



R.E.D. GROUP OF SCHOOLS

Summer Holidays Homework

SESSION: 2024-25

Class: 12th

Subject: English

Text Book: Flamingo, Vistas, BBC Compacta

1. Syllabus Covered up to MAY END

Flamingo

- Chapter No. 1 The Last Lesson
- Chapter No. 2 Lost Spring
- Chapter No. 3 Deep Water
- Chapter No. 4 The Rattrap
- Poem No. 1 My Mother at Sixty-Six
- Poem No. 2 Keeping Quiet

Vistas

- Chapter No. 1 The Third Level
- Chapter No. 2 The Tiger King
- Notice Writing
- Invitation & Reply

2. List of all new concepts taught up to MAY END (Grammar Topics)

- Past Indefinite
- Nouns
- Past Continuous
- Pronouns
- Past Perfect
- Verbs
- Past Perfect Continuous
- Present Indefinite
-
- Adjectives
- Present Continuous
- Adverbs
- Present Perfect
- Present Perfect Continuous
- Conjunctions
- Future Indefinite
- Prepositions

3. Summer Holiday Homework:

○ Reading & Speaking Homework:

- **Section-A:** Reading Homework
- **Section-B:** Speaking Homework
- **Section-C:** Pre-Reading Homework

○ Written Homework:

- **Section-D:** Chapter-wise Revision Assignment
- **Section-E:** Grammar Revision Assignment
- **Section-F:** Project Work

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

1. 12 tenses formula with examples

OR

Verb project chart

OR

Parts of speech and application

2. Grammar flip book with Transformation of Sentences (Narration/Voice)

OR

Draw your favorite fiction-character from any one work of the writer R.K. Narayan and describe it using 10 adjectives.

4. Tools required for doing Homework:

- Text Book – Notebook – Scrap Book – Resources as per activity
- 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

5. Instruction/Guidelines for Reading & Speaking Homework:

○ Section-A: Reading Homework

- Each student will read one fiction & one non-fiction book.
- Each student will read –
Fictional work: The Centerville Ghost written by Oscar Wilde and
Non-fiction: The Diary of a Young Girl by Anne Frank
Write review of both the works separately using the following steps

- Draw creative page as front page
- Identify and list the Main characters in the story
- Write the summary of the story as follows: —
 - Beginning
 - Middle
 - Ending
- Write your favourite part of the story
- Mention anything you disliked about the story
- Story rating out of 5 and why
- If you were the author how will you end the story

○ Section-B: Speaking Homework

- Students will practice on one of the given topics as an extempore activity: –
 - Population Explosion
OR
 - Importance of Learning Through Experience
OR
 - Punctuality vs Procrastination
- Students will prepare speaking activity video on any one of the above topics and share their video with English teachers on WhatsApp PS group. Video should be of 1 minute.

○ Section – C: Pre-Reading Homework

- Do the Pre-Reading of Ch-5 (Indigo), Ch-6 (Poets & Pancakes), Poem 3 (A Thing of Beauty)
- Write all the difficult words & their meanings of above chapters in English N.B.

6. Instruction/Guidelines for Written Homework:

- **Section – C:** Do the given Chapter-wise Assignments on A4 Sheet.
- **Section – E:** Do the given Grammar Assignment on A4 Sheet.
- **Section – F:** Project work
 - **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

7. Marking scheme for English homework: –

- **Section-A Reading HW**
 - Book Review **2 marks**
- **Section-B Speaking Homework**
 - Video shared by students on WhatsApp **4 marks**

- **Section-C Pre reading homework**
 - Difficult words & their meanings in N.B. **2 marks**
- **Section-D Chapter Wise Revision Assignments** **4 marks**
- **Section-E Grammar Revision Assignment** **4 marks**
- **Section-F Project work** **4 marks**

Total marks of English H.W.

20 marks

8. Important Note:

- **All students must submit their vacation Homework of All Subjects for Assessment by teacher on 1st July 2024 by all means. Five marks will be deducted for per day of delay after 1st July 2024.**



R.E.D. Group of Schools

Chapter-wise Revision Assignment-1

Class: 12th

Ch. Name: The Last Lesson

Subject: English

Chapter No. 1

Part-1 – Vocabulary skills

Q.1. Write the meanings of the following key terms:

- | | |
|----------------|---------------|
| i. Apprentice | vi. Fright |
| ii. Reproach | vii. Enslaved |
| iii. Commotion | viii. Solemn |
| iv. Dreadful | ix. Nuisance |
| v. Tempting | x. Mounted |

Q.2. Write the Synonyms of the following words

- (i) Solemn
- (ii) Commotion

Q.3. Write the Antonyms of the following words

- (i) Tempting
- (ii) Enslaved

Q.4. Write the Homonyms of the following words

- (i) Light
- (ii) Know

Part-2 – Reading Skills

Q.5. Read the following Passage from the Chapter & answer the questions.

Passage

Usually, when school began, there was a great bustle, which could be heard out in the street, the opening and closing of desks, lessons repeated in unison, very loud, with our hands over our ears to understand better, and the teacher's great ruler rapping on the table. But now it was all so still! I had counted on the commotion to get to my desk without being seen; but, of course, that day everything had to be as quiet as Sunday morning. Through the window I saw my classmates, already in their places, and M. Hamel walking up and down with his terrible iron ruler under his arm.

Answer the following Questions from the passage: -

- a. What was the usual environment of the school?
- b. What did Franz observe through the window?

Part-3 –Application skills of Subject Tools & Concepts

Q.6. Answer the following Short Answer Type Questions

1. Who did M.Hamel blame for the neglect of learning on the part of boys like Franz?
2. Franz thinks, "Will they make them sing in German, even the pigeons?" What does this tell us about the attitude of the Frenchmen?
3. How did M.Hamel say farewell to his students and the people of the town?

Q.7. Answer the following Long Answer Type Questions

1. Our language is part of our culture and we are proud of it. Describe how regretful M.Hamel and the village elders are for having neglected their native language, French.
2. Everybody during the last lesson is filled with regret. Comment.

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch.- 1 From Flamingo.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-2

Class: 12th
Ch. Name: Lost Spring

Subject: English
Chapter No. 2

Part-1 – Vocabulary skills

Q.1. Write the meanings of the following key terms:

- | | |
|-----------------|-----------------|
| i. Apprehension | vi. Despondency |
| ii. Languish | vii. Profligate |
| iii. Fecundity | viii. Promise |
| iv. Parochial | ix. Embarrassed |
| v. Debilitated | x. Barefoot |

Q.2. Write the Synonyms of the following words

- (iii) Perpetual
(iv) Pair

Q.3. Write the Antonyms of the following words

- (iii) Acquaintance
(iv) Empty

Q.4. Write the Homonyms of the following words

- (iii) Light
(iv) Know

Part-2 – Reading Skills

Q.5. Read the following Passage from the Chapter & answer the questions.

Passage

Author delves into the abject poverty prevailing in the squalid dwellings of the ragpickers. The pervasive destitution is exacerbated by the avarice of the upper echelons of society, who exploit these marginalized communities. The palpable atmosphere of despondency is contrasted with the fecundity of the waste, as the children, despite their debilitated state, exhibit resilience. The author paints a poignant picture of the parochial mindset that perpetuates their plight.

Answer the following Questions from the passage: -

- Define squalid.
- What does palpable meaning in this context?

Part-3 –Application skills of Subject Tools & Concepts

Q.6. Answer the following Short Answer Type Questions

- What was the story of the man from Udipi?
- How do elders and children look at garbage differently?
- Why are shoes with a hole dream come true?

Q.7. Answer the following Long Answer Type Questions

- What could be some of reasons for the migration of people from villages to the cities?
- Do you find the title of the lesson “Lost Spring” justified? Discuss.

Part-4 – Learning Homework

- Learning Homework:** Learn Ch.- 2 From Flamingo.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-3

Class: 12th
Ch. Name: Deep Water

Subject: English
Chapter No. 3

Part-1 – Vocabulary skills

Q.1. Write the meanings of the following key terms:

- | | |
|------------------|-----------------|
| i. Continually | vi. Shriek |
| ii. Overpower | vii. Knock down |
| iii. Treacherous | viii. Sensation |
| iv. Oblivion | ix. Buried |
| v. Drowning | x. Residual |

Q.2. Write the Synonyms of the following words

- (v) Misadventure
(vi) Continually

Q.3. Write the Antonyms of the following words

- (v) Deep
(vi) Terror

Q.4. Write the Homonyms of the following words

- (v) Heart
(vi) Seen

Part-2 – Reading Skills

Q.5. Read the following Passage from the Chapter & answer the questions.

Passage

Tiny vestiges of the old terror would return. But now I could frown and say to that terror, “Trying to scare me, eh? Well, here’s to you! Look!” And off I’d go for another length of the pool. This went on un-til July. But I was still not satisfied. I was not sure that all the terror had left. So, I went to Lake Went-worth in New Hampshire, dived off a dock at Triggs Island, and swam two miles across the lake to Stamp Act Island. I swam the crawl, breaststroke, sidestroke, and backstroke. Only once did the terror return. When I was in the middle of the lake, I put my face under and saw nothing but bottomless water. The old sensation returned in miniature.

Answer the following Questions from the passage: -

- a. Why was the author not satisfied?
b. What is the old sensation?

Part-3 –Application skills of Subject Tools & Concepts

Q.6. Answer the following Short Answer Type Questions

- Douglas uses sensory details to create a vivid image of the unfortunate experience in the pool. What might be the impact on the reader if the narration were more informative than sensory?
- Seemingly small every day wins are actually the greatest learnings of life. Comment on the statement with reference to the chapter “Deep Water”.
- If you could give the chapter a new title, what would it be? Support your answer with reference to the chapter “Deep Water”.

