



**PRATAP PUBLIC SCHOOL, SECTOR – 6, KARNAL**

**HOLIDAYS HOMEWORK**

**CLASS 12 (SCIENCE)**

**ENGLISH**

- 1.Revise the syllabus done so far.
- 2.Watch Ted talks related to efficacious topics and read the articles published in the newspaper weekly to flourish your writing skills.
- 3.Refer to BBC Sample paper and attempt competency based questions of the lessons covered so far.

**PROJECT WORK**

**A.**

TOPIC: A Thematic Analysis of\_\_\_\_\_.

Poems: (choose any one)

1. My Mother at Sixty-Six
2. Keeping Quiet

**Organization of Project:**

First Page:

ENGLISH CORE – 301
PROJECT ON
THEMATIC ANALYSIS OF: <u>NAME OF POEM</u>
BY: <u>NAME OF POET</u>
SUBMITTED TO: <u>NAME OF YOUR ENGLISH TEACHER</u>
SUBMITTED BY: <u>YOUR NAME</u>
SIGNATURE : <u>YOUR SIGN</u>
CLASS & SECTION: _____
ROLL #: _____

## **MUSIC**

1. Raag-Malkounsh,

Bhairav,Bhageshwari Parichay And Notations

2. Taal-Rupak,Jhaptaal,

Dhamar Notations And Parichay

3. Jeevanparichay-Ustad Faiyaz Khan, Ustad Bade Gulam Ali Khan, Krishan Rao Shankar Pandit

4. Draw Structure of Tanpura And Introduction of Tanpura

## **PAINTING**

\*Revise unit 4 and 5.

\*Prepare practical file.

## **COMPUTER SC.**

Prepare one project in python from the following list of projects:-

1. Library Management system

2. Examination Management system

3. Shop Management system

4. Hospital Management system

Holidays Home work

Class: XII Mathematics

1. Prepare fair register for first four chapters from NCERT.

2. Prepare practical work.

\* Six pages, one for every graph of trigonometrical functions.

\* Six pages, one for every graph of inverse trigonometrical functions

\* Write table for their domain and range.

# Pratap Public School, Sector-6, Karnal

## Holiday Homework-2024

### XII (Biology)

1. Prepare intext questions along with answers from the chapter no.1,2 and 3 as per the following instructions:

i) MCQ type-10

ii) Assertion-reason type questions-10

iii) Short answer type questions-10

iv) Long answer type questions-5

2. Practice Mendel's monohybrid and dihybrid crosses to understand the Mendelian laws of inheritance

3. Write practicals in Biology practical file in the same sequence as per instructions by subject teacher.

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# HOLIDAYS HOME WORK

CLASS 12<sup>TH</sup> CHEMISTRY 2024

- A. Intext problems of (NCERT)
- Solutions (Unit I)
  - Electrochemistry(Unit II)
  - Chemical kinetics(Unit III)
- B. Back exercise of(NCERT)
- Solutions(Unit I)
  - Electrochemistry(UnitII)
  - Chemical kinetics(Unit III)
- C. Prepare one project report related to your final practical examination  
Contact your class teacher about the topic
- D Write down two Excercises of titrations for the practical you had done  
Redox reaction of  $\text{KMnO}_4$  and Mohr salt

# PRATAP PUBLIC SCHOOL, KARNAL

PHYSICS HOLIDAYS WORK

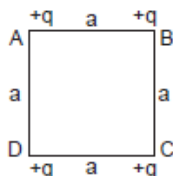
CLASS-12<sup>TH</sup> SCIENCE

TOPIC-ELECTRIC CHARGES AND FIELDS

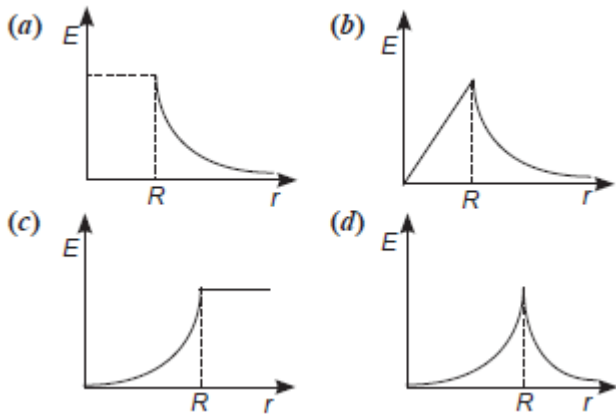
Instructions for Assertion and Reasons:

