R.E.D. Group of Schools
Summer Holidays Homework Framework
SESSION: 2023-24
CLASS – 12th

Subject: English   **Text Book: Flamingo, Vistas and BBC Compacta**

Syllabus Covered upto MAY END

Book Flamingo

o   Chapter No.1   Chapter Name- The Last Lesson

o   Chapter No.- 2   Chapter Name-Lost Spring

o   Poem   1   Poem Name- My Mother at Sixty-six

o   Poem 3Poem Name – Keeping Quiet

o   Chapter No. 3   Chapter Name- Deep Water

o   Chapter No. 4   Chapter Name- The Rattrap

Book Vistas

o   Chapter No. 1   Chapter Name – The Third Level

o   Chapter No. 4   Chapter Name- The Enemy

2.   List of all new concepts taughtupto MAY END (Grammar Topics)

o   Chapter No. Chapter Name- Reading Comprehension

o   Chapter No.   Chapter Name- Notice Writing

o   Chapter No.   Chapter Name- Invitations and Replies

o   Chapter No.   Chapter Name- Formal Letters

3.   Tools required for doing Homework:

o   Reader Book

o   Notebook

o   Scrap Book

o   Resources as per activity

4.   Date of Submission of Homework: 3nd July, 2023

Category 9-12
5.   Instruction/Guidelines for Formative Assessment based Homework:

o   **Section-A-**Reading and Vocabulary Homework

   ➢   Each student will read :

Fictional work: The Old Man and the Sea by Ernest Hemingway

Non-fiction: Restless Days, Sleepless Nights by RanjanaBharij

 Write review of both the works separately using the following steps

- ➤ **Note: - Do the following homework in scrap book**
  - ✓ Draw creative page as front page
  - ✓ Identify and list the Main characters in the Book
  - ✓ Write the summary of the story as follows :—
    - ❖ Beginning
    - ❖ Middle
    - ❖ End
  - ✓ Write your favourite part of the story
  - ✓ Mention anything you disliked about the book
  - ✓ Book rating out of 5 and why
  - ✓ If you were the author how will you end the story
2. Read any English newspaper once in a week and find out 5 new words from it & frame a sentence from it and present them in the same scrap book

   Vocabulary Homework
   - ➤ Make your own dictionary.(Each student will learn 3 new words daily with meanings and write the words in dictionary)

     Total 45 words should be included in your dictionary

- o **Section-B-** Speaking Homework
  - 1. Students will practice on one of the given topics :-
  - ➤ " The limit of my languageis the limit of my world"

    OR
  - ➤ Poverty and mental health

    OR
  - ➤ Mother- daughter relationship

    Students will prepare speaking activity video on any one of the above topics and share with English teachers on WhatsApp group
- o **Section-C-**Creative Writing Homework

  Creative Writing Homework

     Travelogue writing: There are many tourist attractions. They are popular for many reasons. Some places are popular for their natural beauty whereas others are for their historical and religious importance. Write the names of the places that you would like to visit in our country naturally beautiful places, places of historical and religious importance. Have you ever visited such places on your holidays? Write down the places you have visited so far. Writedetailed description of a visited place in the form of a paragraph.
  - ➤ **Character portrait/ sketch writing** of yourfavourite character from the novel"The Guide" by R.K. Narayan on A4 size sheet.

> **Review writing: On a movie " Three idiots"**

o **Section-D-** Learning and Pre reading Homework

   1. **Pre- reading**: Poem No. -4 , A Thing of Beauty

                 Poem No.; -5, A Roadside Stand

   Learning : Book Flamingo

o Chapter No. 1   Chapter Name- The Last Lesson
o Chapter No.- 2   Chapter Name-   Lost Spring
o Poem   1   Poem Name- My Mother at Sixty-six
o Poem 3Poem Name – Keeping Quiet
o Chapter No. 3   Chapter Name- Deep Water
o Chapter No. 4   Chapter Name- The Rattrap
o Book Vistas
o Chapter No. 1   Chapter Name – The Third Level
o Chapter No. 4   Chapter Name- The Enemy
o **Section-E-** Project work

   1. **Prepare a student portfolio and include the following details :-**

> Personal details

> What I understand by portfolio

> My goals/ Aim in life for future

> My achievements till now

> The areas I need to work to achieve my goal

Following projects can be given for Grammar Topic covered in the month of April and May:-

2. 12 tenses formula with examples

         OR

Verb project chart

         OR

Parts of speech and application

3. Grammar flip book with all rules, tips and tricks on Clauses and Conditional sentences

                OR

Draw your favorite fiction-character from the book 'Old man and the Sea' and describe it using

10 adjectives

R.E.D. Group of Schools
Summer Holidays Homework
SESSION: 2023-24
CLASS – 12th

Subject: PHYSICS   **Text Book: S.L. Arora, NCERT**

1. **Syllabus Covered upto MAY END**
   - Chapter No.- **01** Chapter Name- **Electric charge and field**
   - Chapter No.- **02** Chapter Name-**Electric potential and electric capacitance**
   - Chapter No.- **03** Chapter Name- **Current and electricity**
   - Chapter No.- **04** Chapter Name- **Magnetic effect of current**

2. **List of all new concepts taught upto MAY END**
   - Force between the charges and their field
   - Concept of capacitance and electric potential
   - Polarization and dielectric
   - Concept of current, Potential difference and EMF
   - Combination of cells and resistance
   - Magnetic fields of various caring figures
   - Force on a Moving charge particles in magnetic field

3. **Formative Assessment based Homework:**
   - **Section-A-**Creative Project/ Working model/ Inquiry based project.
   - **Section-B-**Diagram and Labeling assessment activity.
   - **Section-C-**Experiment based activity.
   - **Section-D-** Derivations.

4. **Summative Assessment based Homework:**
   - **Section-E- Chapter-wise Assignments**

5. **Tools required for doing Homework:**
   - NCERT Text Book, S.L. Arora book
   - Notebook
   - A4 Sheets, Internet
   - Resources as per activity

6. **Instruction/Guidelines for Formative Assessment based Homework:**
   - **Section-A-Creative Project/ Working model/ Inquiry based project.**

Topic	Roll No.
Make a working project of Periscope	1 to 10
Creating Electric Current with a Magnet	11 to 20
Make Earthquake Alarm Working Model	21 to 30
Solar panel	31 to 40

   I. **(Roll No. 1 to 10) Topic: Make a working project of Periscope**
   - **Materials Required:** Two congruent pieces of mirror, cardboard or a PVC pipe, cutter, tape or glue
   - **Steps to prepare:**
     - Use cardboard to make three hollow cuboids and arrange them in the shape of a real periscope.
     - Attach the mirror glasses to the opposite corners of the structure at an angle equal to 45°.
     - Hold one end of the periscope on eye level and look at the distant objects easily.

   II **(Roll No. 11 to 20) Topic: Creating Electric Current with a Magnet**
   - **Materials Required;- Coil the large no of turns, 9V volt battery, key, Galvanomerter**
   - **Steps to prepare:**
     - Wind coils using 32 gauge wire (200 turns and 400 turns). Pass a strong magnet through each of the coils.
     - Measure the amount of electricity generated by the magnet moving through the coils by using a galvanoscope.
     - Repeat the procedure by moving the magnets through the coils at different speeds to see the difference in the current generated.

   III. **Roll No.2 1 to 30) Topic: Make Earthquake Alarm Working Model**
   - **Materials Required;-** LED light (preferably red),1 kilo-ohm resistor, Wire, Buzzer, Copper wire, Steel nut, 9v Battery, 9v Battery clip connector, On/Off switch. Cardboard
   - **Steps to prepare:**
     - Take a 7cm long copper wire, fold it and twist it. When done, penetrate that through the

perpendicular cardboard, like this.

➤ Take the steel nut, penetrate a copper wire through the nut and twist it. The nut would act as a pendulum in the model. Fix this steel nut in the model by taking the tail (copper wire tied to the steel nut) and putting it across the small square cardboard. After doing, fix the pendulum in its place using a glue gun. Make sure you penetrate the pendulum across the small knot using copper wire on the perpendicular cardboard piece. Fix this steel nut in the model

➤ Now, we need to work with the buzzer and the LED light. Firstly, take the 1-kilo ohm resistor and fix it at one end of the LED light. This can be done using a heating mechanism.

➤ Fix a battery to the battery connector. Using the glue gun, fix the on/off switch, the battery, buzzer and the LED light at the edge of the cardboard base to complete the model. Ensure the switch is kept on to make the model a functional earthquake alarm

IV. **Roll No. 31 to 40) Topic:** **Solar panel**
- **Materials Required;-** ferric chloride solution, solder, solder iron, alcohol, and crystal silicon paste.
- **Steps to prepare:**
➤ Apply crystal silicon paste over the printed circuit board and leave it to dry.
➤ Remove the extra paste from the printed circuit board.
➤ Attach the connecting wires to form the positive and negative terminals of the solar panel.
➤ Place the set-up in direct sunlight and connect a multimeter across the terminals.

o **Section-B- Diagram and Labeling assessment activity.**
- Draw well labeled diagrams of the following:
  ➤ Equipotential surface due to 1) point charge 2) dipole 3) Line charge distribution
  ➤ Magnetic field due to current carrying wire
  ➤ Magnetic field due current carrying solenoid
  ➤ Plots Graph electric field vs distance for point charge, line charge and dipole
  ➤ Plots Graph of electric potential vs distance for point charge, line charge and conducting shell

o **Section-C-Experiment based activity.**
  ➤ **Name of the Activity**: Bending Water Static Electricity Experiment
  ➤ **Material Required**: A sink ,A comb or a balloon
  ➤ **Procedure**: We did this impressive science experiment in my fifth grade class, and I have remembered it all these years! This experiment can be done with a comb OR a balloon. Either one will work just fine. Turn on the faucet with a very small stream of water. The smaller, the better, but you do need the water to be running consistently and not just dripping. Then charge either the comb or the balloon by running it through your hair. Hold the comb or the balloon very close to the stream of water, but not touching it.
  ➤ **Observations:**
  ➤ **Conclusion:**
  ➤ **Precautions:**

o **Section-D- Derivations**
- **Learning Homework:**
- Derivations
  1) Electric field due to dipole on its axial line and equatorial line
  2.) Electric field due to a Charged ring on its center and on a point on its axil line
  3.) Electric field due to a charged wire of infinite length using Gauss theorem
  4.) Electric field due to a conducting hollow shell using Gauss theorem
  5.) Combination of cells in series and parallel
  6.) Magnetic field due current carrying wire
  7.) Magnetic field due to current carrying circular coil on its axil line
  8.) Magnetic field due to a solenoid using Ampere circuital law
  9.) Derivation of radius, time period, frequency of a charged particle in magnetic field.

o **Section-E-Revision assignment.**

For recapitulation & solving the assignment the students should refer to their NCERT BOOK, MTG

Part-1

(Case Study Question/Activity based Question)

Instruction: Read the following passage and answer the question no. 1, 2,3,4 & 5.

Case Study- 1

From the knowledge of electric intensity $(\vec{E})$ at any point $(\vec{r})$, we can calculate the magnitude and direction of force experienced by any charge q_0 held at that point $\vec{f}(\vec{r}) = q_0 \vec{E}(\vec{r})$

This is the physical significance of electric field. As against the electric lines of force which are continuous but not closed loops, magnetic lines of force are continuous, endless closed loops.