Q.7. Answer the following Long Answer Type Questions

- The childhood experience of terror of Douglas made him stronger and more determined. Elucidate the above statement supporting it with evidence from the text.

2. Imagine that the bully who threw Douglas into the pool reads this chapter and realizes his mistake. As the bully, write a diary entry penning down your response to Douglas' perseverance and your own feelings of guilt and regret.

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch.- 3 From Flamingo.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-4

Class: 12th

Subject: English Grammar

Part-1 – Word Structure

Section-A (Part of Speech)

Q.1. Define the following parts of speech and give one example.

- (a) Pronoun- _____
Example: _____
- (b) Noun- _____
Example: _____

Q.2. Choose the correct option as per the given directions:

A. In the sentence "By the time they arrive, I will have finished my homework," what is the tense of the verb "finished"?

- Present
- Future perfect
- Past perfect
- Present perfect

B. Choose the sentence with the correct usage of the irregular verb "run."

- Last weekend, he runs in the marathon and finished in first place.
- Sarah has run five miles every morning this week.
- They have ran to catch the bus, but they missed it.
- She runs quickly and has won several races.

C. In the sentence "She had been studying for hours before the exam," what is the tense of the verb "studying"?

- Present continuous
- Past perfect continuous
- Future continuous
- Present perfect continuous

D. Choose the sentence with the correct usage of the irregular verb "swim."

- He swims every day after work and had swum competitively in college.
- She has swimmmed in the ocean every summer since she was a child.
- They swimmmed across the lake to reach the other side.
- We have swum in this pool for years without any incidents.

Q.3. Fill in the blanks with correct parts of speech.

- A. The cat, as well as its kittens, _____ (sleep) peacefully in the warm sunbeam.
- B. Both the parents and their children _____ (enjoy) the picnic at the park.
- C. The team, despite their injuries, _____ (play) exceptionally well in the final match.
- D. The students, including John and Mary, _____ (study) for their exams late into the night.

Q.4. Identify and correct the error in the following sentence:

- A. Despite of the rain, the picnic was still enjoyable.
- B. The child's excitement knew no bound when he saw the presents under the Christmas tree.
- C. She is taller than me, but I am more faster than her.
- D. After finishing her degree, she wants to traveling around the world.

Q.5. Change the underlined parts of speech to the following:

- A. Despite the challenges, Maria completed Maria's project ahead of schedule. (to Pronoun)
- B. He talks about him's problems to everyone who will listen. (to possessive pronoun)

- C. The dog wagged its tail with excitement when its owner returned home. (to possessive pronoun)
D. My sister and me went to the store to buy some groceries. (to objective pronoun)

Part-2 – Sentence Structure

Section-B: Tense Structure

Q.6. Define the following tense and give one example.

(a) Past Tense- _____

Example: _____

(b) Present Tense- _____

Example: _____

Q.7. Choose the correct option as per the given directions:

A. He ____ a challenging book over the weekend.

- i. reads ii. reading iii. read iv. readed

B. The project ____ successfully completed by the dedicated team.

- i. is ii. are iii. was iv. were

C. She ____ her bicycle to school every day.

- i. rides ii. riding iii. rode iv. rided

D. They ____ to the party last night.

- i. go ii. going iii. Went iv. gone

Q.8. Fill in the blanks with the correct tense.

A. Before the guests arrived, the host _____ (decorate) the house with colorful balloons and streamers.

B. By next year, they _____ (save) enough money to buy a new car.

C. She _____ (study) French for two years before she moved to Paris.

D. By the time I woke up, my roommate _____ (already/make) breakfast.

Q.9. Identify and correct the error in the following sentences:

A. The children plays in the park every afternoon.

B. She have visited the art museum during her trip to Paris.

C. She don't like spicy food.

D. They is going to the concert tonight.

Q.10. Transform the given sentences as instructed:

A. We often visit our grandparents during the holidays. (to Simple Past Tense)

B. She writes articles for the newspaper regularly. (Change to Past Perfect Continuous)

C. We visited our grandparents during the holidays. (Simple Past Tense)

D. We will often visit our grandparents during the holidays. (Future Simple Tense)

Q.11. Translate the given Hindi sentence into English-

A. मैंने उसे कल स्कूल जाते हुए देखा।

B. मैंने कल बाजार से सब्जियाँ खरीदीं।

C. हम पिछले साल हिमालय की यात्रा पर गए थे।

D. उसने अपनी किताबें पढ़ लीं। बच्चों ने पार्क में खेला।

Section-C: Voices

Q.12. Convert the given sentence as instructed

A. The people were helping the wounded woman.

B. The chef was preparing a delicious meal.

C. The children were building a sandcastle.

D. The committee was organizing the annual event.

E. The technician was repairing the broken computer.

Section-D: Narration

Q.13. Convert the given sentence as instructed

- A. She said, "I will finish the project by tomorrow."
- B. He remarked, "I am going to the store after work."
- C. They exclaimed, "We won the championship!"
- D. John asked, "Can you help me with this assignment?"
- E. Maria mentioned, "I have never been to Paris."

Section-E

Part-3 – Creative Writing Skills

Q.14. Questions based on hobbies, experiences or picture descriptions.

- A. Write about your hobby or a memorable experience. Describe how you developed this hobby or had this experience, how it has influenced your life, and what you have learned from it."
- B. "Reflect on a skill you have developed over the years. Explain how you discovered this skill, the steps you took to improve it, and how it has impacted your personal growth and everyday life."

Q.15. Question based on Essay Writing/Story Writing/ Letter Writing/ E-Mail.

- A. 'The Importance of Education'
- B. Climate Change and Its Effects on Future Generations

Summer Holidays Homework

SESSION: 2024-25

CLASS –12th

Subject: Physics

Text Book: NCERT

1. Syllabus Covered upto MAY END

- Chapter No.- **01** - **Electric charge and field**
- Chapter No.- **02** - **Electric potential and electric capacitance**
- Chapter No.- **03** - **Current and electricity**
- Chapter No.- **04** - **Magnetic effect of current**
- Chapter No.- **05** - **Magnetism and Matter**

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 carrying figures
- Force on a Moving charge particles in magnetic field

3. Summer Holiday Homework:

- **Reading Homework:**
 - **Section-A:** Pre-Reading Homework
- **Written Homework:**
 - **Section-B:** Chapter-wise Revision Assignments
 - **Section-C:** Creative Project/ Model
 - **Section-D:** Experiment based activity.
 - **Section-E:** Indian Scientists (Physics) and their contribution.

4. Tools required for doing Homework:

- NCERT Text Book, S.L. Arora book
- Notebook
- A4 Sheets, Internet
- Resources as per activity

5. Instruction/Guidelines for Reading Homework:

- **Section-A : Pre-Reading Homework**
 - Do the Pre-Reading of Chapter No. 6 and 7
 - Write all the difficult words & their meanings of above chapters in Physics N.B.

6. Instruction/Guidelines for Written Homework:

- **Section-B :** Do the given Assignments on A4 Sheets.
- **Section-C :** Creative Project/ Models
 - Topic: Roll no 1 to 11 (Make a working project of Periscope)
 - Topic: Roll no 12 to 22 (Creating Electric Current with a Magnet)
 - Topic: Roll no 23 to 33 (Make Earthquake Alarm Working Model)
 - Topic: Roll no 34 to 44 (Solar panel)
- **Section-D-**Experiment based activity.
 - One activity which can be performed at home with parental supervision.
 - **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:**
- **Section-E- Indian Scientists and their contribution (Any 1 Scientist).**
Research on any one Indian scientist (Physics) and prepare a project on A4 size sheets and a collage by using their pictures.
 - **Point to be enquired:**
 - Birth
 - Education
 - Branch in which they worked
 - Achievements

7. Marking scheme for Physics homework: –

- **Section-A : Pre-Reading HW**
 - Difficult words & their meanings in N.B. **4 marks**
- **Section-B : Chapter wise Revision Assignments** **4 marks**
- **Section-C : Project/Model** **4 marks**
- **Section-D : Experiment Based Activity** **4 marks**
- **Section-E : Research on Indian Scientist (Physics)** **4 marks**

Total marks of Physics H.W.

20 marks

8. Important Note:

All students must submit their vacation Homework of All Subjects for Assessment by teacher on 1st July 2024 by all means. Five marks will be deducted for per day of delay after 1st July 2024.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-1

Class: XII
Ch.No.: 1

Subject: Physics
Ch. Name: Electric Charge & Field

For recapitulation & solving the assignment the students should refer to their text book of Physics

Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- | | | |
|-------------------------------|----------------------|---------------------|
| (i) Quantization of charge | (ii) Electric Dipole | (iii) Dipole Moment |
| (iv) Conservation of Charge | (v) Coulomb's Law | (vi) Superposition |
| (vii) Electric Field | (viii) Dielectric | (ix) Equipotential |
| (x) Electric potential energy | | |

Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

Passage

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 from negative charge to positive charge. On axial line of electric dipole $|\vec{E}| = \frac{|\vec{p}| 2r}{4\pi\epsilon_0 (r^2 - a^2)^2}$

The direction of \vec{E} is opposite to direction of \vec{p} . On equatorial line of electric dipole,

$$|\vec{E}| = \frac{|\vec{p}|}{4\pi\epsilon_0 (r^2 + a^2)^{3/2}}$$

(i) **Answer the following Questions from the passage:-**

- (A) A charge q is held in an electric field of intensity \vec{E} . What is the force on the charge?
 (B) The algebraic sum of charges on an electric dipole is _____.
 (C) Electric field \vec{E} on axial line of electric dipole is $E \propto r^n$. What is the value of n ?

Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/ Flow chart/Puzzle for the following Concepts

Diagram:

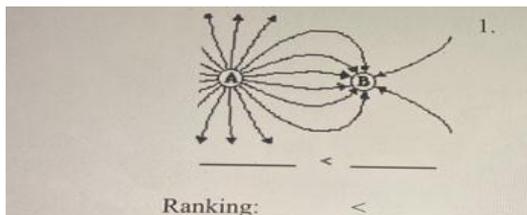
- a) Plots Graph electric field vs distance for point charge, line charge and dipole
 b) Electric field due to dipole and equatorial line.

Flowchart:

- a) List all the Formulas of Chapter 1: Electric Charge and Field

Puzzle:

- a)



Q.4. Solve the following Assertion-Reason/Statement based question

- (i) (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.

Q.5. Perform the following Lab. Activity at home and share the video of your activity to the Science PS Group and answer the following questions related to the activity

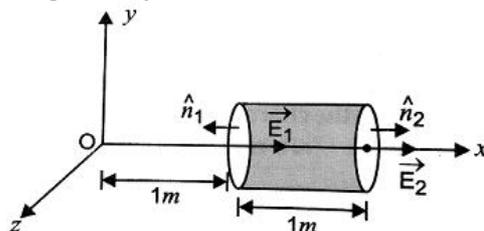
Activity

Activity :- To induce a charge on balloon

- (a) What is the charge on electron
(b) What is the cause of charge on balloon

Q.6. Answer the following Short Answer Type Questions

1. 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 .

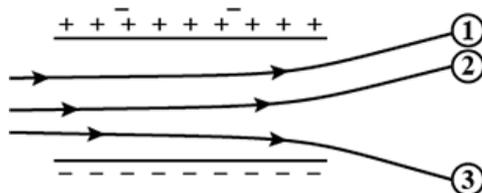


Find –

- (i) Net flux through the cylinder
 - (ii) Charge enclosed by the cylinder.
2. 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 from the nucleus?
3. (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?
4. (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. Answer the following Long Answer Type 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 \mathcal{G} 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 ' $3a$ ' with its centre at the origin.

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch-1 From NCERT



R.E.D. Group of Schools

Chapter-wise Revision Assignment-2

Class: XII

Subject: Physics

Ch.No.: 2

Ch. Name:

For recapitulation & solving the assignment the students should refer to their text book of Physics

Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- | | | |
|----------------------|----------------------|------------------------|
| (i) Potential | (ii) Equipotential | (iii) Capacitance |
| (iv) Dielectric. | (v) Uniform | (vi) polarization |
| (vii) Electrostatics | (viii) Dipolemoment. | (ix) Common potential |
| | | (x) Potential gradient |

Q.2. Read the following Passage from the Chapter & answer the questions.

Passage :

A capacitor is an arrangement for storing 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

(i) Answer the following Questions from the passage:-

- (A) When a dielectric medium of relative permittivity K is inserted between the plates of capacitor than capacitance of the capacitor will.
- (B) What happens to capacitance of the condenser when the distance between the plates increased.

Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/ Flow chart/Puzzle for the following Concepts

Diagram:

- a) Equipotential surface for point charge, and a dipole.
b) Gaussian surface due to line of charge and uniform charged thin sheet

Flowchart:

- a) Draw electric field lines on a conducting sheet due to a charge

Puzzle:

- a) Can there be a potential difference between two adjacent conductors carrying the same charge?

Q.4. Solve the following Assertion-Reason/Statement based question

- (i) (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 :

Reason :

ii) Assertion :

Reason :

Q.5. Perform the following Lab. Activity at home and share the video of your activity to the Science PS Group and answer the following questions related to the activity
Activity – to calculate the capacitance of capacitor

- (a) What is the capacitance
(b) What is the effect on capacitance if distance between two plate increase

Q.6. Answer the following Short Answer Type Questions

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?

Q.7. Answer the following Long Answer Type Questions

- Q1. Write the expression for energy loss when a charged capacitor C up to potential V connect with another uncharged identical capacitor in parallel
- Q2. 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
- Q3. A capacitor of capacitance $5.00 \mu\text{F}$ is charged to 24.0 V and another capacitor of capacitance $6.0 \mu\text{F}$ is charged to 12.0 V .
- (i) Find the energy stored in each capacitor.
- (ii) 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.
- (iii) Find the loss of electrostatic energy during the process.
- (iv) Where does this energy go?
- Q4. What is Gauss the theorem? Write its mathematical form.

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch-2 From NCERT Ex.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-3

Class: XII

Subject: Physics

Ch.No.: 3

Ch. Name: Current and electricity

For recapitulation & solving the assignment the students should refer to their text book of Physics

Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- | | | | |
|-------------------------|----------------|-------------------|-------------------------|
| i) Potential difference | ii) Emf | iii) Voltmeter | iv) Internal resistance |
| v) Resistance | vi) Ammeter | vii) Galvanometer | viii) Electricity |
| ix) Current density | x) Conductance | | |

Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

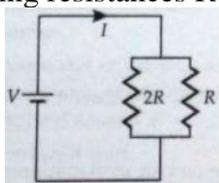
Passage

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 vigorously 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) Answer the following Questions from the passage:-

- (A) 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

- (B) Two wires having resistances R and $2R$ connected in parallel, then ratio of heat generated in R and $2R$ is
(a) 3 : 2
(b) 2 : 1
(c) 1 : 4
(d) 4 : 1



- (C) When 4 equal resistors are connected in series with a battery, they 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

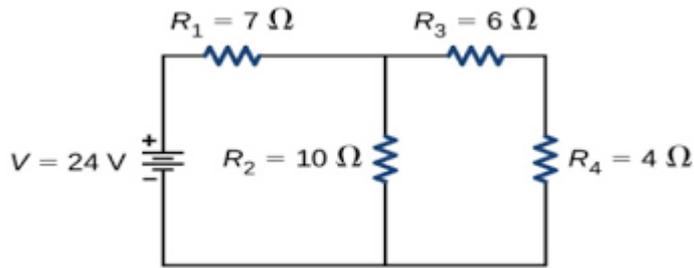
Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/ Flow chart/Puzzle for the following Concepts

Diagram:

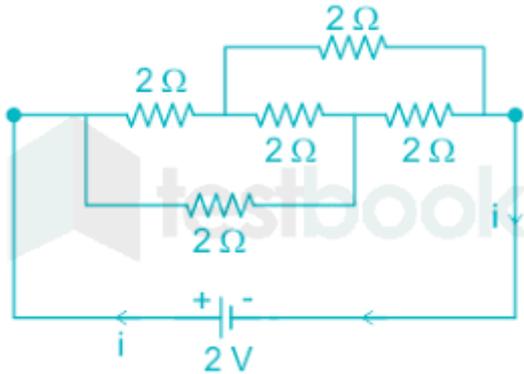
- Draw V-I graph for an ohmic conductor
- Draw a graph between resistivity and temperature for conductor, insulator and semiconductor

Flowchart: calculate net current in circuit



Puzzle:

a) Calculate the net resistance



Q.4. Solve the following Assertion-Reason/Statement based question

- (i) (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 :** 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

ii) **Assertion :** A larger dry cell has higher emf.

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

Q.5. Perform the following Lab. Activity at home and share the video of your activity to the Science PS Group and answer the following questions related to the activity

Activity Plot V-I graph for conductor

- (a) What is the dimensional formula of resistance?
 (b) What is the nature of V-I graph for conductor ?

Q.6. Answer the following Short Answer Type Questions

5. 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.
 6. 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'.
 7. 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

Q.7. Answer the following Long Answer Type Questions

- Q1.** 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?
Q2. 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?
Q3. 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?
Q4. 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 $R = 4\Omega$, 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

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch- 3 From Text Book/Notebook.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-3

Class: XII

Subject: Physics

Ch.No.: 4

Ch. Name: Magnetic effect of current

For recapitulation & solving the assignment the students should refer to their text book of Physics

Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- | | | |
|------------------------|------------------|---------------------|
| (i) Magnetic field | (ii) current | (iii) Lorentz force |
| (iv) Velocity selector | (v) Galvanometer | (vi) Voltmeter |
| (vii) Ammeter | (viii) Shunt | (ix) Alpha particle |
| (x) Radius | | |

Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

Passage

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 10^{-6} A. 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.

(i) Answer the following Questions from the passage:-

- (A) 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 is 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.
- (B) 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 damaged. (d) None of damaged
- (C) 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-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/ Flow chart/Puzzle for the following Concepts

Diagram:

- a) Diagram of Galvanometer
b) Torque on coil in magnetic field

Flowchart:

- a) Make a flow Chart of formula of Chapter

Puzzle:

- a) Draw the trajectory of proton and electron in same magnetic field

Q.4. Solve the following Assertion-Reason/Statement based question

- (i) (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 :** On changing the direction of flow of current through a straight conductor, the direction of a magnetic field around the conductor is reversed.

Reason : The direction of magnetic field around a conductor can be given in accordance with left hand thumb rule.

- ii) **Assertion :** 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 : Strength of a magnetic field at a point near the conductor increases on increasing the current.