- A) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
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1. Assertion : In a cavity in a conductor, the electric field is zero.  
Reason : Charges in a conductor reside only at its surface.
2. Assertion : : In a non-uniform electric field, a dipole will have translatory as well as rotatory motion.  
Reason : In a non-uniform electric field, a dipole experiences a force as well as torque.
3. Assertion : When bodies are charged through friction, there is transfer of charge from one body to another. No charge is created or destroyed.  
Reason : This is according to the law of conservation of electric charge.
4. Assertion : Using Gauss law, it is possible to find the electric field at any point.  
Reason : Gauss law is applicable for any type of charge distribution.
5. When a glass rod is rubbed with silk, it
  - (a) gains electrons from silk.
  - (b) gives electrons to silk.
  - (c) gains protons from silk.
  - (d) gives protons to silk.
6. Two similar spheres having +Q and -Q charges are kept at a certain distance. F force acts between the two. If at the middle of two spheres, another similar sphere having +Q charge is kept, then it experiences a force in magnitude and direction as
  - (a) zero having no direction.
  - (b) 8F towards +Q charge.
  - (c) 8F towards -Q charge.
  - (d) 4F towards +Q charge.
7. Four equal charges q are placed at the four corners A, B, C, D of a square of length a. The magnitude of the force on the charge at B will be



- (a)  $\frac{3q^2}{4\pi \epsilon_0 a^2}$       (b)  $\frac{4q^2}{4\pi \epsilon_0 a^2}$       (c)  $\frac{(1+2\sqrt{2})q^2}{8\pi \epsilon_0 a^2}$       (d)  $\frac{(2+1)\sqrt{2}q^2}{4\pi \epsilon_0 a^2}$
8. The electric field inside a spherical shell of uniform surface charge density is
    - (a) zero.
    - (b) constant, less than zero.
    - (c) directly proportional to the distance from the centre.
    - (d) none of the these
  9. Electric field at a point varies as  $r^0$  for
    - (a) an electric dipole
    - (b) a point charge
    - (c) a plane infinite sheet of charge
    - (d) a line charge of infinite length
  10. An electric charge q is placed at the centre of a cube of side a. The electric flux on one of its faces will be
    - (a)  $\frac{q}{6\epsilon_0}$
    - (b)  $\frac{q}{\epsilon_0 a^2}$
    - (c)  $\frac{q}{4\pi \epsilon_0 a^2}$
    - (d)  $\frac{q}{\epsilon_0}$
  11. A point charge q is placed at a distance a/2 directly above the centre of a square of side a. The electric flux through the square is
    - (a)  $q/\epsilon_0$
    - (b)  $q/\pi\epsilon_0$
    - (c)  $q/4\epsilon_0$
    - (d)  $q/6\epsilon_0$
  12. Which of the following graphs shows the variation of electric field E due to a hollow spherical conductor of radius R as a function of distance from the centre of the sphere?



13. The magnitude of electric field intensity  $E$  is such that, an electron placed in it would experience an electrical force equal to its weight is given by
- (a)  $mge$                       (b)  $\frac{mg}{e}$                       (c)  $\frac{e}{mg}$                       (d)  $\frac{e^2 g}{m^2}$
14. Which of the following statement is correct? The electric field at a point is
- (a) always continuous.  
 (b) continuous if there is a charge at that point.  
 (c) discontinuous only if there is a negative charge at that point.  
 (d) discontinuous if there is a charge at that point.
15. An electric dipole of moment  $p$  is placed in the position of stable equilibrium in uniform electric field of intensity  $E$ . It is rotated through an angle  $\theta$  from the initial position. The potential energy of electric dipole in the final position is
- (a)  $pE \cos \theta$                       (b)  $pE \sin \theta$                       (c)  $pE(1 - \cos \theta)$                       (d)  $-pE \cos \theta$