An electric dipole consists of a pair of equal and opposite point charges separated by some small distance. The dipole moment $(\vec{p})$ is a measure of strength of electric dipole $\vec{p} = q(2\vec{r})$. The direction of $(\vec{p})$ is form negative charge to positive charge. On axial line of electric dipole $|\vec{E}| = \dfrac{|\vec{p}|2r}{4\pi \in_0 (r^2 - a^2)^2}$

The direction of $\vec{E}$ is opposite to direction of $\vec{p}$. On equatorial line of electric dipole, $|\vec{E}| = \dfrac{|\vec{p}|}{4\pi \in_0 (r^2 + a^2)^{3/2}}$

Q.1 **A charge *q is held in an electric field of intensity* $\vec{E}$. What is the force on the charge?**
   (a) E/q   (b) qE   (c) q/E   (d) None

Q.2. **The algebraic sum of charges on an electric dipole is _____.**
   (a) 2q   (b) q   (c) 0   (d) None

Q.3. **Electric field $\vec{E}$ on axial line of electric dipole is $E \propto r^n$. What is the value of *n*?**
   (a) -2   (b) -3   (c) 3   (d) -3

Q.4. **Give ratio of magnitude of electric intensity due to an electric dipole at a point on equatorial line and on axil line at same distance from center o dipole of electric dipole.**
   (a) 2:1   (b) 1:2   (c) 2:3   (d) 3:2

Part-2

Subject Specific conceptual definitions & Application based Questions

Q.4. **Define the following terms:-**
   i) Quantization of charge   ii) Electric Dipole
   iii) Electric potential energy   iv) Dielectric

Q.5. **Answer the following:-**
   i)   Derive an expression for potential energy of an electric dipole in a uniform electric field. In which situation, the potential energy of dipole is (i) maximum and (ii) minimum?
   ii)   State Gauss's Theorem in electrostatics and deduce coulomb's law from Gauss's theorem.
   iii)   Using Gauss's theorem, derive an expression for electric field intensity at a point due to
         (a) a line of charge.   (b) A uniformly charged thin spherical shell.
         (c) a charged solid sphere.   (d) an infinite plane sheet of charge.
         (e) two parallel sheets of charge with charge densities, σ and $-\sigma$.

Q.6. **Application based question:-**
   (a) A hollow cylindrical box of length 1 m and area of cross section 25 cm^2 is as shown in Fig. The electric field in the region is given by $\vec{E} = 50x\hat{i}$, where E is in NC^{-1}, and x is in metre .
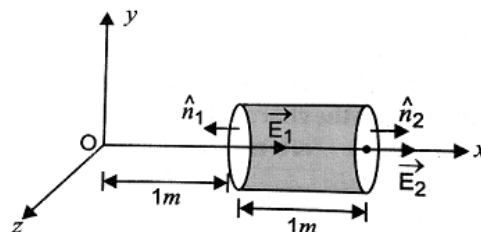
Find –
(i) Net flux through the cylinder
(ii) Charge enclosed by the cylinder.

(b) An early model for an atom considered it to have a positively charged point nucleus of charge Ze, surrounded by a uniform density of negative charge upto a radius R. The atom as a whole is neutral. For this model, what is the electric field at a distance r form the nucleus?

(c) (i) Is the force acting between two point charges q_1 and q_2 kept at some distance in air, attractive or repulsive when : (i) $q_1 q_2 > 0$ (ii) $q_1 q_2 < 0$
(ii) Write down the value of absolute permittivity of free space.
(ii) What is the relevance of large value of K (=81) for water?

(d) (i) A charge q is placed at the centre of a cube of side l what is the electric flux passing through two opposite faces of the cube?
(ii) Two concentric spherical shells of radii R and $2R$ are given charges Q_1 and Q_2 respectively. The surface charge densities of the outer surfaces are equal. Determine the ratio $Q_1 : Q_2$.

Q.7. Assertion and reason questions:
(a) Both Assertion and reason are true and reason is correct explanation of assertion
(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.
(c) If assertion is true but reason is false.
(d) If both assertion and reason are false

i)   **Assertion :** Electric dipole moment is a scalar.
      Reason : $\vec{p} = q(2a)$

ii)   **Assertion :** No two electric lines of force can intersect each other.
      Reason : Because they lie far apart.

iii) **Assertion :** The value of electrostatic force constant depends on nature of medium separating the charges and also on the system of units.
      Reason : In SI, $k = 9 \times 10^9$ Nm^2 C^{-2}. In CGS system $k = 1$.

Q.8. Conceptual and Mental Ability Based Type Questions)
Answer the following questions
Q1. (a) A comb run through one's hair attracts small bits of paper. Why? What happens if the hair are wet or if it is a rainy day?
(b) Ordinary rubber is an insulator. But the special rubber tyres of aircrafts are made slightly conducting. Why is this necessary?
(c) Vehicles carrying inflammable materials usually have metallic ropes touching the ground during motion. Why?
(d) A bird perches on a bare high power line, and nothing happens to the bird. A man standing on the ground touches the same line and gets a fatal shock. Why?

Q2. If two objects repel one another, you know both carry either positive charge or negative charge. How would you determine whether these charges are positive or negative?

Q3. In coulomb's law in electrostatics valid in all situations?

Q4. Fig. shows tracks of three charged particles in a uniform electrostatic field. Give the signs of the three charges. Which particle has the highest charge to mass ratio?
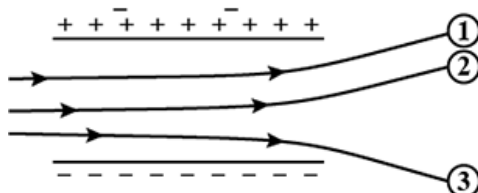
(a) Suppose two particles have identical curved trajectories. Which of the following are necessarily true?
(i) they have same charge   (ii) they have same mass
(iii) the charges have the same sign,   (iv) they have the same e/m ratio.

(b) You are given the initial velocity ϑ of a beam particle and the length of the capacitor l. What other measurement would enable one to find e/m?

Q5. Two charges of magnitude $- 2Q$ and $+ Q$ are located at points (a,0) and (4a,0) respectively. What is the electric flux due to charges through a sphere of radius '3 a' with its centre at the origin.

For recapitulation & solving the assignment the students should refer to their NCERT BOOK, MTG

Part-1

(Case Study Question/Activity based Question)

Instruction: Read the following passage and answer the question no. 1, 2,3,4 & 5.

Case Study- 1

A capacitor is an arrangement for storing a large amount of electric charge and hence electric energy in a small space. The capacitance of an isolated conductor is increased considerably by bringing near it an uncharged conductor connected to Earth. This is the principle of capacitor. Such an arrangement of the two conductors separated by a dielectric medium is said to form a capacitor or condenser depending on the shape of conductors, we get parallel plate capacitor, spherical capacitor and cylindrical capacitor. Capacity of a parallel plate capacitor is $C = A\varepsilon_0 \backslash d$, where A is the area of plates, and d is distance between the two plates of capacitor.

Q.1 **When a dielectric medium of relative permittivity K is inserted between the plates of capacitor than capacitance of the capacitor will**

(a) increases.   (b) decreases   (c) remains constant   (d) zero.

Q.2. **When condensers are joined in parallel then C=**

(a) $C=C_1+C_2$ (b) $C=C_1-C_2$ (c) $C=C_1 \times C_2$ (d) $C=1/C_1.C_2$

Q.3. **When condensers are joined in series then C =**

(a) $C_1 C_2/C_1+C_2$ (b) $C_1+C_2/C_1.C_2$ (c) C_1+C_2 (d) none of above

Q.4. **What happens to capacitance of the condenser when the distance between the plates increased**

(a) increases   (b)decreases   (c) becomes half   (d) doubles

Q.5. **The amount of energy stored between the plates of capacitor**

(a) $CV^2/2$ (b) $QV/2$ (c) $Q^2V/2$ (d) C2V

Part-2

Subject Specific conceptual definitions & Application based Questions

Q.4. **Define the following terms:-**

i)Electrostatics   ii)Electric Dipole moment.
iii)Electric polarization   iv)Electric Capacitance.

Q.5. **Differentiate the following:-**

i) Coulomb Law & Gauss Law.
ii) Electric field line & Equipotential surface.
iii) Electric susceptibility & Polarization density.
iv) Electric flux & Electrostatic shielding.

Q.6. **Application based question:-**

a) What is the flux through a cube if a Charge Q placed at (i) center (ii) at corner (iii) at center of a face

b) What is the capacitance of a parallel plate capacitor if a dielectric slab of dielectric constant 3 and thickness x (x<d) insert between the plate of capacitor oa area of plate A and distance between the plate is d

c) What is the work done to move a 2μC charge from point (5m,0) to point (0,3m) when a charge of 3μC placed at origin

Q.7.   Assertion and reason questions:

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

i)   **Assertion :** A parallel plate capacitor is connected across battery through a key. A dielectric slab of dielectric constant K is introduced between the plates. The energy which is stored becomes K times.
     Reason : The surface density of charge on the plate remains constant or unchanged.

ii) **Assertion :** Two concentric charged shells are given. The potential difference between the shells depends on charge of inner shell.
     Reason : Potential due to charge of outer shell remains same at every point inside the sphere.

iii) **Assertion :** Electric field is discontinuous across the surface of a spherical charged shell.
     Reason : Electric potential is continuous across the surface of a spherical charged shell.

Q.8. Conceptual and Mental Ability Based Type Questions)

Answer the following questions in one word or a sentence.

Q1. Define electric flux. Write its S.I. unit.

Q2. Why are electric field lines perpendicular at a point on an equipotential surface of a conductor?

Q3. A ball of mass 5 g and charge 10-7 C moves from point A, whose potential is 500 V, to point B, whose potential is zero. What is the velocity of the ball at point A if, at point B, it is 25 cm per second?

Q4. What is Gauss the theorem? Write its mathematical form .

Q5. Write the expression for energy loss when a charged capacitor C up to potential V connect with another uncharged identical capacitor in parallel

Q6. Find the potential energy of a system of four particles placed at the vertices square of side 'a' .Also obtain the potential at the center of the square

Q7A capacitor of capacitance 5·00 μF is charged to 24·0 V and another capacitor of capacitance 6·0 μF is charged to 12·0 V. (a) Find the energy stored in each capacitor. (b) The positive plate of the first capacitor is now connected to the negative plate of the second and vice versa. Find the new charges on the capacitors. (c) Find the loss of electrostatic energy during the process. (d) Where does this energy go?

For recapitulation & solving the assignment the students should refer to their NCERT BOOK,MTG

Part-1
(Case Study Question/Activity based Question)

Instruction: Read the following passage and answer the question no. 1, 2 & 3.