Q.5. Perform the following Lab. Activity at home and share the video of your activity to the Science PS Group and answer the following questions related to the activity

Activity calculate the shunt of galvanometer to convert it into a ammeter

(a) **What is the resistance of an ideal ammeter**

(b) **What is the resistance of an ideal Voltmeter**

Q.6. Answer the following Short Answer Type Questions

8. Explain Biot-savarts law in term of

(i) Current density

(ii) Charge and its velocity.

9. State Ampere's circuital law and prove this law for a circular path around a long current carrying conductor.

10. 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. Answer the following Long Answer Type Questions

Q1. 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 find the

A. Ratio of magnetic field at center

B. Total magnetic field at center

C. Ratio of magnetic moment

Q2. Proton and a alpha particle enters in a magnetic field with same kinetic energy perpendicular to magnetic field. Find the ratio of their radius.

Q3. 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?

Q4. A current carrying coil of radius R and numbers of turns N convert into a square. Find the ratio of their magnetic moment.

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch- 4 From ncert Book/Notebook.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-4

Class: XII

Subject: Physics

Ch.No.: 5

Ch. Name: magnetism and matter

For recapitulation & solving the assignment the students should refer to their text book of Physics

Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- | | | |
|--------------------------|------------------------------|---------------------|
| (i) Paramagnetic | (ii) Diamagnetic | (iii) Ferromagnetic |
| (iv) Intensity | (v) Susceptibility | (vi) Horizontal |
| (vii) Vertical Component | (viii) Relative Permeability | (ix) Solenoid |
| | | (x) Toroid |

Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

Passage :

These materials are barely magnetised when placed in a magnetic field. Magnetic dipoles in these substances tend to align in opposition to the applied field. In effect, they produce an internal magnetic field that opposes the applied field and the substance tends to repel the external field around it. This opposing field disappears as soon as the external field is removed.

Ex: Gold, water, mercury and even animals!

(i) Answer the following Questions from the passage:-

- (A) What are the 3 classifications of magnetic materials?
- (B) What is the ferromagnetic and examples?
- (C) What does being diamagnetic mean?

Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/ Flow chart/Puzzle for the following Concepts

Diagram:

- a) Ferromagnetic in External Magnetic Field
- b) Paramagnetic in External Magnetic Field

Q.4. Solve the following Assertion-Reason/Statement based question

- (i) (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 :** Basic difference between an electric line and magnetic line of force is that former is discontinuous and the latter is continuous or endless.
Reason : No electric lines of force exist inside a charged body but magnetic lines do exist inside a magnet.
- ii) **Assertion :** Magnetic moment of an atoms is due to both, the orbital motion and spin motion of every electron.
Reason : A charged partical produces a magnetic field.

Q.5. Perform the following Lab. Activity at home and share the video of your activity to the Science PS Group and answer the following questions related to the activity

Activity

Difference between Paramagnetic , Diamagnetic and Ferromagnetic

- (a) What is the magnetic susptibility range of diamagnetic
- (b) What is the magnetic susptibility range of Paramagnetic

Q.6. Answer the following Short Answer Type Questions

1. Magnetic field lines show the direction (at every point) along which a small magnetized needle aligns (at the point). Do the magnetic field lines also represent the lines of force on a moving charged particle at every point?
2. If magnetic monopoles existed, how would the Gauss's law of magnetism be modified?
3. Does a bar magnet exert a torque on itself due to its own field? Does one element of a current-carrying wire exert a force on another element of the same wire?

Q.7. Answer the following Long Answer Type Questions

- Q1** A closely wound solenoid of 2000 turns and area of cross-section $1.6 \times 10^{-4} \text{ m}^2$, carrying a current of 4.0 A, is suspended through its centre allowing it to turn in a horizontal plane.
- What is the magnetic moment associated with the solenoid ?
 - What is the force and torque on the solenoid if a uniform horizontal magnetic field of $7.5 \times 10^{-2} \text{ T}$ is set up at an angle of 30° with the axis of the solenoid?
- Q2.** A short bar magnet placed with its axis at 30° with a uniform external magnetic field of 0.25 T experiences a torque of magnitude equal to $4.5 \times 10^{-2} \text{ J}$. What is the magnitude of magnetic moment of the magnet?
- Q3.** A closely wound solenoid of 800 turns and area of cross section $2.5 \times 10^{-4} \text{ m}^2$ carries a current of 3.0 A. Explain the sense in which the solenoid acts like a bar magnet. What is its associated magnetic moment?
- Q4.** A bar magnet of magnetic moment 1.5 J T^{-1} lies aligned with the direction of a uniform magnetic field of 0.22 T.
- What is the amount of work required by an external torque to turn the magnet so as to align its magnetic moment: (i) normal to the field direction, (ii) opposite to the field direction?
 - What is the torque on the magnet in cases (i) and (ii)?

Part-4 – Learning Homework

Learning Homework: Learn Ch-5 From Text Book/Notebook.



R.E.D. GROUP OF SCHOOLS

Summer Holidays Homework

SESSION: 2024-25

CLASS – 12th

Subject: Chemistry

Text Book: NCERT Book

1. Syllabus Covered up to MAY END

- Chapter No.- 2 Solutions
- Chapter No.- 3 Electrochemistry
- Chapter No.- 4 Chemical kinetics
- Chapter No.- 10 Haloalkanes and Haloarenes
- Chapter No.- 8 D and f block elements

2. List of all new concepts taught up 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. Summer Holiday Homework:

- **Reading Homework: Section-A** – Learning and Pre-reading homework.
- **Written Homework: Section-B** – Chapter wise Revision assignment.
- **Section-C** – Creative Project/ Working model/ Inquiry based project.
- **Section-D** – Experiment based activity.
- **Section-E** – Indian Scientists (Chemistry) and their contribution.

4. Tools required for doing Homework:

1. NCERT Book, Pradeep book
2. Notebook
3. A4 Sheets
4. Resources as per activity

5. Instruction/Guidelines for reading Homework:

Section-A – Pre reading homework:

- Do the pre reading of chapter number – 09 (Coordination compounds) and Ch. No. – 11 (Alcohols, Phenols and Ethers)
- Write all the difficult words & their meanings of above chapters in Chemistry N.B.

6. Instruction/Guidelines for written Homework:

Section –B- Do the given assignments on A4 Sheets.

Section-C- Creative Project/ Working model

Topic-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.

Topic-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.

Topic-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.

Topic-4. To study about nucleophilic substitution reaction of Haloalkanes and mechanism (Roll no. 31 to last roll no.)

Material required: - A4 sheets, A Ruler, NCERT Book, A Tape and a box

Steps to prepare - understand the concept and explain on A4 sheets.

Section D - Experiment based activity

Name of the Activity: To observe how eggshell is protected by tooth paste and learn how tooth reacts 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, 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-E- Indian scientist and their contribution (Any one scientist)

Research on any one scientist (Chemistry) & prepare a project on A4 size sheet and a collage by using their pictures.

Point to be enquired -

- (i) Birth
- (ii) Education
- (iii) Branch in which they worked
- (iv) Achievements

7. Marking scheme for Chemistry homework: –

- **Section-A : Pre-Reading HW**
 - Difficult words & their meanings in N.B. **4 marks**
- **Section-B : Chapter wise Revision Assignments** **4 marks**
- **Section-C : Project/Model** **4 marks**
- **Section-D : Experiment Based Activity** **4 marks**
- **Section-E : Research on Indian Scientist (Chemistry)** **4 marks**

Total marks of Chemistry H.W.

20 marks

8. Important Note:

- All students must submit their vacation Homework of All Subjects for Assessment by teacher on 1st July 2024 by all means. Five marks will be deducted for per day of delay after 1st July 2024.



R.E.D. GROUP OF SCHOOLS

Revision Assignment - 1

Class- 12th

Chapter Name- Solutions

Subject: Chemistry

Chapter No.- 2

Part – I (For vocabulary skills)

Q.1 Define the following key terms.

- | | | | |
|---------------------|---------------------------|--------------|-----------------|
| a) Azeotropes | b) Colligative properties | c) Henry law | d) Raoult's law |
| e) Ideal solutions | f) Non ideal solutions | g) Molarity | h) Osmosis |
| i) Osmotic pressure | j) Isotonic solutions | | |

Part - II

Reading Skills

Q.2 Read the following Activity and Answer the following Questions.

Activity

Osmosis is defined as the spontaneous flow of solvent molecules through semipermeable membrane from a dilute solvent to a solution or from a dilute to a concentrated solution.

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

- (i) Which of the following statements is not a colligative property
- | | |
|----------------------------------|--------------------------------|
| (a) Depression in freezing point | (b) Osmotic pressure |
| (c) Boiling point | (d) Elevation in boiling point |
- (ii) Which have higher osmotic pressure
- | | | | |
|------------|----------------|-------------|----------|
| (a) 1M KCl | (b) 1M glucose | (c) 1M urea | (d) None |
|------------|----------------|-------------|----------|
- (iii) A plant cell shrinks when it is kept in a
- | | |
|------------------------|-------------------------|
| (a) hypotonic solution | (b) hypertonic solution |
| (c) isotonic solution | (d) pure water |
- (iv) What happen when Rbc placed in 0.5% solution of NaCl
- | | | | |
|----------------------|---------------------|-------------------|---------------|
| (a) cell will shrink | (b) cell will swell | (c) cell will die | (d) no change |
|----------------------|---------------------|-------------------|---------------|

Part - III

(Application skill of subject tools & Concepts)

Q.3 Draw the Diagram/ Flow chart for the following Concepts

- a) Draw the diagram for solutions showing positive deviation from ideal behaviour
b) Draw the diagram for osmosis.