## TOPIC-ELECTRIC POTENTIAL AND CAPACITANCE

Instructions for Assertion and Reasons:

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- Assertion : If the distance between parallel plates of a capacitor is halved and dielectric constant is three times, then the capacitance becomes 6 times.  
Reason : Capacity of the capacitor does not depend upon the nature of the material.
- Assertion : The total charge stored in a capacitor is zero.  
Reason : The field just outside the capacitor is  $\sigma/\epsilon_0$ . ( $\sigma$  is the charge density).
- Assertion: The potential difference between any two points in an electric field depends only on initial and final position.  
Reason: Electric field is a conservative field so the work done per unit positive charge does not depend on path followed.
- Assertion : Work done in moving a charge between any two points in an electric field is independent of the path followed by the charge, between these points.  
Reason: Electrostatic force is a non conservative force.
- Assertion : Electric potential and electric potential energy are different quantities.  
Reason : For a system of positive test charge and point charge electric potential energy = electric potential.
- A positively charged particle is released from rest in an uniform electric field. The electric potential energy of the charge
  - remains a constant because the electric field is uniform.
  - increases because the charge moves along the electric field.
  - decreases because the charge moves along the electric field.
  - decreases because the charge moves opposite to the electric field.

7. If a unit positive charge is taken from one point to another over an equipotential surface, then  
 (a) work is done on the charge. (b) work is done by the charge.  
 (c) work done is constant. (d) no work is done
8. A hollow metal sphere of radius 5 cm is charged so that the potential on its surface is 10 V. The potential at the centre of the sphere is  
 (a) 0 V (b) 10 V  
 (c) Same as at point 5 cm away from the surface  
 (d) Same as at point 25 cm away from the surface
9. The electrostatic force between the metal plates of an isolated parallel plate capacitor C having a charge Q and area A, is  
 (a) proportional to the square root of the distance between the plates.  
 (b) linearly proportional to the distance between the plates.  
 (c) independent of the distance between the plates.  
 (d) inversely proportional to the distance between the plates.
10. A conductor with a positive charge  
 (a) is always at +ve potential. (b) is always at zero potential.  
 (c) is always at negative potential. (d) may be at +ve, zero or -ve potential.
11. Which of the following options are correct? If a conductor has a potential  $V \neq 0$  and there are no charges anywhere else outside, then  
 (a) there must not be charges on the surface or inside itself.  
 (b) there cannot be any charge in the body of the conductor.  
 (c) there must be charges only on the surface.  
 (d) there must be charges inside the surface.
12. Which of the following options is correct? In a region of constant potential.  
 (a) the electric field is uniform. (b) the electric field is zero.  
 (c) there can be charge inside the region.  
 (d) the electric field shall necessarily change if a charge is placed outside the region.
13. The radii of two metallic spheres A and B are  $r_1$  and  $r_2$  respectively ( $r_1 > r_2$ ). They are connected by a thin wire and the system is given a certain charge. The charge will be greater  
 (a) on the surface of the sphere B. (b) on the surface of the sphere A.  
 (c) equal on both. (d) zero on both.
14. If E is the electric field intensity of an electrostatic field, then the electrostatic energy density is proportional to  
 (a) E (b)  $E^2$  (c)  $1/E^2$  (d)  $E^3$
15. Which of the following statements is true?  
 On increasing the distance between the plates of a parallel plate capacitor  
 (a) the electric intensity between the plates will decrease.  
 (b) the electric intensity between the plates will increase.  
 (c) the electric intensity between the plates will remain unchanged.  
 (d) the P.D. between the plates will decrease.

## TOPIC-CURRENT ELECTRICITY

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Instructions for Assertion and Reasons:

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1. Assertion : In a simple battery circuit, the point of the lowest potential is positive terminal of the battery.  
 Reason : The current flows towards the point of the higher potential, as it does in such a circuit from the negative to the positive terminal.
2. Assertion : Voltmeter is connected in parallel with the circuit.  
 Reason : Resistance of a voltmeter is very large.
3. Assertion : Ohm's law is applicable for all conducting elements.  
 Reason : Ohm's law is a fundamental law.