Case Study- 1

1. Consider a resistor connected to a source of emf the energy of the source gets dissipated entirely in the form of heat. This phenomenon of the production of heat in a resistor by the flow of current through it is called heating effect of current or Joule heating. When a potential difference is applied across the ends of a conductor, its free electrons get accelerated in the opposite direction of the applied field. The speed of the electrons does not increase beyond a constant drift speed. This is because during the course of their motion electrons collide more frequently with the positive metal ions. The kinetic energy gained by the free electrons during the interval of free acceleration is transferred to the metal ions at the time of collision. The ions vibrate more vigrously i.e. the conductor gets heated. The energy supplied by the source of emf appears as heat. According to Joule's law of heating, the amount heat produced is $H = I^2Rt$ joule. Electric heater, electric iron, electric bulb, electric stove, etc.; are the devices which work on this law and convert electric energy into heat energy.

(i)   If two identical heaters each rated as (1000 W, 220 V) are connected in parallel to 220 V, then the total power consumed is
      (a) 200 W   (b) 2500 W   (c) 250 W   (d) 2000 W

(ii) Two wires having resistances R and 2R connected in parallel, then ratio of heat generated in R and 2 R is
      (a) 3 : 2
      (b) 2 : 1
      (c) 1 : 4
      (d) 4 : 1
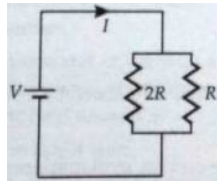
(iii) When 4 equal resistors are connected in series with a *battery*, the dissipate a power of 10 W. What will be the power dissipated through any of them if it is individually connected across the same battery?
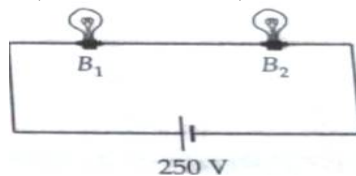   (a) 40 W   (b) 10/3 W   (c) 90 W   (d) 10 W

(iv) 3 identical bulbs are connected in series and these together dissipate a power P. If now the bulbs are connected in parallel, then the power dissipated will be
      (a) P/3.   (b) 3P.   (c) 9P   (d) P/9

(v)   Bulb B1 (100 W – 25v) and bulb B2 (100 W – 200 V) are connected across 250 V. What is potential drop across B2?
      (a) 200 V.
      (b) 250 V.
      (c) 98 V.
      (d) 48 V

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Part-2
Subject Specific conceptual definitions & Application based Questions

Q.4.   Define the following terms:-
      i) Potential difference   ii) Emf   iii) Voltmeter   iv) Internal resistance

Q.5.   Differentiate the following:-
      i) Voltage and ammeter   iii Potential difference and Emf
      ii) Ammeter and Galvanometer   iv) Series and parallel combinations of cel

Q.6.   Application based question:-
      Q1. If 3.2×10^{17} electron pass through a wire in 0.5s. Calculate the current through it. Charge on each electron is 1.6×10^{-19} C.
      Q2. Explain the term 'drift velocity' of electrons in a conductor. Hence obtain the expression for the current through a conductor in terms of 'drift velocity'.

Q3. Define the term current density of a metallic conductor. Deduce the relation connecting current density (J) and the conductivity (σ) of the conductor, when an electric field E, is applied to it

Q4. State Kirchhoff s current law and voltage law

Q.7. Assertion and reason questions:

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

Q.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..

Q.2. Assertion : A larger dry cell has higher emf.

Reason : The emf of a dry cell is proportional to its size.

**Q.3. Assertion :** Voltmeter is connected in parallel with the circuit.

Reason : Resistance of a voltmeter is very large.

## Q.8. Conceptual and Mental Ability Based Type Questions)

Answer the following questions in one word or a sentence.

1. Two heated wires of the same dimensions are first connected in series and then it's parallel to a source

   of supply. What will be the ratio of heat produced in the two cases?

2. The storage battery of a car has an emf of 12V If the internal resistance of the battery is 0.4Ω, what is the maximum current that can be drawn from the battery?

3. Potential difference Vis applied across the ends of copper wire of length l and diameter D. What is the effect on drift velocity of electrons if(a) V is doubled

4. (a) Find the current flowing through each cell in the circuit shown in Fig. 3.181.

   Also calculate the potential difference across the terminal of each cell.
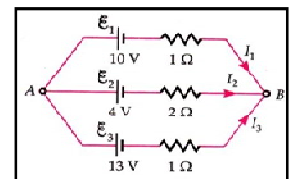
   (b) Find the equivalent resistance of the networks shown in Fig. 3.68 between the points A and B.
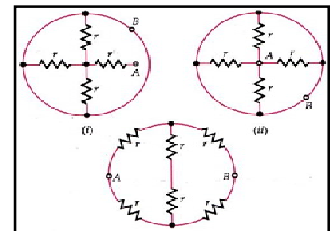
5. A storage battery of emf 8.0 V and internal resistance 0.5Ω is being charged by a 120 V dc supply using a series resistor of 15.5Ω. What is the terminal voltage of the battery during charging? What is the purpose of having a series resistor in the charging circuit?

6. A current of 2A flows through 2Ω resistor when connected across a battery. The same battery supplies a current of 0.5A when connected across a 9Ω resistor. The internal resistance of the battery is _____.

7. A cell of emf 'E' and internal resistance 'r' is connected across a variable load resistor R. Draw the plots of the terminal voltage V versus (i) R and (ii) the current i.

   It is found that when R = 4Ω, the current is 1A when R is increased to 9Ω, the current reduces to 0.5 A. Find the values of the emf E and internal resistance r

8. State Kirchhoff's rules. Use these rules to write the expressions for the currents I_1, I_2 and I_3 in the circuit diagram shown.
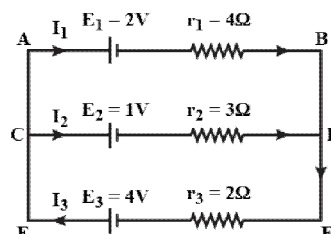
For recapitulation & solving the assignment the students should refer to their NCERT BOOK,MTG
Part-1
(Case Study Question/Activity based Question)
Instruction: Read the following passage and answer the question no. 1, 2 & 3.
Case Study- 1

A galvanometer is a device used to detect current in an electric circuit. It cannot as such be used as an ammeter to measure current in a given circuit. This is because a galvanometer is a very sensitive device. It gives a full scale deflection for a current of the order of Moreover for measuring currents. The galvanometer has to be connected in series, and it has a large resistance this will change the value of current in the circuit. To overcome these difficulties. We connect a small resistance R called shunt resistance, in parallel with the galvanometer coil, so that most of the current passes through the shunt. Now to use galvanometer as a voltmeter, it must draw a very small current, otherwise it will appreciably change the voltage which we are measuring. To ensure this a large resistance R is connected in series with the galvanometer.

Q.1. A sensitive galvanometer like a moving coil galvanometer can be converted into an ammeter or a voltmeter by connecting a proper resistance to it. Which of the following statements is true?
(a) a voltmeter is connected in parallel and current through it si negligible
(b) an ammeter is connected in parallel and potential difference across it is small
(c) a voltmeter is connected in series and potential difference across it is small
(d) an ammeter is connected in series in a circuit and the current through it is negligible.

Q.2. By mistake a voltmeter is connected in series and an ammeter is connected in parallel with a resistance in an electrical circuit. What will happen to the instruments?
(a) Voltmeter is damaged.   (b) Ammeter is damaged
(c) Both are damage.   (d) None of damaged

Q.3. A galvanometer coil has a resistance of 15 Ohm and gives full scale deflection for a current of 4 ma. To convert it to an ammeter of range 0 to 6 A
(a) 10 m ohm resistance is to be connected in parallel to the galvanometer.
(b) 10 m Ohm resistance is to be connected in series with the galvanometer.
(c) 0.1 Ohm resistance is to be connected in parallel to the galvanometer.
(d) 0.1 Ohm resistance is to be connected in series with the galvanometer

Q.4 Two identical galvanometers are converted into an ammeter and a milliammeter. Resistance of the shunt of milliammeter through which the current passes through will be
(a) more   (b) equal   (c) less   (d) zero

(v) A voltmeter has resistance of G ohm and range of **V** volt. The value of resistance used in series to convert it into a voltmeter of range **nV** volt is
(a) nG   (b) (n–1)G   (c) G/n   (d) G/ n-1

.
Part-2
Subject Specific conceptual definitions & Application based Questions

Q.4. **Define the following terms:-**
i) Galvanometer   ii) Ammeter   iii) Voltmeter   iv) List Count

Q.5. **Differentiate the following:-**
i) Voltage and ammeter   ii) Ammeter and Galvanometer
iii) Biot Savart law and Coulomb's law   iv) Gauss law and Ampere circuital law

Q.6. **Application based question:-**
i. Explain Biot-savarts law in term of
    (i) Current density
    (ii) Charge and its velocity.
ii. State Ampere's circuital law and prove this law for a circular path around a long current carrying conductor.

iii. Find the condition under which the charged particles moving with different speeds in the presence of electric and magnetic field vectors can be used to select charged particles of a particular speed.

Q.7. **Assertion and reason questions:**
(a) Both Assertion and reason are true and reason is correct explanation of assertion
(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.
(c) If assertion is true but reason is false.
(d) If both assertion and reason are false

i. **Assertion (A):** On changing the direction of flow of current through a straight .conductor, the direction of a magnetic field around the conductor is reversed.
Reason (R): The direction of magnetic field around a conductor can be given in accordance with left hand thumb rule.

ii. **Assertion (A):** The magnitude of the magnetic field at a point on the axis of a current carrying solenoid is inversely proportional to the current flowing through the solenoid.
Reason (R) : The magnitude of the magnetic field at a point on the axis of a current carrying solenoid is directly proportional to the number of turns per unit length of a solenoid.

iii. **Assertion (A):** A compass needle is placed near a current carrying wire. The deflection of the compass needle decreases when the magnitude of an electric current in the wire is increased.
Reason (R) : Strength of a magnetic field at a point near the conductor increases on increasing the current.

Q.8. **Conceptual and Mental Ability Based Type Questions)**
Answer the following questions in one word or a sentence.

1 Proton and a alpha particle enters in a magnetic field with same kinetic energy perpendicular to magnetic field. Find the ratio of there radius .
2. What is the S.I unit and dimensional formula of magnetic permeability.
3. In a current-carrying coil of radius R and having N turns is opened and made into a straight long wire. Then the magnetic field at a distance R would be how many times of the value of the centre of the coil?
4. Find the relation between the magnetic field at R/2 on-axis, and magnetic field at the centre of the coil. Here R is the radius of the coil.
5. Find the force per unit length on two parallel current-carrying conductors.
6. Find the expression for the resistance connected in parallel to convert a galvanometer to an ammeter.
7. Two circular coil of radius in ratio 2: 3 placed perpendicular to each other at a common center. If current in both coil is same the fine the
   A. Ratio of magnetic field at center
   B. Total magnetic field at center
   C. Ratio of magnetic moment
8. Rang of a galvanometer is 0.5 A and resistance is 10 Ω. What is the value of shunt connected with galvanometer to convert it into a ammeter of range 6A?
9. A current carrying coil of radius R and numbers of terns N convert into a square. Find the ratio of their magnetic moment.

(Section-B)
Lab Manual work

Links from You Tube:
Experiment-1 https://youtu.be/R_j0cFkzDIY
Experiment-2.https://youtu.be/JTvzP7HrMxU
 Experiment-3 https://youtu.be/7gllLt-BOL8
 Experiment-4.https://youtu.be/3jIWlX4dmlI
Experiment-1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current.
Experiment-2.To find resistance of a given wire / standard resistor using metre bridge.
Experiment-3. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
Experiment-4. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.
(Do this work in Practical file)
NOTE: Holiday Homework will not be accepted after the assigned date.