Q.4 Solve the following Assertion /Reasoning based questions

In the following questions a statement of assertion (A) followed by a statement of reason (R) is given. Choose the correct answer out of the following choices.

- (a) Assertion and reason both are true, reason is correct explanation of assertion.
(b) Assertion and reason both are true but reason is not the correct explanation of assertion.
(c) Assertion is true, reason is false.
(d) Assertion is false, reason is true.

(i) **Assertion:** When NaCl is added to water a depression in freezing point is observed.

Reason: The lowering of vapour pressure of a solution causes depression in the freezing point.

(ii) **Assertion:** When methyl alcohol is added to water, boiling point of water increases.

Reason: When a volatile solute is added to a volatile solvent elevation in boiling point is observed.

Q.5 Perform the following lab activity at home and share the video of your activity to the science P.S. Group & answer the following questions related to the activity:

- (i) To prepare M/20 solution of NaCl solution.
(ii) To prepare M/20 solution of washing soda.

Q.6 Answer the following Short Answer questions

- (a) Liquid 'Y' has higher vapor pressure than liquid 'X', which of them will have higher boiling point?
- (b) What is semimolar and decimolar solutions?
- (c) H₂S, a toxic gas with rotten egg like smell, is used for the qualitative analysis. If the solubility of H₂S in water at STP is 0.195 m, calculate Henry's law constant.
- (d) A 5% solution (by mass) of cane sugar in water has freezing point of 271 K. Calculate the freezing point of 5% glucose in water if freezing point of pure water is 273.15 K.
- (e) What is molarity?

Q.7 Answer the following Long Answer questions

- (a) What is non-ideal solutions and also explain the two deviations from. Ideal solutions with graph
- (b) Determine the correct order of the property mentioned against them:
 - (i) 0.1 m NaCl, 0.1 m urea, 0.1 m MgCl₂ (Elevation in b.pt.)
 - (ii) 0.1 m CaCl₂, 0.1 m sucrose, 0.1 m NaCl (Depression in f.pt.)
- (c) State Henry's Law
- (d) If O₂ is bubbled through water at 393 K, how many millimoles of O₂ gas would be dissolved in 1L of water? Assume that O₂ exerts a pressure of 0.95 bar. (Given K_H for O₂ = 46.82 bar at 393K).
- (e) Given reason for the following: – Aquatic species are more comfortable in cold waters than in warm waters.

Part – IV

Learning Homework

- Learn chapter – 2 solution from textbook, notebook.



R.E.D. GROUP OF SCHOOLS

Revision Assignment - 2

Class- 12th

Chapter Name- Electrochemistry

Subject: Chemistry

Chapter No.- 3

Part – I

For vocabulary skills

Q.1 Define the following key terms.

- | | | |
|-------------------------|---------------------------|-------------------------|
| a) Electrochemical cell | b) Electrolysis | c) Specific conductance |
| d) Molar conductance | e) Equivalent conductance | f) Mobility |
| g) Electrode potential | h) Corrosion | i) Cathode |
| j) Oxidising agent | | |

Part – II

Reading Skills

Q.2 Read the following Activity and Answer the following Questions.

Activity

Electrolysis is the decomposition of an electrolyte on passing current and it involves the migration of the ions of the electrolyte towards oppositely charged electrodes. Reduction occurs at cathode by the gain of electrons while oxidation at the anode by the loss of electrons. The electrical conductivity of an electrolyte increases upon dilution as well as with the increase in temperature. The nature of the products formed at the respective electrodes depends upon the nature of electrolyte whether in molten state or in aqueous solution. The mass of the substance deposited at a particular electrode is guided by the Faraday's first and second laws of electrolysis.

- (i) In an electrolytic cell, one litre of 1 M aqueous solution of MnO_4^- is reduced at the cathode. The quantity of electricity required, so that the final solution is 0.1 MnO_4^{2-} , will be:
- | | |
|-----------|-----------|
| (a) 0.1 F | (b) 1 F |
| (c) 10 F | (d) 100 F |
- (ii) An ion is reduced to an element when it absorbs 6×10^{20} electrons. The number of equivalents of ion is:
- | | |
|-----------|------------|
| (a) 0.10 | (b) 0.01 |
| (c) 0.001 | (d) 0.0001 |
- (iii) A current of 12 amperes is passed through an electrolytic cell containing aqueous NiSO_4 solution. Both Ni and H_2 are formed at cathode. The current efficiency is 60%. What is the mass of nickel deposited on the cathode per hour? (Atomic mass of Ni = 58.7).
- | | |
|-------------|-------------|
| (a) 7.883 g | (b) 3.941 g |
| (c) 5.91 g | (d) 2.645 g |
- (iv) The same quantity of electrical charge that deposited 0.583 g of Ag was passed through a solution of gold salt and 0.355 g of gold was formed. What is the oxidation state of gold in the salt?
- | | |
|--------|----------|
| (a) +1 | (b) +2 |
| (c) +3 | (d) zero |

Part – III

(Application skill of subject tools & Concepts)

Q.3 Draw the Diagram/ Flow chart for the following Concepts

- Draw electrochemical cell.
- Draw the flow chart of electrolytic cell.

Q.4 Solve the following Assertion /Reasoning based questions

In the following questions a statement of assertion (A) followed by a statement of reason (R) is given. Choose the correct answer out of the following choices.

- Assertion and reason both are true, reason is correct explanation of assertion.
- Assertion and reason both are true but reason is not the correct explanation of assertion.

(c) Assertion is true, reason is false.

(d) Assertion is false, reason is true.

(i) **Assertion:** Copper liberates hydrogen from dilute hydrochloric acid.

Reason: Hydrogen is placed above copper in the activity series.

(ii) **Assertion:** Presence of CO₂ promotes corrosion.

Reason: CO₂ is a poisonous gas.

Q.5 Perform the following lab activity at home and share the video of your activity to the science P.S. Group & answer the following questions related to the activity:

(i) To prepare an electrochemical cell using copper and iron as electrodes.

(ii) To study the working of a lead storage battery (inverter battery).

Q.6 Answer the following Short Answer questions

(a) Explain why electrolysis of an aqueous solution of sodium chloride liberates hydrogen at the cathode and chlorine at the anode.

(b) What are primary and secondary cells? Give the construction and working of a dry cell.

(c) Calculate the e.m.f. of the cell in which the following reaction takes place:



Given $E_{\text{cell}}^{\circ} = 1.05\text{ V}$.

(d) Write the equation for the reaction between standard free energy change and standard cell potential.

(e) What is an electrochemical or galvanic cell? Explain the construction and working of a galvanic cell.

Q.7 Answer the following Long Answer questions

(a) Define Kohlrausch's Law. How will you calculate the molar conductivity of acetic acid with the help of the law?

(b) Calculate the cell e.m.f. and ΔG° for the cell reaction at 298 K for the cell.



Given $E_{\text{Zn}^{2+}/\text{Zn}}^{\circ} = -0.763\text{ V}$; $E_{\text{Cd}^{2+}/\text{Cd}}^{\circ} = -0.403\text{ V}$ at 298 K; $F = 96500\text{ C mol}^{-1}$.

(c) Calculate the equilibrium constant for the reaction:



(Given $E_{\text{Cd}^{2+}/\text{Cd}}^{\circ} = -0.40\text{ V}$; $E_{\text{Fe}^{2+}/\text{Fe}}^{\circ} = -0.44\text{ V}$)

(d) Draw the electrochemical series and its application.

(e) Explain a fuel cell and its working.

Part – IV

Learning Homework

- Learn chapter – 3 Electrochemistry from textbook, notebook.



R.E.D. GROUP OF SCHOOLS

Revision Assignment - 3

Class- 12th

Chapter Name- Chemical Kinetics

Subject: Chemistry

Chapter No.- 4

Part – I (For vocabulary skills)

Q.1 Define the following key terms.

- | | | | |
|------------------------|---------------------|-----------------------|-------------|
| a) Rate of reaction | b) Average rate | c) Instantaneous rate | d) Order |
| e) Molecularity | f) Half life | g) Activation energy | h) Catalyst |
| i) Collision frequency | j) Psuedo 1st order | | |

Part – II Reading Skills

Q.2 Read the following Activity and Answer the following Questions.

Activity

Arrhenius studied the effect of temperature on the rate of a reaction and postulated that rate constant varies with temperature exponentially as $k = A e^{-E_a/RT}$. For most of the reactions, it was found that the temperature coefficient of the reaction lies between 2 to 3. The method is generally used for finding the activation energy of a reaction. Keeping on the activation energy has also been studied by studying how much the rate of reaction changes in the presence of catalyst. In most of the cases, it is observed that catalyst lowers the activation energy barrier and increases the rate of reaction.

- (i) **The pre-exponential factor in the Arrhenius equation of a second order reaction has the units.**
- | | |
|---|---|
| (a) mol L ⁻¹ s ⁻¹ | (b) L mol ⁻¹ s ⁻¹ |
| (c) s ⁻¹ | (d) dimensionless |
- (ii) **Which of the following plot will be linear?**
- | | |
|------------------------------------|------------------------------------|
| (a) ln k versus T with –ve slope | (b) k versus 1/T with –ve slope |
| (c) ln k versus 1/T with –ve slope | (d) ln k versus 1/T with +ve slope |
- (iii) **If the rate of reaction grows 15.6 times on increasing the temperature by 30 K, the temperature coefficient of the reaction will be nearly**
- | | |
|---------|---------|
| (a) 2 | (b) 2.5 |
| (c) 3.0 | (d) 3.5 |
- (iv) **If the rate of reaction doubles for 10o rise of temperature from 290 K to 300 K, the activation energy of the reaction will be approximately**
- | | |
|-----------------------------|-----------------------------|
| (a) 40 kJ mol ⁻¹ | (b) 50 kJ mol ⁻¹ |
| (c) 60 kJ mol ⁻¹ | (d) 70 kJ mol ⁻¹ |

Part – III

(Application skill of subject tools & Concepts)

Q.3 Draw the Diagram/ Flow chart for the following Concepts

- Draw concentration v/s rate of 1st order reaction.
- Draw concentration v/s rate of zero order reaction.