4. Assertion : An electric bulb becomes dim, when the electric heater in parallel circuit is switched on.  
Reason : Dimness decreases after sometime.
5. Assertion : Human body is a bad conductor of electricity.  
Reason : The materials which allow electric current to pass through them are conductors of electricity.
6. Consider a current carrying wire current  $I$  in the shape of a circle. Note that as the current progresses along the wire, the direction of  $j$  (current density) changes in an exact manner, while the current  $I$  remain unaffected. The agent that is essentially responsible for is
- source of emf.
  - electric field produced by charges accumulated on the surface of wire.
  - the charges just behind a given segment of wire which push them just the right way by repulsion.
  - the charges ahead.
7. Which of the following is wrong? Resistivity of a conductor is
- independent of temperature.
  - inversely proportional to temperature.
  - independent of dimensions of conductor.
  - less than resistivity of a semiconductor.
8. Drift velocity  $v_d$  varies with the intensity of electric field as per the relation
- $v_d \propto E$
  - $v_d \propto \frac{1}{E}$
  - $v_d = \text{constant}$
  - $v_d \propto E^2$
9. When there is an electric current through a conducting wire along its length, then an electric field must exist
- outside the wire but normal to it.
  - outside the wire but parallel to it.
  - inside the wire but parallel to it.
  - inside the wire but normal to it.
10. A metal rod of length 10 cm and a rectangular crosssection of  $1 \text{ cm} \times 1/2 \text{ cm}$  is connected to a battery across opposite faces. The resistance will be
- maximum when the battery is connected across  $1 \text{ cm} \times 1/2 \text{ cm}$  faces
  - maximum when the battery is connected across  $10 \text{ cm} \times 1 \text{ cm}$  faces
  - maximum when the battery is connected across  $10 \text{ cm} \times 1/2 \text{ cm}$  faces
  - same irrespective of the three faces
11. Which of the following characteristics of electrons determines the current in a conductor?
- Drift velocity alone.
  - Thermal velocity alone.
  - Both drift velocity and thermal velocity.
  - Neither drift nor thermal velocity.
12. Kirchoff's junction rule is a reflection of
- conservation of current density vector.
  - conservation of potential.
  - the fact that the momentum with which a charged particle approaches a junction is unchanged (as a vector) as the charged particle leaves the junction.
  - the fact that there is no accumulation of charges at a junction.
13. Ohm's law is true.
- For metallic conductors at low temperature.
  - For metallic conductors at high temperature.
  - For electrolytes when current passes through them.
  - For diode when current flows.
14. A cell of internal resistance  $1.5 \Omega$  and e.m.f. 1.5 volt balances on 500 cm length of a potentiometer wire. If a wire of  $15 \Omega$  is connected between the balance point and the cell, then the balance point will shift
- to zero
  - by 500 cm
  - by 750 cm
  - no change
15. The terminal potential difference of a cell is greater than its e.m.f. when it is
- being discharged.
  - in open circuit.
  - being charged.
  - being either charged or discharged.

◆◆◆

You will solve all the exercises from the NCERT text book of

ch1 - - electric charges and fields

ch2- - electric potential and capacitance

ch3 – current electricity

Second Page: Acknowledgement

Third Page: Certificate by the internal examiner

It must include

### **Text**

- Title: Thematic Analysis –
- Themes analyzed

1. Theme 1

2. Theme 2

- Your opinion
- Conclusion

Paste pictures related to the theme

### **Maintain originality**

**B.** The author Tishani Doshi in ‘Journey to the End of the Earth’ presents a picture of Antarctica from a different perspective.

It is indeed the place to go to understand the earth’s past, present and future. On the basis of the reading of ‘The Ailing Planet’ & ‘Journey to the End of the Earth’ prepare a **PPT** highlighting the significance of the continent also, reflect how man’s unwarranted encroachment has proved to be catastrophic.

Watch Geography and Discovery channels and gather information to make it interesting.