R.E.D. GROUP OF SCHOOLS
SUMMER HOLIDAYS HOMEWORK (SESSION: 2023-24)

CLASS – 12th   **Subject: Chemistry**   **Text Book: NCERT book**

1. **Syllabus Covered up to MAY END**
   - Chapter No.2   Chapter Name- Solutions
   - Chapter No.3   Chapter Name- Electrochemistry.
   - Chapter No.4   Chapter Name- Chemical kinetics
   - Chapter No.10   Chapter Name Haloalkanes and Haloarenes
   - Chapter No. 8   Chapter name: D and f block elements

2. **List of all new concepts taughtup to MAY END**
   - Colligative properties
   - Concentration Terms
   - Abnormal molar mass
   - Electrolysis and its product
   - Electrochemical cell
   - Nernst equation
   - Fuel cell
   - Primary and secondary cell
   - Preparation of Haloalkanes and Haloarenes
   - De-Hydro-halogenation reaction along with Zaitsev rule
   - Nucleophilic substitution reaction and mechanism
   - Physical properties of transition elements
   - Transition elements

3. **Formative Assessment based Homework:**

   - **Section-A-**Creative Project/ Working model/ Inquiry based project.

   - **Section-B-**Diagram and Labeling assessment activity.

   - **Section-C-**Experiment based activity.

   - **Section-D-** Learning and Pre-reading homework.

4. **Summative Assessment based Homework:**

   - **Section-E -** ChapterwiseRevisionassignment (Written, Learning & Pre-reading Homework)

5. **Tools required for doing Homework:**

   1. NCERTBook, Pradeep book

   2. Notebook

   3. A₄Sheets

   4. Resources as per activity

6. **Instruction/Guidelines for Formative Assessment based Homework:**

Sr.No.	Topic	Roll No.
1	**Elevation of boiling point and depression in freezing point**	1 to 10
2	**A Hydrogen oxygen fuel cell**	11 to 20
3	**Various factors affecting rate of reaction**	21 to 30
4	**Nucleophilic substitution reaction of Haloalkanes and Mechanism**	31 to last roll no.

Section-A-Creative Project/ Working model/ Inquiry based project.

1. **To study the elevation of boiling point and depression in freezing point also include examples from real life (Roll no. 1 to 10)**
   Material required: - A4 sheets, A Ruler, NCERT Book, A Tape and a box**.**
   Steps to prepare - understand the concept and explain on A4 sheets.
2. **To build a hydrogen oxygen fuel cell (Roll no 11 to 20)**
   Material required: - A4 sheets, A Ruler, NCERT Book, A Tape and a box.
   Steps to prepare - understand the concept and explain on A4 sheets.
3. **To study various factors affecting rate of reaction (Roll no 21 to 30)**
   Material required: - A4 sheets, A Ruler, NCERT Book, A Tape and a box
   Steps to prepare - understand the concept and explain on A4 sheets.
4. **To study about nucleophilic substitution reaction of Haloalkanes andmechanism (Roll no.31 to last roll no.)**
   Material required: -A4 sheets, A Ruler, NCERTBook, A Tape and a box
   Steps to prepare - understand the concept and explain on A4 sheets.

Section-B- Diagram and Labeling assessment activity.

Draw well labelled diagrams of the following:
- Draw a diagram of electrochemical cell of Cu and Ag
- Draw the graphs of zero first and second order reaction

Section C - Experiment based activity

Name of the Activity: To observe how eggshell is protected by tooth paste and learn how toothreacts to acids and stain

Material Required: egg, toothpaste, coca cola and vinegar.

Procedure: Take four eggs and wash it carefully coat two plain eggs with good amount of toothpaste evenly. And the rest   two eggs remain as it is. That means we are not coating these eggs with any other material.

Pick one plain egg and one toothpaste coated egg and drop them in coke filled glasses respectively and wait for 24 hours to see the outcomes.

Observations:Egg shell is the rich source of calcium carbonate whereas Coca-Cola is acidic in nature. When the plain egg dropped in the coke, the acidic contents immediately start reacting with calcium carbonate and forms stains.

On the other hand, the eggs coated with toothpaste, when dropped in the coke and the fluoride in toothpaste build a protective layer between the eggshells and acidic

Conclusion: Fluoride in toothpaste makes the eggshell stronger and protects it from reacting to acidic contents of coke.

Precautions: Wash the egg carefully so that it does not break.

Section-D-Learning and Pre-reading homework.

Learning Homework: Revise All N. C. E. R. T questions

Pre-Reading Homework: Read Ch.9 coordination compounds

Section-E- Revision assignment.

Part-1

(Case Study Question/Activity based Question)

Instruction: Read the following passage and answer the question

Q. 1   Case Study- 1

The boiling point elevation and the freezing point depression of solutions have a number of practical applications. Ethylene glycol ($CH_2OH.CH_2OH$) is used in automobile radiators as an antifreeze because it lowers the freezing point of the coolant. The same substance also helps to prevent the radiator coolant from boiling away by elevating the boiling point. Ethylene glycol has a low vapour pressure. We can also use glycerol as an antifreeze. In order for boiling point elevation to occur, the solute must be non-volatile, but no such restriction applies to freezing point depression. For example, methanol (CH_3OH), a fairly volatile liquid that boils only at 65°C is sometimes used as antifreeze in automobile radiators.

Answer the following questions given below: -

(i)   Out of the CH_3OH and $C_6H_{12}O_6$, which is a better reagent for depression in freezing point but not for elevation in boiling point?

(ii)   Will the depression in freezing point be same or different, if 0.1 moles of sugar or 0.1 moles of glucose is dissolved in 1 L of water?

(iii)   124 g each of the two reagents glycerol and glycol are added in 5 kg water of the radiators in the two cars. Which one is better for a car? Justify your answer.

OR

If the cost of glycerol, glycol and methanol are the same, then what would be the sequence of the economy to use these compounds as antifreeze?

Part-2

(Subject Specific conceptual definitions & Application based Questions)

Q 2.   Define the following terms:

i) Henry law   ii) Osmosis   iii) Colligative property   iv) Van't Hoff factor

Q 3.   Differentiate the following:

i) Ideal and non-ideal solution   ii) Positive and negative deviation

iii) Minimum and maximum. Boiling azeotrope   iv) Molarity and molality

Q 4.   Application based question:

i)   Calculate the osmotic pressure in Pascal's exerted by a solution prepared by dissolving 1.0 g of polymer of mass 185,000 in 450 mL of water at 37°C.

ii)   19.5 g of CH_2FCOOH is dissolved in 500 g of water. The depression in the freezing point of water observed is 1.0°C. Calculate the Van't Hoff factor and dissociation constant of fluoroacetic acid.

iii) What concentration of nitrogen should be present in a glass of water at room temperature? Assume a temperature of 25°C, a total pressure of 1 atmosphere and mole fraction of nitrogen in air of 0.78. (K_H for nitrogen = 8.42×10^{-17} M/mm Hg).

iv)   What happen when cell is placed in
      a)   0.5%NaCl solution   b)   1.5%NaCl solution

Q 5. Assertion and reason questions:

i)   Assertion: The molarity of a solution in liquid state changes with temperature.

Reason: The volume of a solution changes with a change in temperature.

(a)   Both Assertion and reason are true and reason is correct explanation of assertion.

(b)   Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c)   If assertion is true but reason is false.

(d)   If both assertion and reason are false.

ii)   Assertion: When NaCl is added to water a depression in the freezing point is observed.

Reason: The lowering of the vapour pressure of a solution causes depression at the freezingpoint.

(a)   Both Assertion and reason are true and reason is correct explanation of assertion.

(b)   Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c)   If assertion is true but reason is false.

(d)   If both assertion and reason are false.

Q 6. What is van't Hoff factor for NaCl, Aluminum chloride?

Q 7. What is Anoxia?

Q 8. Why aquatic organism feelsmore comfortable in cold water?

R.E.D. GROUP OF SCHOOLS
Revision Assignment –2

CLASS: 12th   **Subject: Chemistry**
Chapter Name: Electrochemistry   **Chapter No.- 3**

Part-1
(Case Study Question/Activity based Question)

Instruction: Read the following passage and answer the question

Q. 1   Case Study- 1

All chemical reactions involve interaction of atoms and molecules. A large number of atoms/molecules are present in a few gram of any chemical compound varying with their atomic/molecular masses. To handle such large number conveniently, the mole concept was introduced. All electrochemical cell reactions are also based on mole concept. For example, a 4.0 molar aqueous solution of NaCl is prepared and 500 mL of this solution is electrolysed. This leads to the evolution of chlorine gas at one of the electrode. The amount of products formed can be calculated by using mole concept.

The following questions are multiple choice questions. Choose the most appropriate answer:

(i)   The total number of moles of chlorine gas evolved is
      (a) 0.5   (b) 1.0   (c) 1.5   (d) 1.9

(ii)   If cathode is a Hg electrode, then the maximum weight of amalgam formed from this solution is
      (a) 300g   (b) 446 g   (c) 396 g   (d) 256 g

(iii)   The total charge (coulomb) required for complete electrolysis is
      (a) 186000   (b) 24125   (c) 48296   (d) 193000

                                                    OR

(iv)   In the electrolytes, the number of moles of electrons involved are
      (a) 2   (b) 1   (c) 3   (d) 4

Part-2
(Subject Specific conceptual definitions & Application based Questions)

Q 2.   Define the following terms:
(a) Electrolytic cell   (b) Molar conductivity   (c) Kohlrausch law
(d) Fuel cells   (e) Faraday laws

Q 3.   Differentiate the following:
(a)   Galvanic and Electrolytic cell   (b)   Primary and secondary cell

Q 4.   Application based question:
a)   The molar conductivity of a 1.5 M solution of an electrolyte is found to be 138.9 S cm^2 mol^{-1}. Calculate the conductivity of this solution

b)   The conductivity of 0.001 M acetic acid is 4×10^{-5} S/cm. Calculate the dissociation constant of acetic acid, if molar conductivity at infinite dilution for acetic acid is 390 S cm^2/mol.

c)   Calculate the time to deposit 1.27 g of copper at cathode when a current of 2A was passed throughthe solution of $CuSO_4$.

Q 5.   Assertion and reason questions:
Choose the correct one from. Following option
(a)   Both Assertion and reason are true and reason is correct explanation of assertion.
(b)   Both Assertion and reason are true but reason is not a correct explanation of assertion.
(c)   If assertion is true but reason is false.
(d)   If both assertion and reason are false.

Assertion: Conductivity of all electrolytes decreases on dilution.
Reason: On dilution number of ions per unit volume decreases.
Assertion: Λm for weak electrolytes shows a sharp increase when the electrolytic solution is diluted.
Reason: For weak electrolytes degree of dissociation increases with dilution of solution.