Q.4 Solve the following Assertion /Reasoning based questions

In the following questions a statement of assertion (A) followed by a statement of reason (R) is given. Choose the correct answer out of the following choices.

- Assertion and reason both are true, reason is correct explanation of assertion.
 - Assertion and reason both are true but reason is not the correct explanation of assertion.
 - Assertion is true, reason is false.
 - Assertion is false, reason is true.
- (i) **Assertion:** The hydrolysis of methyl acetate by dilute HCl is a pseudo first order reaction.
Reason: HCl acts as a catalyst for the hydrolysis.
- (ii) **Assertion:** The order of a reaction can have fractional value.

Reason : The order of reaction cannot be written from the balanced equation of the reaction.

Q.5 Perform the following lab activity at home and share the video of your activity to the science P.S. Group & answer the following questions related to the activity:

- (i) To study the rate of corrosion of metal iron.
- (ii) To study the electrolysis process of water.

Q.6 Answer the following Short Answer questions

- (a) What is the value of rate constant k if the value of the activation energy E_a and the frequency factor A are 49 kJ / mol and $9 \times 10^{10} \text{ s}^{-1}$ respectively? ($T = 313 \text{ K}$)
- (b) A certain first-order reaction is 45.0% complete in 65 s. What are the rate constant and the half-life for this process?
- (c) What is meant by 'rate constant, k ' of a reaction? If the concentration be expressed in mol L^{-1} units and time in seconds, what would be the units for k (i) for a zero order reaction (ii) for a first order reaction.
- (d) Explain with suitable example, how the molecularity of a reaction is different from the order of a reaction?
- (e) What do you mean by molecularity and order of a reaction? Explain why their values are different in the reaction:

Q.7 Answer the following Long Answer questions

- (a) What is activation energy? How is the rate constant of a reaction related to its activation energy?
- (b) A reaction is of first order in reactant A and of second order in reactant B. How is the rate of reaction affected when
 - (i) concentration of B alone is increased to three times
 - (ii) the concentration of A as well as B is doubled?
- (c) For the reaction: the rate law has been determined to be $\text{Rate} = k[\text{A}][\text{B}]^2$ with $k = 2.0 \times 10^{-6} \text{ mol}^{-2} \text{ L}^2 \text{ s}^{-1}$
For this reaction determine the initial rate of reaction with $[\text{A}] = 0.1 \text{ mol L}^{-1}$, $[\text{B}] = 0.2 \text{ mol L}^{-1}$, $[\text{C}] = 0.8 \text{ mol L}^{-1}$. Determine the rate after 0.04 mol L⁻¹ of A has reacted.
- (d) How average rate is different from instantaneous rate?
- (e) Draw energy profile diagram for exothermic reaction.

Part – IV

Learning Homework

- Learn chapter – 4 Chemical Kinetics from textbook, notebook.



R.E.D. GROUP OF SCHOOLS

Revision Assignment - 4

Class- 12th

Chapter Name- Haloalkanes & Haloarenes

Subject: Chemistry

Chapter No.- 10

Part – I

For vocabulary skills

Q.1 Define the following key terms.

- a) Haloalkane b) Haloarene c) Substitution d) Nucleophile
e) Electrophile f) Wurtz reaction g) Aromatic substitution h) Diazonium salt
i) Primary haloalkane j) Arylhalides

Part – II

Reading Skills

Q.2 Read the following Activity and Answer the following Questions.

Activity

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.

(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) $(CH_3)_3CO^-$

(iv) Tertiary alkyl halides are practically inert to substitution by S_N2 mechanism because of

- (a) insolubility (b) instability (c) inductive effect (d) steric hindrance

Part – III

(Application skill of subject tools & Concepts)

Q.3 Draw the Diagram/ Flow chart for the following Concepts

- a) Write mechanism of S_N1 & S_N2 reaction.
b) Write reactivity order of alkyl halides and aryl halides towards nucleophilic substitution reaction.

Q.4 Solve the following Assertion /Reasoning based questions

In the following questions a statement of assertion (A) followed by a statement of reason (R) is given. Choose the correct answer out of the following choices.

- (a) Assertion and reason both are true, reason is correct explanation of assertion.
(b) Assertion and reason both are true but reason is not the correct explanation of assertion.
(c) Assertion is true, reason is false.
(d) Assertion is false, reason is true.

(i) **Assertion:** Butan-2-ol is optically active.

Reason: its mirror image is non-superimposable on it.

(ii) **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.

Q.5 Perform the following lab activity at home and share the video of your activity to the science

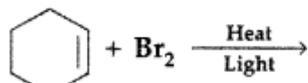
P.S. Group & answer the following questions related to the activity:

- (i) To study the hydrolysis process of ethanol.
(ii) To study the working of naphthalene balls.

Q.6 Answer the following Short Answer questions

(a) Out  and  of which is an example of allylic halide?

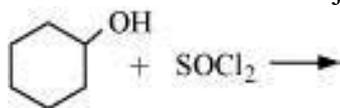
(b) Draw the structure of major monohalogen product in the following reaction:

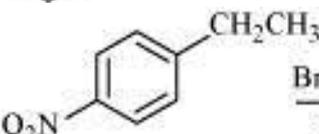


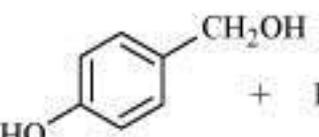
- (c) Why is sulphuric acid not used during the reaction of alcohols with KI?
(d) Haloalkanes easily dissolve in organic solvents, why?
(e) Out of the two bromo derivatives, C₆H₅CH(CH₃)Br and C₆H₅CH(C₆H₅)Br, which one is more reactive in S_N1 substitution reaction and why?

Q.7 Answer the following Long Answer questions

(a) Draw the structures of major monohalo products in each of the following reactions:



(b)  $\xrightarrow[\text{UV light}]{\text{Br}_2, \text{heat or}}$

(c)  + HCl $\xrightarrow{\text{heat}}$

- (d) Wurtz reaction
(e) Finkelstein reaction

Part – IV

Learning Homework

- Learn chapter – 10, Haloalkanes & Haloarenes from textbook, notebook.



R.E.D. GROUP OF SCHOOLS

Revision Assignment - 5

Class- 12th

Chapter Name- d and f Block Elements

Subject: Chemistry

Chapter No.- 8

Part – I

For vocabulary skills

Q.1 Define the following key terms.

- | | | |
|----------------------------|---------------------------|----------------------------|
| a) Lanthanoid contraction | b) Paramagnetic substance | c) Actinoid contraction |
| d) Diamagnetic substance | e) Transition elements | f) Non ideal solutions |
| g) Alloys | h) Interstitial compounds | i) First transition series |
| j) Third transition series | | |

Part – II

Reading Skills

Q.2 Read the following Activity and Answer the following Questions.

Activity

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 $(n - 1) d^{10} n s^2$.

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

- (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) 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) $3d^3 4s^2$ |
|-----------------|-----------------|-----------------|-----------------|
- (iii) 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. |
- (iv) The reduction potential values of M, N and O are +2.46, -1.13 and -3.13 V respectively. Which of the following order is correct regarding their reducing property?
- | | | | |
|-----------------|-----------------|-----------------|-----------------|
| (a) $O > N > M$ | (b) $O > M > N$ | (c) $M > N > O$ | (d) $M > O > N$ |
|-----------------|-----------------|-----------------|-----------------|

Part – III

(Application skill of subject tools & Concepts)

Q.3 Draw the Diagram/ Flow chart for the following Concepts

- Draw the structure of Permanganate ion.
- Draw the structure of Potassium dichromate.

Q.4 Solve the following Assertion /Reasoning based questions

In the following questions a statement of assertion (A) followed by a statement of reason (R) is given. Choose the correct answer out of the following choices.

- Assertion and reason both are true, reason is correct explanation of assertion.
 - Assertion and reason both are true but reason is not the correct explanation of assertion.
 - Assertion is true, reason is false.
 - Assertion is false, reason is true.
- (i) **Assertion:** Transition metals show variable valency.

Reason: Transition metals have a large energy difference between the ns and (n – 1)d electrons.

(ii) **Assertion:** Transition metals are good catalysts.

Reason: V₂O₅ or Pt is used in the preparation of H₂SO₄ by contact process.

Q.5 Perform the following lab activity at home and share the video of your activity to the science P.S. Group & answer the following questions related to the activity:

- (i) To study the effect of temperature on potash alum.
- (ii) To study the application of potassium permanganate.

Q.6 Answer the following Short Answer questions

- (a) Predict which of the following will be coloured in an aqueous solution. Ti³⁺, V³⁺, Cu⁺, Sc³⁺, Mn²⁺, Fe³⁺ and Co²⁺. Give reasons for each.
- (b) Use Hund's rule to derive the electronic configuration of the Ce³⁺ ion, and calculate its magnetic moment on the basis of the 'spin-only' formula.
- (c) Why do transition elements show variable oxidation states?
- (d) Write two consequences of lanthanoid contraction.
- (e) What is meant by 'disproportionation'? Give an example of a disproportionation reaction in aqueous solution.

