)].
5. Find the principal values of the following:
   (i) $\cot^{-1}(-\sqrt{3})$
   (ii) $\sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$
   (iii) $\sin^{-1}\left(-\frac{1}{2}\right)+\cos^{-1}\left(-\frac{1}{2}\right)$
   (iv) $\tan^{-1}\left(\sqrt{3}\right)-\sec^{-1}(-2)$
   (v) $\cos^{-1}\left(\frac{1}{2}\right)-2\sin^{-1}\left(-\frac{1}{2}\right)$
6. Find the values of the following:
   (i) $\tan^{-1}\left[2\sin\left(2\cos^{-1}\frac{\sqrt{3}}{2}\right)\right]$
   (ii) $\sin\left[\frac{\pi}{3}-\sin^{-1}\left(-\frac{1}{2}\right)\right]$
   (iii) $\tan^{-1}\left[2\cos\left(2\sin^{-1}\frac{1}{2}\right)\right]$
   (iv) $\tan^{-1}(1)+\sin^{-1}\left(-\frac{1}{2}\right)+\cos^{-1}\left(-\frac{1}{2}\right)$
7. If $\begin{bmatrix}1 & 2\\ 3 & 4\end{bmatrix}\begin{bmatrix}3 & 1\\ 2 & 5\end{bmatrix}=\begin{bmatrix}7 & 11\\ k & 23\end{bmatrix}$, then find the value of k.
8. Find the value of x and y, if $2\begin{bmatrix}1 & 3\\ 0 & x\end{bmatrix}+\begin{bmatrix}y & 0\\ 1 & 2\end{bmatrix}=\begin{bmatrix}5 & 6\\ 1 & 8\end{bmatrix}$
9. Find the matrix X such that 2A + B + X = 0, where A = $\begin{bmatrix}-1 & 2\\ 3 & 4\end{bmatrix}$ and B = $\begin{bmatrix}3 & -2\\ 1 & 5\end{bmatrix}$
10. If X and Y are 2 x 2 matrices, then solve the following matrix equations of X and Y.
    2X + 3Y = $\begin{bmatrix}2 & 3\\ 4 & 0\end{bmatrix}$, 3X + 2Y = $\begin{bmatrix}-2 & 2\\ 1 & -5\end{bmatrix}$.

SUMMER HOLIDAY HOMEWORK
SUBJECT- PHYSICAL EDUCATION

1. Imagine your school is hosting an **Inter-House Sports Competition**.
   Design a **step-by-step plan** including:

- Objectives
- Committees
- Schedule
- Resources required

2. Create your own **sports event logo and motto**, and explain the meaning behind it

3. If you are the **Event Manager**, how would you handle:
- Rain interruption
- Player injury
- Crowd mismanagement

4. Prepare a **budget plan** for a small sports event in your school.

5. Make a checklist of all the **materials and equipment required** for conducting a sports day.

SUBJECT - HINDI

विषय:- हिंदी

1. भक्तिन विषय परसुंदर एवं आकर्षक परियोजना कार्य तैयार‘कीजिए।
2. बदलते परिवेश में डिजिटल शिक्षाऔर शब्दों में फीचर 200 विषय पर लगभग‘मोबाइल की दुनिया में खोता बचपन’ लेख लिखिए।
3. कवित‘ आत्मपरिचय’ा याद कीजिए।
4. पाठ पढ़करप्रश्नोत्तर‘सिल्वरवेडिंग’तैयार कीजिए।

Sub: Computer Science

1. Find and write the output of fallowing python code:

(a)
```
x="abcdef"
u=’a’=
while i in x :
        print(i, end=’ ’)
```

(b)
```
>>> l = "Computer Science"
>>>[-6:-3]
```

(c)
```
9//-4
```

(d)
```
Import random
POINTS = [30.50, 20,45]
BEGIN random.randint(0,3)
LAST random.randint(2,3)
for  C in range (BEGIN, LAST +1):
print (POINT [C], '#', end =")
```

(e)
```
int ('462.3')
```

(f)
```
Lst1=["10","50","30","40"]
CNT 3
Sum = 0
for i in(7,5,4,6):
        T=Lst1[CNT]
        Sum =float(T)+I
        print (sum)
        CNT-=1
```

(g) L= ["abc", [6,7,8], 3, "mouse"]

Write output of-

(i) L[3:]
(ii) L[::2]
(iii) L[1:2]
(iv L[1][1]

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