Part-1
(Case Study Question/Activity based Question)

Instruction: Read the following passage and answer the question

Q. 1   **Case Study- 1**

The half-life of a reaction is the time required for the concentration of reactant to decrease by half, i.e.,$[A]_t = [A]/2$. For first order reaction, $t_{1/2} = 0.693/k$ this means $t_{1/2}$ is independent of initial concentration. Figure shows that typical variation of concentration of reactant exhibiting first order kinetics. It may be noted that though the major portion of the first order kinetics may be over in a finite time, but the reaction will never cease as the concentration of reactant will be zero only at infinite time.

The following questions are multiple choice question. Choose the most appropriate answer:

Q1.For the half-life period of a first order reaction, which one of the following statements is generally false?

(a) it is independent of initial concentration   (b)It is independent of temperature.

(c) it decreases with the introduction of a catalyst.   (d) None of these.

Q2.The rate constant for a first order reaction is 7.0 x 10^{-4} s^{-1}. If initial concentration of reactant is 0.080 M, what is the half-life of reaction?

(a) 990 s   (b) 79.2 s   (c)12375 s   (d) 10.10 x 10^{-4} s

Q3. A reaction's rate constant is k=3.28 × 10^{-4} s^{-1}. Determine the reaction's order.

(a) First order   (b) Second order   (c) Third order   (d) Fourth order

Q.2   **Define the following terms: -**
a) Activation Energy   c) Pseudo first order reaction
b) Half-life   d) Rate constant

Q3   **Differentiate the following:**

a) Order and Molecularity   b) zero and first order reaction

Q.4   **Application based question: -**

a)   Explain effect of temperature and catalyst on rate of reaction with graphs

b)   A first-order reaction is 50 percent complete in 30 minutes. Calculate the time taken for completion of 87.5 percent of the reaction.

c)   How many times will the rate of the elementary reaction $3X + Y \rightarrow X_2Y$ change if the concentration of the substance X is doubled and that of Y is halved?

Q5   **Assertion and reason questions:**

Choose the correct one from. Following option

(a)If both Assertion and Reason are correct and Reason is correct explanation of Assertion.

(b)If both Assertion and Reason are correct but R is not the explanation of Assertion.

(c)If Assertion is correct Reason is wrong.

(d)If Assertion is wrong Reason is correct.

1.   Assertion: Precipitation of silver chloride occurs instantaneously by mixingaqueous solution of silver nitrate and sodium chloride.

      Reason: Ionic reactions occur very fast

2.   Assertion: Order and molecularity are same.

      Reason: Order is determined experimentally and molecularity is the sum of thestoichiometric coefficient of rate determining elementary step.

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Revision Assignment –4

CLASS: 12th　　　　　　　　　　　　　　　　　　　　　　**Subject: Chemistry**

Chapter Name- Haloalkanes and Haloarenes　　　　　　　**Chapter No.- 10**

Part 1 Case based question

Nucleophilic substitution reactions are of two types; substitution nucleophilic bimolecular (S_N2) and substitution nucleophilic unimolecular (S_N1) depending on molecules taking part in determining the rate of reaction. Reactivity of alkyl halide towards S_N1 and S_N2 reactions depends on various factors such as steric hindrance, stability of intermediate or transition state and polarity of solvent. S_N2 reaction mechanism is favoured mostly by primary alkyl halide or transition state and polarity of solvent, S_N2 reaction mechanism is favoured mostly by primary alkyl halide then secondary and then tertiary. This order is reversed in case of S_N1 reactions.

Answer the following questions given below:

(i) **Which of the following is most reactive towards nucleophilic substitution reaction?**

(a)C_6H_5Cl　　　　　(b)$CH_2=CHCl$ (c)$ClCH_2CH=CH_2$　　(d) $CH_3CH=CHCl$

(ii) **Isopropyl chloride undergoes hydrolysis by**

(a)S_N1 mechanism　　　　　　　　　　　(b)S_N2 mechanism

(c)S_N1 and S_N2 mechanism　　　　　　　(d)neither S_N1 nor S_N2 mechanism

(iii) **The most reactive nucleophile among the following is**

(a)CH_3O^-　　　　　(b)$C_6H_5O^-$　　　　　(c)$(CH_3)_2CHO^-$　　　　　(d)$(CH_3)_3CO^-$

Q2 **Define the following**

a) Ambident nucleophile

b) Wurtz reaction

c) Frankenstein reaction

Q3 **Differentiate the following**

a) SN1 and SN2 Mechanism

Q4 **Application based question: -**

a) How will you bring about the following conversions?

　　i. Ethane to bromo-ethene

　　ii. But-l-ene to but-2-ene

b) A hydrocarbon C_5H_{10} does not react with chlorine in dark but gives a single monochloro compound C_5H_9Cl in bright sunlight. Identify the hydrocarbon.

c) Predict all the alkenes that would be formed by dehydrohalogenation of the following halides with sodium ethoxide in ethanol and identify the major alkene:

　　iii. 1-Bromo-1-methylcyclohexane

　　iv. 2-Chloro-2-methylbutane

d) Out of $C_6H_5CH_2Cl$ and $C_6H_5CHClC_6H_5,$ which is more easily hydrolysed by aqueous KOH.

e) p-dichlorobenzene has higher m.p. and lesser solubility than those of o-and m-isomers. Discuss**.**

Q5 **Assertion and reason questions:**

Choose the correct one from. Following option

(a) **If both Assertion and Reason are correct and Reason is correct explanation of Assertion.**

(b) **If both Assertion and Reason are correct but R is not the explanation of Assertion.**

(c) **If Assertion is correct Reason is wrong.**

(d) **If Assertion is wrong Reason is correct.**

1	Assertion	:	Butan-2-ol is optically active.
	Reason	:	Its mirror image is non-superimposable on it.
2.	Assertion	:	The presence of a nitro group facilitates nucleophilic substitution reaction in aryl halides.
	Reason	:	The intermediate carbanion is stabilized due to presence of the nitro- group.

1.   **Read the passage given below and answer the following questions:**

The transition elements have incompletely filled d-subshells in their ground state or in any of their oxidation states. The transition elements occupy position in between s- and p-blocks in groups 3-12 of the Periodic table. Starting from fourth period, transition elements consists of four complete series: Sc to Zn, Y to Cd and La, Hf to Hg and Ac, Rf to Cn. In general, the electronic configuration of outer orbitals of these elements is $(n - 1) d^{1-10} ns^{1-2}$. The electronic configurations of outer orbitals of Zn, Cd, Hg and Cn are represented by the general formula $(n - 1)d^{10} n^2$. All the transition elements have typical metallic properties such as high tensile strength, ductility, malleability. Except mercury, which is liquid at room temperature, other transition elements have typical metallic structures. The transition metals and their compounds also exhibit catalytic property and paramagnetic behaviour. Transition metal also forms alloys. An alloy is a blend of metals prepared by mixing the components. Alloys may be homogeneous solid solutions in which the atoms of one metal are distributed randomly among the atoms of the other

(i)   Which of the following characteristics of transition metals is associated with higher catalytic activity?

(a) High enthalpy of atomisation   (b) Variable oxidation states

(c) Paramagnetic behaviour   (d) Colour of hydrated ions

(ii)   Transition elements form alloys easily because they have

(a) same atomic number   (b) same electronic configuration

(c) nearly same atomic size   (d) same oxidation states.

(iii)   The electronic configuration of tantalum (Ta) is

(a) $[Xe]4f^0 5d^1 6s^2$ (b) $[Xe]4f^{14} 5d^2 6s^2$

(c) $[Xe]4f^{14} 5d^3 6s^2$ (d) $[Xe]4f^{14} 5d^4 6s^2$

(iv)   Which one of the following outer orbital configurations may exhibit the largest number of oxidation states?

(a) $3d^5 4s^1$ (b) $3d^5 4s^2$

(c) $3d^2 4s^2$ (d) $3d^3 4s^2$

(v)   Which one of the following outer orbital configurations may exhibit the smallest number of oxidation states?

(a) $3d^5 4s^1$ (b) $3d^5 4s^2$

(c) $3d^2 4s^2$ (d) $3d^3 4s^2$

Q2   Define the following

a) Transition elements   b) Paramagnetic substance

Q3 **Application based question: -**

Explain giving reason:

(a) Transition metals and many of their compounds show paramagnetic behaviour.

(b) The enthalpies of atomisation of the transition metals are high.

(C) Describe briefly the following physico-chemical properties of transition metals

    (i) Metallic character   (ii) Complex formation.

(d) Copper (I) is diamagnetic whereas copper (II) is paramagnetic. Explain.

(e) The colour of a solution of $K_2Cr_2O_7$ depends on pH of the solution. Transition elements show variable valencies. What is the reason for it and how is this variation different from that shown by the p-Block elements?

(f) What happens when

(i) $K_2Cr_2O_7$ reacts with acidified solution of KI

(ii) SO_2 is passed through an acidic solution of potassium dichromate

(iii) $K_2Cr_2O_7$ reacts with sodium chloride in the presence of conc. H_2SO_4.

Q4 Assertion and reason questions:

  Choose the correct one from. Following option

  (a) If both Assertion and Reason are correct and Reason is correct explanation of Assertion.

  (b) If both Assertion and Reason are correct but R is not the explanation of Assertion.

  (c) If Assertion is correct Reason is wrong.

  (d) If Assertion is wrong Reason is correct.

  1 **Assertion** : Zinc does not show characteristic properties of transition metals.

     Reason : In Zn outermost shell is completely filled.

  2. **Assertion** : The highest oxidation state of chromium in its compounds is +6.

     Reason : Chromium atom has only six electrons in ns and $(n – 1)$ d-orbitals

(Section-B)

Lab Manual work

Complete the following experiment in practical file

1. To determine the strength and molarity of $KMnO_4$ solution by titration against mohr salt

2. To determine the percentage purity of $KMnO_4$ solution by titration against mohr salt

3. To determine the strength and molarity of $KMnO_4$ solution by titration against oxalic acid

4. To determine the percentage purity of $KMnO_4$ solution by titration against oxalic acid

1. **Syllabus Covered upto MAY END**
   o   Chapter No.- 02 Chapter Name- Sexual Reproduction in Flowering Plants
   o   Chapter No.- 03 Chapter Name- Human Reproduction
   o   Chapter No.- 04 Chapter Name- Reproductive Health
   o   Chapter No.- 05 Chapter Name- Principles of Inheritance and Variation

2. **List of all new concepts taught upto MAY END**
   o   Structure of flower   o   Male Reproductive   o   Contraceptive devices
   o   Microsporogenesis   system   o   Mono and Dihybrid cross
   o   Pollination   o   Female Reproductive   o   Linkage and Recombination
   o   Double fertilization   system

3. **Formative Assessment based Homework:**
   o   **Section-A-**Creative Project/ Working model/ Inquiry based project.
   o   **Section-B-**Diagram and Labeling assessment activity.
   o   **Section-C-**Experiment based activity.
   o   **Section-D-** Learning and Pre-reading homework.