Q.7 Answer the following Long Answer questions

- (a) Transition elements generally form coloured compounds why?
- (b) Zinc is not regarded as transition element explain.
- (c) When chromite ore FeCr₂O₄ is fused with NaOH in presence of air, a yellow coloured compound (A) is obtained which on acidification with dilute sulphuric acid gives a compound (B). Compound (B) on reaction with KCl forms an orange coloured crystalline compound (C).
 - (i) Write the formulae of the compounds (A), (B) and (C).
 - (ii) Write one use of compound (C)
- (d) Differentiate between lanthanoid and actinoid.
- (e) Write the method of preparation of KMnO₄

Part – IV

Learning Homework

- Learn chapter – 8, d and f block elements from textbook, notebook.

Summer Holidays Homework

SESSION: 2024-25

CLASS – 12th

Subject: Biology

Text Book: NCERT, MTG

1. Syllabus Covered upto MAY END

- Chapter No.- 02 Sexual Reproduction in Flowering Plants
- Chapter No.- 03 Human Reproduction
- Chapter No.- 04 Reproductive Health
- Chapter No.- 05 Principles of Inheritance and Variation

2. List of all new concepts taught upto MAY END

- Structure of flower
- Microsporogenesis
- Pollination
- Double fertilization
- Male Reproductive system
- Female Reproductive system

3. Summer Holiday Homework:

- **Reading Homework:**
 - **Section-A:** Pre-Reading Homework
- **Written Homework:**
 - **Section-B:** Chapter-wise Revision Assignments
 - **Section-C:** Creative Project/ Model
 - **Section-D:** Experiment based activity.
 - **Section-E:** Indian Scientists (Biology) and their contribution.

4. Tools required for doing Homework:

- Text Book, Notebook, A4 Sheets, Resources as per activity

5. Instruction/Guidelines for Reading Homework:

- **Section-A : Pre-Reading Homework**
 - Do the Pre-Reading of Chapter No. 6 and 7.
 - Write all the difficult words & their meanings of above chapters in Biology N.B.

6. Instruction/Guidelines for Written Homework:

- **Section-B :** Do the given Assignments on A4 Sheets.
- **Section-C :** Creative Project/ Models
 - Topic: Roll no 1 to 8 (Collection and Observation of different types of flower having different types of pollination.)
 - Topic: Roll no 9 to 16 (Showing T.H. Morgan experiment with the help of thermocol sheet or on chart paper to explain Linkage & Recombination.)
 - Topic: Roll no 17 to 24 (To study the infertility and its causes and treatment)
 - Topic: Roll no 25 to 31 (To study and Extract the DNA from Banana)
- **Section-D-**Experiment based activity.
 - One activity which can be performed at home with parental supervision.
 - Name of the Activity: Collection and Observation of different types of flower having different types of pollination.
 - Material Required: Different types of flower & thermocol sheet.
 - ❖ Procedure: Collection of different types of flower from surrounding area.
 - ❖ Observation of flower.

- ❖ Pasting of flower & Thermocol sheet
- ❖ Recording of observation.
- Observations:
- Conclusion:
- Precautions:

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.

○ **Section-E- Indian Scientists and their contribution (Any 1 Scientist).**

Research on any one Indian scientist (Biology) and prepare a project on A4 size sheets and a collage by using their pictures.

• **Point to be enquired:**

- Birth
- Education
- Branch in which they worked
- Achievements

7. Marking scheme for Biology homework: –

- **Section-A : Pre-Reading HW**
 - Difficult words & their meanings in N.B. **4 marks**
- **Section-B : Chapter wise Revision Assignments** **4 marks**
- **Section-C : Project/Model** **4 marks**
- **Section-D : Experiment Based Activity** **4 marks**
- **Section-E : Research on Indian Scientist (Biology)** **4 marks**

Total marks of Biology H.W.

20 marks

8. Important Note:

- **All students must submit their vacation Homework of All Subjects for Assessment by teacher on 1st July 2024 by all means. Five marks will be deducted for per day of delay after 1st July 2024.**



R.E.D. Group of Schools

Chapter-wise Revision Assignment-1

Class: XII
Ch. No.: 1

Subject: Biology
Ch. Name: Sexual Reproduction In
flowering Plants

For recapitulation & solving the assignment the students should refer to their text book of Biology.

Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- | | | |
|----------------------|-----------------|------------------|
| (i) Male Gametophyte | (ii) Endosperms | (iii) Cotyledons |
| (iv) Embryo Sac | (v) Dicot seeds | (vi) Coleoptile |
| (vii) Polyembryony | (viii) Apomixis | (ix) Scutellum |
| (x) Parthenogenesis | | |

Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

Passage

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) **Answer the following Questions from the passage: -**

(A) One of the most resistant biological material present in the exine of pollen grain is

- (a) pectocellulose (b) sporopollenin (c) suberin (d) cellulose.

(B) The exine possesses one or more thin places known as

- (a) Raphe (b) Germ pores (c) Hilum (d) Endothecium

(C) 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.

Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/ Flow chart/Puzzle for the following Concepts
Diagram

a) Embryo Sac

b) Mature Male Gametophyte

Flowchart:

a) Steps of Female Gametophyte formation

Q.4. Solve the following Assertion-Reason/Statement based question

- (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:** Chasmogamous flowers require pollinating agents.
Reason: Cleistogamous flowers do not expose their sex organs.

(ii) **Assertion:** A typical microsporangium of angiosperms is generally surrounded by four wall layers.

Reason: The outer three wall layers perform the function of protection and help in dehiscence of anther to release the pollen.

Q.5. Perform the following Lab. Activity at home and share the video of your activity to the Science PS Group and answer the following questions related to the activity

Activity: Dissecting a Flower

Materials: A large, complete flower (e.g., lily or hibiscus), Tweezers, Scissors, Paper, pen, Labels

Procedure:

1. Observe the flower: Examine the flower and note the different parts (petals, sepals, stamens, pistil).
2. Dissect the flower: Carefully use the tweezers and scissors to dissect the flower and separate its parts.
3. Identify and label: Place the dissected parts on a piece of paper and label each part (e.g., petal, sepal, anther, filament, stigma, style, ovary).
4. Draw a diagram: Draw a diagram of the flower showing all the labeled parts.

(a) Explain the role of petals in the reproductive process of flowering plants.

(b) What are the female reproductive parts of the flower, and what are their functions?

Q.6. Answer the following Short Answer Type Questions

1. Write the function of tapetum in anthers.
2. Name all the haploid cells present in an unfertilised mature embryo sac of a flowering plant. Write the total number of cells in it.
3. Explain the function of germ pores.
4. What is pollen-pistil interaction and how is it mediated? (
5. Differentiate between xenogamy and geitonogamy.

Q.7. Answer the following Long Answer Type Questions

1. In a flowering plant, a microspore mother cell produces four male gametophytes while a megaspore mother cell forms only one female gametophyte. Explain.
2. Draw a diagram of a section of a megasporangium of an angiosperm and label funiculus, micropyle, embryo sac and nucellus.
3. Describe the sequence of the process of microsporogenesis in angiosperms.
4. Mention the reasons for difference in ploidy of zygote and primary endosperm nucleus in an angiosperm.
5. Explain triple fusion in angiosperm.

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch-1. From Text Book/Notebook.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-2

Class: XII

Subject: Biology

Ch.No.: 2

Ch. Name: Human Reproduction

For recapitulation & solving the assignment the students should refer to their text book of Biology.

Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- | | | |
|-----------------|--------------------|-----------------------|
| (i) Spermiation | (ii) Oogenesis | (iii) Birth Canal |
| (iv) Semen | (v) Spermogenesis | (vi) Gestation Period |
| (vii) Sterile | (viii) Spermatozoa | (ix) Parturition |
| (x) Ovulation | | |

Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

Passage

The male sex accessory ducts include rete testis, vasa efferentia, epididymis and vas deferens. The seminiferous tubules of the testis open into the vasa efferentia through rete testis. The vasa efferentia leave the testis and open into epididymis located along the posterior surface of each testis. The epididymis leads to vas deferens that ascends to the abdomen and loops over the urinary bladder. It receives a duct from seminal

vesicle and opens into urethra as the ejaculatory duct. These ducts store and transport the sperms from the testis to the outside through urethra.

(i) **Answer the following Questions from the passage: -**

- (A) What is the correct sequence of the male sex accessory ducts starting from the seminiferous tubules?
- (a) Vasa efferentia, rete testis, epididymis, vas deferens
(b) Rete testis, vasa efferentia, epididymis, vas deferens
(c) Epididymis, rete testis, vasa efferentia, vas deferens
(d) Rete testis, epididymis, vasa efferentia, vas deferens
- (B) Where do the seminiferous tubules open into?
- (a) Vas deferens (b) Epididymis (c) Rete testis (d) Urethra
- (C) The vasa efferentia leave the testis and open into which structure?
- (a) Vas deferens (b) Seminal vesicle
(c) Rete testis (d) Epididymis

Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/ Flow chart/Puzzle for the following Concepts

Diagram

- a) Male Gamete
b) Graafian Follicle

Flowchart:

- a) Steps Of Oogenesis

Puzzle:

- a) Arrange the following hormones in the sequence of their secretion in a pregnant woman. hCG, LH, FSH, Relaxin

Q.4. Solve the following Assertion-Reason/Statement based question

- (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:** Testicular lobules are the compartments present in ovaries.