4. **Summative Assessment based Homework:**
   o   **Section-E- Chapter-wise Assignments**

5. **Tools required for doing Homework:**
   o   NCERT Text Book, MTG book   o   A$_4$Sheets, Internet
   o   Notebook   o   Resources as per activity

6. **Instruction/Guidelines for Formative Assessment based Homework:**
   o   **Section-A-Creative Project/ Working model/ Inquiry based project.**

Topic	Roll No.
Collection and Observation of different types of flower having different types of pollination.	1 to 8
Showing T.H. Morgan experiment with the help of thermocol sheet or on chart paper to explain Linkage & Recombination.	9 to 16
To study the infertility and its causes and treatment	17 to 24
To study and Extract the DNA from Banana	25 to 32

   I.   **(Roll No. 1 to 8) Topic:** Collection and Observation of different types of flower having different types of pollination.
   - **Materials Required:** Different types of flower & thermocol sheet.
   - **Steps to prepare:**
     ❖ Collection of different types of flower from surrounding area.
     ❖ Observation of flower.
     ❖ Pasting of flower & Thermocol sheet
     ❖ Recording of observation.

   II. **(Roll No. 9 to 16) Topic:** Showing T.H. Morgan experiment with the help of thermocol sheet or on chart paper to explain Linkage & Recombination.
   - **Materials Required:** Markers, Cutter & thermocol sheet.
   - **Steps to prepare:**
     ❖ Cut small pieces of thermocol sheet of approximately 3-4 cm.
     ❖ Write down different genes involve in Morgon experiment on the thermocol sheet.
     ❖ Paste all pieces on rectangular large thermocol sheet.

   III. **(Roll No. 17 to 24) Topic:** To study the infertility and its causes and treatment.
   - **Materials Required:** chart paper, markers, pencil, eraser, scale etc.
   - **Steps to prepare:**
     ❖ Find out the different causes of infertility in Human male & female and methods of ART.
     ❖ Write down different factors involved in the process.
     ❖ Represent all the factors and methods of treatment on a chart paper.

IV. **(Roll No. 25 to 32)** **Topic:** To study and Extract the DNA from Banana
- **Materials Required:** Two clear glasses/cups
  - ❖ Sealable plastic bag
  - ❖ Banana
  - ❖ Blunt knife and teaspoon
  - ❖ Plate/chopping board
  - ❖ Measuring jug
  - ❖ Either a colander/sieve/tea strainer
  - ❖ Either a coffee filter/dish cloth/paper towel
  - ❖ Black paper/card/black t-shirt/black jumper
  - ❖ Vodka/surgical spirit/rubbing alcohol (keep in freezer)
  - ❖ 4 teaspoons salt
  - ❖ 2 teaspoons washing up liquid
  - ❖ Warm water
  - ❖ chart paper, markers, pencil, eraser, scale.
- **Steps to prepare:**
  - ❖ Step 1: Chop up the banana.
  - ❖ Place the banana onto a plate. Use the knife to chop it up.
  - ❖ Step 2: Put the banana into a bag.
  - ❖ Place the banana pieces into a sealable plastic bag.
  - ❖ Step 3. Squash the banana.
  - ❖ Close the bag and gently squash the banana until smooth.
  - ❖ Step 4: Add salt to warm water
  - ❖ Fill the glass half full with warm water. Add the salt, then stir with a teaspoon until dissolved.
  - ❖ Step 5: Add washing up liquid
  - ❖ Add washing up liquid to the glass and stir.
  - ❖ Step 6: Pour into the bag.
  - ❖ Pour into the bag. Close the bag and squash gently for 10 minutes.
  - ❖ Step 7: Sieve
  - ❖ Put the sieve on top of the jug. Place the coffee filter in the sieve and pour the contents of the bag into it. Let the liquid drain through. This can take a while!
  - ❖ Step 8: Pour the drained liquid into a glass.
  - ❖ Pour the drained liquid into a glass. Place on top of the black card. Make sure you are wearing safety glasses!
  - ❖ Step 9: Ask an adult to carefully add the alcohol
  - ❖ Have an adult pour the alcohol down the side into your glass. Watch the bottom of your cup! White strands which look like cotton should appear. This is your banana DNA – the instructions to make a banana!
  - ❖ Step 10: Pick out the DNA!
  - ❖ Write down different factors involved in the process.
  - ❖ Represent all the steps on a chart paper.

o **Section-B- Diagram and Labeling assessment activity.**
Draw well labelled diagrams of the following:
- Anatropous ovule
- Male reproductive system
- Female reproductive system
- Mature Human Sperm
- Menstrual cycle
- Vasactomy & Tubectomy
- Embryo sac
- Ovum
- Sectional view of Seminiferous tubule
- Sectional view of mammary gland

o **Section-C-Experiment based activity.**
- One activity which can be performed at home with parental supervision.
  - ➢ **Name of the Activity**: Showing Dihybrid cross by using different colour of marbles and calculation of phenotypic ratio of F2 generation.
  - ➢ **Material Required**: Marbles of yellow and green colour having round & wrinkled shape.
  - ➢ **Procedure**: Follow steps of dihybrid cross of Mendal experiment up to F2 generation.
  - ➢ **Observations**: Observe the colour of progeny in F2 generation.
  - ➢ **Conclusion**: Find out Phenotypic ratio of F2 generation.
  - ➢ **Precautions**: Avoid mixing of marbles.

o **Section-D-Learning and Pre-reading homework.**
- **Learning Homework:** Learn Q. No. 4 to 13 of chapter 5, NCERT BOOK.
  - Learn Q. No. 3 to 7 of chapter 4, NCERT BOOK.
  - Learn Q. No. 7 to 12 of chapter 3, NCERT BOOK.
  - Learn Q. No. 2 to 9 of chapter 2, NCERT BOOK.
- **Pre-Reading Homework:** Read Page no. 126 to 141 of NCERT BOOK, MTG.

o **Section-E-Revision assignment.**

For recapitulation & solving the assignment the students should refer to their NCERT BOOK, MTG

Part-1
(Case Study Question/Activity based Question)

Instruction: Read the following passage and answer the following questions.

Q.1.   Case Study- 1

The pollen grains or microspores are the male reproductive bodies of a flower and are contained in the pollen sac or microsporangia. Each pollen grain consists of a single microscopic cell, possessing two coats: the exine and the intine. The exine of a pollen grain is made of chemically stable material. Because of this, pollen grains are often very well preserved for thousands of years in soil and sediments.

(i)   One of the most resistant biological material material present in the exine of pollen grain is
         (a) pectocellulose   (b) sporopollenin   (c) suberin   (d) cellulose.

(ii)   The exine possesses one or more thin places known as
         (a) Raphe   (b) Germ pores   (c) Hilum   (d) Endothecium

(iii)   What is the function of germ pore?
         (a) Emergence of radical   (b) Absorption of water for seed germination
         (c) Initiation of pollen tube   (d) All of these

(iv)   What is the key advantage to the plant for having such strong pollen grain walls?
         (a) It protects the vital genetic material in the pollen grain.
         (b) It allows pollen to serve as a valuable fossil record for the study of ancient plants.
         (c) It prevents the pollen tube from growing out before the pollen grain reaches the stigma of a compatible species.
         (d) It gives weight to the pollen grain, allowing it to cling better to the body surfaces of insect pollinators.

(v)   The number of germ pores in dicots and monocots respectively are
         (a) One and three   (b) Three and two   (c) Two and three   (d) Three and one

Part-2

Subject Specific conceptual definitions & Application based Questions

Q.2.   Define the following terms:-

   i) Microsporogenesis ii) Xenogamy   iii) Tapetum   iv) Autogamy

Q.3.   Differentiate the following:-

   i) Self pollination & Cross pollination
   ii) Complete flower & Incomplete flower
   iii) Tapetum & Epidermis of anther lobe
   iv) Microsporogenesis & Megasporogensis

Q.4.   Application based question:-

   i) Explain the phenomenon of double fertilization?
   ii) Draw a labelled diagram of a typical anatropous ovule.
   iii) How do the pollen grains of vallsineria protect themselves?
   iv) Differentiate between the two cells enclosed in a mature male gametophyte of an angiosperm.

Q.5. **Assertion and reason questions:**

i) Assertion: Ovary forms fruit after fertilization.

Reason: Ovary forms parthenocarpic fruit without fertilization.

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

ii) Assertion: Largest cell of embryo sac is central cell.

Reason: It consists of a fused nuclei.

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

iii) Assertion: Megaspore mother cell divides meiotically to produce four spores.

Reason: Megaspore mother cells are haploid and megaspore is diploid.

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

Q.6. <u>Conceptual and Mental Ability Based Type Questions)</u>

Answer the following questions in one word or a sentence.

1. What is meant by monosporic development of female gametophyte?

2. Why apple called a false fruit? Which part(s) of the flower forms the fruit?

3. How is it possible in oxalis and viola plants to produce assured seed- sets even in the absence of pollinators?

4. What is bagging technique?

5. What are chasmogamous flowers?

(Section-B)

Lab Manual work

Links from You Tube:

https://youtu.be/qGLo_cUMlHU

Experiment-1 Study of pollen germination.

(Do this work in Practical file)

NOTE: Holiday Homework will not be accepted after the assigned date.

For recapitulation & solving the assignment the students should refer to their NCERT BOOK, MTG

Part-1

(Case Study Question/Activity based Question)

Instruction: Read the following passage and answer the following questions.

Q.1. Case Study- 1

Oogenesis is the process of formation of ovum in ovaries. It consists of three phases: multiplication, growth and maturation . Oogenesis is controlled by hormones GnRH, LH, FSH. GnRH secreted by the hypothalamus stimulates the interior lobe of pituitary gland to secrete LH and FSH.

(i) What is the function of hormone FSH?

    (a) It inhibits the formation of estrogen.   (b) It induces the release of secondary oocyte

    (c) It stimulates the growth of Graafian follicles.   (d) It causes ovulation.

(ii) Which hormone induces the rupture of the mature Graafian follicle?

    (a) Follicle stimulating hormone   (b) Gonadotropin releasing hormone

    (c) Progesterone   (d) Luteinising hormone

(iii) Which cell division is involved in the formation of secondary oocyte?

    (a) Mitosis   (b) Meiosis   (c) Amitosis   (d) Meiosis II

(iv) Identify the function(s) of LH.

    (a) (A) and (B) only   (b) (B) and (C) only   (c) (A), (C) and (D) only   (d) (B) only

Part-2

Subject Specific conceptual definitions & Application based Questions

Q.2. Define the following terms:-

    i) Spermatogenesis   ii) Secretory phase   iii) Spermiation   iv) Vulva

Q.3. Differentiate the following:-

    i) Spermiogenesis & Spermiation

    ii) Spermatogenesis & Oogenesis

    iii) Menstrual phase & Follicular phase

    iv) Tertiary follicle & Graffian follicle

Q.4. Application based question:-

    i) Write the effect of high concentration of LH on a mature Graffian follicle?

    ii) Draw a diagrammatic labelled sketch of a sectional view of human ovary?

    iii) What is amniocentesis? How is it performed?

    iv) What is menstrual cycle? Explain the various stages of menstrual cycle?

Q.5. **Assertion and reason questions:**

i) Assertion: The increase in progesterone level expert positive feedback on GnRH.

Reason: The rising level of progesterone stimulate production of FSH and LH.

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

ii) Assertion: The region inside the seminiferous tubules contain Leydig cell.

Reason: Leydig cells synthesise and secrete androgens.

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

iii) Assertion: The uterus is shaped like an inverted pear.

Reason: The inner glandular layer lining the uterine cavity is called as myometrium.

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

Q.6. **Conceptual and Mental Ability Based Type Questions)**

Answer the following questions in one word or a sentence.

1. Define spermiogenesis. Where does it occur?

2. Define foetal ejection reflex?

3. At what stage a primary oocyte is suspended at?

4. Name the hormones produced during pregnancy in human females? Mention their source organ?

5. Name the stages when oogenesis and spermatogenesis initiate in human female and male

(Section-B)

Lab Manual work

Links from You Tube:

https://youtu.be/_r3kFN6TmOs

Experiment-1 Study of permanent slides of T.S. of Testis & Ovary.

(Do this work in Practical file)

NOTE: Holiday Homework will not be accepted after the assigned date.

For recapitulation & solving the assignment the students should refer to their NCERT BOOK, MTG
Part-1
(Case Study Question/Activity based Question)
Instruction: Read the following passage and answer the following questions

Q.1. Case Study- 1

Over population causes number of family problems. Strategies like birth control methods help to control population causes explosion. Natural methods of birth control do not involve medications or devices to prevent pregnancy but rather rely on behavioral practices and/or making observations about menstrual cycle.

(i) Which method helps in contraception by temporary absence of sex?

    (a) Coitus interruptus   (b) Withdrawal method

    (c) Rhythm method   (d) Lactational amenorrhea method

(ii) Assertion: The effectiveness of coitus interruptus method is limited.

    Reason: Some sperms may pass into vagina before ejaculation.

    (a) Both assertion and reason are true and reason is the correct explanation of assertion.

    (b) Both assertion and reason is the correct explanation of assertion.

    (c) Assertion is true but reason is false.

    (d) Both assertion and reason are false.

(iii)Why is lactational amenorrhea effective for about 4-5 months after parturition?

    (a) Ovulation occurs on about the 14th day of menstruation.

    (b) Ovulation does not occur during intense lactation.

    (c) This method inhibits mobility of sperms.

    (d) Both (b) and (c)

(iv)Which fact is not the basis of periodic absence method of birth control?

    (a) Ovum remains alive for about 1-2 days.

    (b) Ovulation occurs on about 14th day of menstruation.

    (c) Sperms survive for about 3 days

    (d) Alternation in uterine Endometrium

(v) On which days of menstrual cycle should coitus be avoided to prevent fertilisation?

    (a) 10-17   (b) 6-13   (c) 1-5   (d) 15-28

Part-2
Subject Specific conceptual definitions & Application based Questions

Q.2. Define the following terms:-
    i) RCH   ii) Maternal mortality rate   iii) Intra uterine transfer   iv) ICSI

Q.3. **Differentiate the following:-**

i) ZIFT & GIFT

ii) Maternal mortality rate & Infant mortality rate

iii) RCH & STD

iv) ART & Sterlization

Q.4. **Application based question:-**

i) Why tubecotomy considered a contraceptive method?

ii) Mention any four characteristics that an ideal contraceptive should have?

iii) What is amniocentesis? How is it performed?

iv) 'Intracytoplasmic Sperm Injection' and 'Gamete Intra-Fallopian Transfer' are two assisted reproductive Technologies. How is one different from the other?

Q.5. **Assertion and reason questions:**

i) Assertion: The shape of uterus is like a inverted pear.

Reason: The inner glandular layer that lines the uterine cavity is called myometrium.

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

ii) Assertion: Natality increases both population density and population size.

Reason: Natality increases the number of individuals in an area by birth.

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

iii) Assertion: Periodic abstinence is a method in which couples avoid from 17 to 28 days of menstrual cycle.

Reason: It is a very effective and 100 percent sure method of birth control

(a) Both Assertion and reason are true and reason is correct explanation of assertion

(b) Both Assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true but reason is false.

(d) If both assertion and reason are false

Q.6. Conceptual and Mental Ability Based Type Questions)

Answer the following questions in one word or a sentence.

1. Define in vitro fertilization?

2. Expand IUI? What is it?

3. Why are MTPs carried out?

4. What is vasectomy?

5. Describe the lactational amenorrhea method of birth control?

(Section-B)
Lab Manual work

Links from You Tube:

………………………………………

Experiment-1

(Do this work in Practical file)

NOTE: Holiday Homework will not be accepted after the assigned date.

For recapitulation & solving the assignment the students should refer to their NCERT BOOK, MTG

Part-1

(Case Study Question/Activity based Question)

Instruction: Read the following passage and answer the following question

Q.1. Case Study- 1

Prashant wanted to find the genotype of a pea plant bearing purple coloured flowers in his kitchen garden. For this, he crossed purple flowered plant with white flowered plant. As a result, all plants which were produced had purple flower only. Upon selfing these plants, 75 purple flower plants and 25 white flower plants were produced. Now, he can determine the genotype of a purple flowered plant by crossing it with a white flowered plant.

(i) Which of the following cannot be derived from the crosses done by Prashant?
   (a) Mendel's law of segregation   (b) Mendel's law of dominance
   (c) Mendel's law of independent assortment (d) Both (a) and (c)

(ii) To determine the genotype of a purple flowered plant, Prashant crossed this plant with a white flowered plant, this cross represents a
   (a) Test cross   (b) Dihybrid cross   (c) Reciprocal cross   (d) Trihybrid cross

(iii) In white flowered plant, allele is expressed in
   (a) Heterozygous condition only
   (b) Homozygous condition only
   (c) F3 generation
   (d) Both homozygous and heterozygous condition.

(iv) The character, i.e., purple colour of the flowers that appeared in the first filial generation is called
   (a) Recessive character   (b) Dominant character
   (c) Holandric character   (d) Lethal character

(v) Assertion: A geneticist crossed two plants and he obtained 50% purple flowered plants and 50% white flowered plants.
   Reason: Purple coloured flower plant might be heterozymgous.
   (a) Both assertion and reason are true and reason is the correct explanation of assertion.
   (b) Both assertion and reason is the correct explanation of assertion.
   (c) Assertion is true but reason is false.
   (d) Both assertion and reason are false.

Part-2
Subject Specific conceptual definitions & Application based Questions

Q.4. Define the following terms:-
   i) Back cross   ii) pleiotropy   iii) law of dominance   iv) linkage

Q.5. Differentiate the following:-
   i) Law of independent assortment & law of segregation
   ii) Test cross & outcross
   iii) Turner's syndrome & Klinefelter's syndrome.
   iv) point mutation & frameshift mutations.

Q.6. **Application based question:-**
    i) Name the metabolism or enzyme that is impaired in phenylketonuria?
    ii) Why haemophilia generally observed in human males? Explain the conditions under which a human female can be haemophilic.
    iii) Inheritance pattern of flower colour in garden pea plant and snapdragon differs. Why is this difference observed? Explain showing the crosses upto F2 generation.
    iv) Explain sex determination in grasshopper and birds?

Q.7. **Assertion and reason questions:**
    i) Assertion: Gametes receive only one allele of a gene.
     Reason: During gamete formation mitosis takes place leads to the formation of haploid cells.
     (a) Both Assertion and reason are true and reason is correct explanation of assertion
     (b) Both Assertion and reason are true but reason is not a correct explanation of assertion.
     (c) If assertion is true but reason is false.
     (d) If both assertion and reason are false
    ii) Assertion: Genes pass from one generation to another generation
     Reason: The unit of inheritance are genes.
     (a) Both Assertion and reason are true and reason is correct explanation of assertion
     (b) Both Assertion and reason are true but reason is not a correct explanation of assertion.
     (c) If assertion is true but reason is false.
     (d) If both assertion and reason are false
    iii) Assertion: Behaviour of chromosomes is parallel to genes.
      Reason: Genes are located on chromosomes.
     (a) Both Assertion and reason are true and reason is correct explanation of assertion
     (b) Both Assertion and reason are true but reason is not a correct explanation of assertion.
     (c) If assertion is true but reason is false.
     (d) If both assertion and reason are false

Q.8. <u>**Conceptual and Mental Ability Based Type Questions**</u>)
    Answer the following questions in one word or a sentence.

    1. Which law of inheritance of Mendel is universally acceptable without any exception? State the law.

    2. AaBb was crossed with aabb. What would be the phenotypic ratio of the progeny? Mention the term used to donate this kind of cross.

    3. On what basis of skin colour in humans considered polygenic?

    4. Write the types and location of the genes causing thalassemia in humans.

    5. Name such a trait each, in humans and drosophila, whose genes are present on X- chromosome.

(Section-B)
Lab Manual work

Links from You Tube:
………………………………………
Experiment-1
(Do this work in Practical file)

NOTE: Holiday Homework will not be accepted after the assigned date.

R.E.D. GROUP OF SCHOOLS
Summer Holidays Homework (Session: 2023-24)
Class-XII

Subject- Phy. Education   **Text Book: Phy. Education (Ratnasagar)**

"Learning is the only thing the mind never exhausts, never fears and never regrets"
The long awaited Summer Vacation is here. It allows you to rejuvenate and catch up on hobbies and other interests that are best pursued with time. However, it is important to strike balance between leisure and learning. To enhance your learning, we have planned Home Assignment, to keep your skill sharp and concepts clear. It will help you develop vital skills such as independent research.

As it is well recognized that R.E.D. Sr. Sec. School not only focuses on academics but lay equal importance on Co-Scholastic Competencies. The school also desires you to adhere to the following guidelines for a fulfilling break:

- Read newspapers and magazines to gather knowledge of different processes used in physical education related industries and technological applications.
- Develop process-skills and problem- solving abilities and application of physical education
- The Holidays home work must be done in a very neat and presentable manner. Questions must be done in the given sequence.
- The child will be assessed for the presentation, neatness, completion of all the given questions and timely submission.
- Make sure that all syllabus done till June must be revised thoroughly as you begin your Pre-Mid from July.
- The revision assignments will help you prepare for Pre-Mid in the month of July.
- For the project work, wherever it is mentioned, strictly adhere to the instructions.
- Holiday Home work is a part of Internal Assessment and Practical Exam Assessment.

Syllabus Covered:
Chapter-1: Management of Sporting Events
Chapter-2: Children and women in sports
Chapter-3: Yoga as preventive measure for Lifestyle Disease
Chapter-4: Physical education and sports for (CWSN) Divyang

Daily Time to be spent for doing H.W (Hours per day): 45 minutes.

Tools Required
Physical Education Book, Notebook, Pen, Chart, Pencil.

Home Work Assessment by Parents
Parents will match the quantity of homework given with the index of student's homework notebook and certify it on the last page.

Date of Submission: 03-07-2023

Checkpoints for the Assessment of Home Work:

Sr. No.	Checkpoints for Assessments of Home work	Remarks
1	Index	Updated /Not updated
2	Quality of Handwriting presentation	Good /Avg./ Poor
3	Quality of creative writing	Good /Avg./ Poor
4	Quality of Project work	Good /Avg./ Poor
5	Quality of Reading & Comprehension skills	Good /Avg./ Poor
6	Whether Learning work done or not	Done/ Not done
7	Whether H.W is fully Completed	Yes/ No
8	Whether H.W is partly Pending	Yes/ No

R.E.D. GROUP OF SCHOOLS
Holiday Homework Assignment – 1

Class: XII   **Subject: Phy. Edu.**
Ch. Name: Management of Sporting Events   **Ch. No.: 1**

General Instruction:

1. **All questions are compulsory.**
2. **The assignment consists of 14 questions and all are compulsory.**
3. **Question 1-8 carry 1 mark each and are Multiple Choice Questions.**
4. **Questions 9 carry 2 marks each and shall not exceed 40-60 words.**
5. **Questions10-11 carry 3 marks each and shall not exceed 80 -100 words.**
6. **Questions 12 carry 4 marks each and shall not exceed 100-150 words.**
7. **Questions 13 - 14 carry 5 marks each and shall not exceed 150-200 words.**
8. **Summer Holiday work should be written in a fair Note book.**

Section - A

Q.1 Which committee is responsible for selecting the officials involved in a sports event?
   (a) Reception Committee   (b) Boarding and lodging Committee
   (c) Committee for Officials   (d) Equipment Committee

Q.2 In _____, Greater number of matches are played by the teams, Every teams gets a rank according to his ability.
   (a) Knockout   (b) League   (c) Seeding   (d) Special seeding

Q.3 Assertion (A):   In Knock out tournament minimum number of officials is required in organizing tournaments.
   Reason (R):   In Knock out tournament the team once defeat immediately eliminated from the tournament.
   Codes:
   (a) Both A and R are true, but R is not the correct explanation of A
   (b) Both A and R are true, and R is the correct explanation of A
   (c) A is true, but R is false
   (d) A is false, but R is true

Q.4 Which of the following is not a category of run?
   (a) Run for fun   (b) Run for unity
   (c) Run for identity   (d) Run for specific causes

Q.5 Which Sports competition is organized within the school its self.
   (a) Intramural   (b) Extramural   (c) Interstate   (d) None of these

Q.6 What is the basic function of management is?
   (a) Controlling   (b) Budgeting   (c) Planning   (d) Organizing

Q.7 What is the another name of League tournaments?
   (a) Knock out Tournaments   (b) Round Robin Tournaments
   (c) Combination Tournaments   (d) None of these

Q.8 How many byes will be given if there are 22 teams?
   (a) 10   (b) 12   (c) 11   (d) 6

Section – B

Q.9   Differentiate between Intramural and Extramural.

Section – C

Q.10   Write a short note on Planning and Management.

Q.11   Draw a fixture of 13 Teams on the basis of knockout fixture with four teams seeded.

Section – D

Q.12   Write a short Note On Specific Sports Program me: Run For Unity, Run For Fun, Sports Days.

Section – E

Q.13   List down the Advantages and Disadvantages of Knock out and League Tournaments.
Q.14   Explain the Various committees and their Responsibilities.

R.E.D. GROUP OF SCHOOLS
Holiday Homework Assignment – 2

Class: XII   **Subject: Phy. Edu.**
Ch. Name: Children and women in sports   **Ch. No.: 2**

General Instruction:

1. **All questions are compulsory.**
2. **The assignment consists of 14 questions and all are compulsory.**
3. **Question 1-8 carry 1 mark each and are Multiple Choice Questions.**
4. **Questions 9 carry 2 marks each and shall not exceed 40-60 words.**
5. **Questions10-11 carry 3 marks each and shall not exceed 80 -100 words.**
6. **Questions 12 carry 4 marks each and shall not exceed 100-150 words.**
7. **Questions 13 - 14 carry 5 marks each and shall not exceed 150-200 words.**
8. **Summer Holiday work should be written in a fair Note book.**

Section – A

Q. 1. Which one of the following is not a type of spinal curvature deformity?
          (a) Kyphosis   (b) Round shoulder   (c) Scoliosis   (d) Lordosis
Q. 2. The inward curvature of the spine is commonly known as
          (a) Kyphosis   (b) Round shoulder   (c) Scoliosis   (d) Lordosis
Q. 3. What is the leading risk factor for global deaths according to WHO?
          (a) Lack of Physical activity   (b) Poor Nutrition
          (c) Smoking   (d) Excess Physical activity
Q. 4. Which exercise should be taken into consideration in order to improve flat foot deformity?
          (a) Avoid high heeled shoes
          (b) Avoid carrying heavy weight
          (c) Don't force babies to start walking at a very early stage
          (d) All of the above
Q. 5. Which deformity is just opposite to knock knee position?
          (a) Round shoulder   (b) Flat foot   (c) Knock knees   (d) Scoliosis
Q. 6. Amenorrhoea is a condition of _____.
          (a) Irregular menstrual cycle   (b) Absence of menstrual cycle
          (c) Normal menstrual cycle   (d) None of these
Q. 7. Assertion (A):   Scoliosis is much tougher to treat with corrective exercise.
          Reason (R):   One must perform abdominal strengthening exercise.
          Codes:
          (a) Both A and R is true, but R is not the correct explanation of A.
          (b) Both A and R is true, and R is the correct explanation of A.
          (c) A is true, but R is false.
          (d) A is false, but R is true.
Q. 8. A healthy normal menstrual period is called____.
          (a) Menarche   (b) Menopause   (c) 28 days cycle   (d) None of these

Section – B

Q. 9. Differentiate between anorexia nervosa and bulimia nervosa

Section – C

Q. 10. Discuss female athlete's triad in detail.
Q. 11. Discuss about Special Consideration in details.

Section – D

Q. 12. Discuss menstrual dysfunction and its types .

Section – E

Q. 13. What is good posture? Explain its causes and Advantages of Correct posture.
Q. 14. Explain the Common postural deformities in details.

R.E.D. GROUP OF SCHOOLS
Holiday Homework Assignment – 3

Class: XII   **Subject: Phy. Edu.**

Ch. Name: Yoga as Preventive Measure for Lifestyle Disease   **Ch. No.: 3**

General Instruction:
1. **All questions are compulsory.**
2. **The assignment consists of 14 questions and all are compulsory.**
3. **Question 1-8 carry 1 mark each and are Multiple Choice Questions.**
4. **Questions 9 carry 2 marks each and shall not exceed 40-60 words.**
5. **Questions10-11 carry 3 marks each and shall not exceed 80 -100 words.**
6. **Questions 12 carry 4 marks each and shall not exceed 100-150 words.**
7. **Questions 13 - 14 carry 5 marks each and shall not exceed 150-200 words.**
8. **Summer Holiday work should be written in a fair Note book.**

Section –A

Q. 1.   Neeti along with her father was regular at District Park in early morning. She realized that most of the children are obese. She along with her few classmates wanted to help those children. She discussed with her physical education teacher and the Principal of the school. School decided to organize awareness rally for the neighbourhood.

    A.   Obesity causes

        (a) Underweight   (b) Diabetes

        (c) Back pain   (d) Both b & c

    B.   Which of the following Asana (posture) is not used for curing obesity.

        (a) Ardhmatsyendrasana   (b) Vajrasana

        (c) Parvatasana   (d) Trikonasana

    C.   Choose the Asana which is used for curing obesity

        (a) Sukhasana   (b) Shavasana

        (c) Vajrasana   (d) Shalabhasana

Q. 2.   Which asana is also known as Diamond Pose.

    (a) Tadasana   (b) Vahrasana

    (c) Shalavhasana   (d) Shavasana

Q. 3.   Which of the following factors does not cause of obesity?

    (a) Genetic   (b) Frequency of eating

    (c) Psychological factor   (d) none of these

Q. 4.   Which asana is helpful in maintaing normal blood pressure?

    (a) Shavasana   (b) Padmasana

    (c) Shalavasana   (d) Vakrasana

Q. 5.   Arthritis is condition that causes inflammation and Pain in the

    (a) Lungs   (b) Eyes

    (c) Joints   (d) Stomach

Q. 6.   Ramya's mother was suffering from leg and back pain. She has undergone many treatments, but still, she is suffering from the problem. At last she decided to meeta yoga instructor and discussed her problem. He prescribed some asana.

    A. Which of the following is suitable for her mother's problem?

        (a) Vakrasana   (b) Shalabhasana

        (c) Tadasana   (d) Ardhmatsyendrasana

    B. Which of the following asana helps to prevent obesity?

        (a) Vajrasana   (b) Chakrasana

        (c) Sukhasana   (d) Matsyasana

    C. Which among this is a sitting asana?

        (a) Ardhmatsyendrasana   (b) Trikonasana

        (c) Ardha Chakarasana   (d) Hastasana

Q. 7.   Symptoms such as coughing, wheezing, shortness of breath and/or chest tightness are caused in patients suffering from:

(a) Diabetes   (b) Obesity

(c) Asthma   (d) Back pain

Q. 8.   In which disease, blood glucose, or blood sugar levels are too high.

(a) Obesity   (b) Diabetes

(c) Hypertension   (d) Sinusitis

Section – B

Q. 9.   Explain about yoga as preventive measure in Details.

Section – C

Q. 10.   Write the three benefits of sheetali Pranayama.

Q. 11.   Discuss about Special Consideration in details.

Section – D

Q. 12.   What is yogmudra? Write any three benefits of Yogmudra in brief.

Section –E

Q. 13.   What is hypertension? Draw a stick diagrams of two any asana recommended to control Obesity and explain their procedure.

Q. 14.   Explain the Common postural deformities in details.

R.E.D. GROUP OF SCHOOLS

Holiday Homework Assignment – 4

Class: XII   **Subject: Phy. Edu.**

Ch. Name: Physical education and sports for (CWSN) Divyang   **Ch. No.: 4**

General Instruction:

1. All questions are compulsory.
2. The assignment consists of 14 questions and all are compulsory.
3. Question 1-8 carry 1 mark each and are Multiple Choice Questions.
4. Questions 9 carry 2 marks each and shall not exceed 40-60 words.
5. Questions10-11 carry 3 marks each and shall not exceed 80 -100 words.
6. Questions 12 carry 4 marks each and shall not exceed 100-150 words.
7. Questions 13 - 14 carry 5 marks each and shall not exceed 150-200 words.
8. Summer Holiday work should be written in a fair Note book.

Section –A

Q. 1.   In which year the Paralympics word was used officially?
   (a) 1948   (b) 1976   (c) 1960   (d) 1988

Q. 2.   When was the Deaflympic start?
   (a) 1927   (b) 1924   (c) 1957   (d) 1960

Q. 3.   What is the most important, while dealing with CWSN?
   (a) Time   (b) Patience   (c) Sympathy   (d) All of these

Q. 4.   What is the motto of paralympic games?
   (a) Sprit of motion   (b) Sprit in motion   (c) Motion of sprit   (d) Motion in sprit

Q. 5.   Which city host first deaflympic?
   (a) Sofia   (b) Malmo   (c) Paris   (d) London

Q. 6.   WADA is related to
   (a) Fitness   (b) Doping   (c) Health   (d) Life skill

Q. 7.   How many countery participate in 2015 deaflympics?
   (a) 95   (b) 96   (c) 97   (d) 98

Q. 8.   The Term Paralympic was officially used in which summer paralympic games.
   (a) 1984   (b) 1988   (c) 1992   (d) 2000

Section – B

Q. 9.   What was the thought behind starting special Olympics.

Section – C

Q. 10.   Explain about special Olympic Games in details.

Q. 11.   Discuss about Paralympics in details.

Section – D

Q. 12.   Discuss about special Olympic rules in briefs.

Section – E

Q. 13.   Explain the advantages of physical activities for CWSN.

Q. 14.   What is disability? Explain the strategies to make physical Activities assessable for CWSN.