Reason: These lobules are involved in the process of fertilization.

(ii) **Assertion:** Infundibulum is a funnel shaped part closer to ovary.

Reason: The edges of infundibulum help in fertilization.

Q.5. Perform the following Lab. Activity at home and share the video of your activity to the Science PS Group and answer the following questions related to the activity

Activity: Hormonal Control of Reproduction

Materials: Colored markers or pens, Paper.

Procedure:

1. Draw a diagram: Create a diagram showing the hypothalamus, pituitary gland, and reproductive organs.
2. Label the hormones: Use different colors to draw arrows and label the hormones involved in the menstrual cycle (e.g., GnRH, FSH, LH, estrogen, progesterone).
3. Explain the interactions: Write brief notes explaining how each hormone influences the reproductive organs and the menstrual cycle.

(a) What role does the hypothalamus play in regulating the menstrual cycle?

(b) Describe the function of FSH and LH in the female reproductive system.

Q.6. Answer the following Short Answer Type Questions

a. Write the location and functions of following in human testes

(i) Sertoli cells

(ii) Leydig cells

b. Write the function of the seminal vesicle.

c. Name and explain the role of inner and middle walls of human uterus.

d. Write the effect of high concentrations of LH on a mature Graafian follicle.

e. Differentiate between spermatogenesis and spermiogenesis.

Q.7. Answer the following Long Answer Type Questions

a. Explain the role of pituitary and sex hormones in the process of spermatogenesis.

b. What happens to corpus luteum in human female if the ovum is (i) fertilized, (ii) not fertilized?

c. Explain the hormonal control of spermatogenesis in humans.

d. Explain the process of fertilization and implantation in human.

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch-2 From Text Book/Notebook.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-3

Class: XII

Subject: Biology

Ch.No.:3

Ch. Name: Reproductive Health

For recapitulation & solving the assignment the students should refer to their text book of Biology.

Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- | | | |
|------------|--------------------|-----------------------------|
| (i) IVF | (ii) Contraception | (iii) Diaphragms |
| (iv) ZIFT | (v) MTPs | (vi) IUDs |
| (vii) GIFT | (viii) Oral Pills | (ix) Lactational Amenorrhea |
| (x) IUI | | |

Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

Passage

An ideal contraceptive should be user-friendly, easily available, effective and reversible with no or least side-effects. It also should in no way interfere with the sexual drive, desire and/or the sexual act of the user. A wide range of contraceptive methods are presently available which could be broadly grouped into the following categories, namely Natural/Traditional, Barrier, IUDs, Oral contraceptives, Injectables, Implants and Surgical methods.

(i) **Answer the following Questions from the passage: -**

(A) Which of the following is NOT a characteristic of an ideal contraceptive mentioned?

- (a) User-friendly (b) Expensive (c) Effective (d) Reversible

(B) Which category of contraceptive methods includes IUDs?

- (a) Natural (b) Barrier (c) Oral contraceptives (d) Surgical

(C) What does the paragraph suggest about the effect of an ideal contraceptive on sexual drive and desire?

- (a) enhance sexual drive and desire (b) diminish sexual drive and desire.
(c) not interfere with sexual drive and desire (d) None

Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/ Flow chart/Puzzle for the following Concepts

Diagram

- a) Vasectomy
b) Cu-T

Flowchart:

- a) Types Of Contraceptive methods

Q.4. Solve the following Assertion-Reason/Statement based question

i) Assertion: Study of internal structure is called anatomy.

Reason: It is useful for phylogenetic study.

- (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: Family planning is an action plan to attain reproductive health among people.

Reason: Improved programmes covering reproduction related areas were propagated by RCH to create awareness among people.

- ii) **Assertion:** Natality increases both population density and population size.
Reason: Natality increases the number of individuals in an area by births.

Q.5. Perform the following Lab. Activity at home and share the video of your activity to the Science PS Group and answer the following questions related to the activity

Activity: Exploring the Impact of Nutrition on Reproductive Health

Materials: A selection of food items or pictures of foods (fruits, vegetables, whole grains, proteins)
Paper and pen.

Procedure:

1. Create a balanced diet chart: Use the food items or pictures to create a chart of a balanced diet that supports reproductive health.
2. Research nutrients: Identify key nutrients that are important for reproductive health (e.g., folic acid, iron, zinc, omega-3 fatty acids) and list foods rich in these nutrients.
3. Discuss the benefits: Write brief notes on how these nutrients benefit reproductive health.
(a) What are some key nutrients that support reproductive health and in which foods are they found?
(b) Why is folic acid particularly important for women of childbearing age?

Q.6. Answer the following Short Answer Type Questions

- a. Name an IUD that you would recommend to promote the cervix hostility to sperms.
- b. State one reason, why breastfeeding the baby acts as a natural contraceptive for the mother.
- c. Mention one positive and one negative application of amniocentesis.
- d. Mention the problems that are taken care of by Reproduction and Child Healthcare Programme.
- e. What do oral pills contain and how do they act as effective contraceptives?

Q.7. Answer the following Long Answer Type Questions

1. A woman has certain queries as listed below, before starting with contraceptive pills. Answer the following.
 - (i) What do contraceptive pills contain and how do they act as contraceptives?
 - (ii) What schedule should be followed for taking these pills?
2. Name and explain the surgical method advised to human males and females as a mean of birth control. Mention its one advantage and one disadvantage.
3. How do 'implants' act as an effective method of contraception in human females? Mention its one advantage over contraceptive pills.
4. Suggest and explain any three Assisted Reproductive Technologies (ART) to an infertile couple.

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch-3 From Text Book/Notebook.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-4

Class: XII

Subject: Biology

Ch.No.:4

Ch. Name: Principle Of inheritance and variations

For recapitulation & solving the assignment the students should refer to their text book of Biology.

Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- | | | |
|---------------------------|----------------------------|-------------------|
| (i) Heredity | (ii) Point Mutation | (iii) Factors |
| (iv) Alleles | (v)Autosomes | (vi) Allosomes |
| (vii) Variations | (viii)Incomplete Dominance | (ix) Co-Dominance |
| (x) Sex- linked Disorders | | |

Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

Passage

This law is based on the fact that the alleles do not show any blending and that both the characters are recovered as such in the F₂ generation though one of these is not seen at the F₁ stage. Though the parents contain two alleles during gamete formation, the factors or alleles of a pair segregate from each other such that a gamete receives only one of the two factors. Of course, a homozygous parent produces all gametes that are similar while a heterozygous one produces two kinds of gametes each having one allele with equal proportion.

(i) Answer the following Questions from the passage: -

(A) According to the paragraph, what is a fundamental aspect of the law described?

- (a)Blending of alleles.
- (b)Dominance of alleles.
- (c)Segregation of alleles.
- (d) Mutation of alleles.

(B) In the F₁ generation, why is one of the characters not seen?

- (a)Because it is blended with the other character.
- (b)Because it is not inherited.
- (c)Because it is recessive and masked by the dominant allele.
- (d) Because it is lost during gamete formation.

(C) What happens to the alleles during gamete formation?

- (a)They blend together.
- (b) They remain together in pairs.
- (c)They segregate from each other so that a gamete receives only one allele.
- (d)They segregate from each other so that a gamete receives only one allele.

Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/ Flow chart/Puzzle for the following Concepts

Diagram

- A) Test Cross
- B) Co-dominance

Flowchart:

- a) Types of Mutations

Puzzle:

a. Identify a, b, c, d, e and / in the table given below

Syndrome	Cause	Characteristics of affected individual	Sex Male/ Female/ Both
Down's	Trisomy of 21	a (i), (ii)	b
c	XXY	Overall masculine development	d
Turner's	45 with XO	e (i) (ii)	f

Q.4. Solve the following Assertion-Reason/Statement based question

- (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 genetic disease that affects only one parent can have 50% chance of affecting the child.
Reason: An autosomal dominant defective allele can cause a disease even in heterozygous condition.
- ii) **Assertion:** Gametes only receives only one allele of a gene.
Reason: Mitosis occurs during gamete formation leading ti the formation of haploid gametes.

Q.5. Perform the following Lab. Activity at home and share the video of your activity to the Science PS Group and answer the following questions related to the activity

Activity: Simulating Mendel's Pea Plant Experiments

Materials: Green and yellow beads (representing dominant and recessive alleles), Two small bowls or containers, Paper and pen.

Procedure:

1. Prepare the alleles: Place an equal number of green (G) and yellow (g) beads in each bowl. Green beads represent the dominant allele for pea color, and yellow beads represent the recessive allele.
2. Simulate F1 generation: Randomly draw one bead from each bowl and pair them together. Record the pair (e.g., GG, Gg, gg).
3. Repeat: Continue drawing and recording pairs until you have at least 20 pairs to simulate the F1 generation.
4. Determine F2 generation: For each F1 pair, create gametes by splitting the alleles (e.g., a Gg pair produces G and g gametes). Combine the gametes from two F1 plants to form the F2 generation (randomly draw two beads from separate bowls).

(a) What genotypic ratio do you observe in the F2 generation?

(b) What phenotypic ratio do you observe in the F1 generation?

Q.6. Answer the following Short Answer Type Questions

1. Name the type of cross that would help to find the genotype of a pea plant bearing violet flowers.
2. Mention any two contrasting traits with respect to seeds in pea plant that were studied by Mendel.
3. What are 'true-breeding lines' that are used to study inheritance pattern of traits in plants.
4. A garden pea plant (A) produced inflated yellow pod and another plant (B) of the same species produced constricted green pods. Identify the dominant traits.
5. Name the stage of cell division where segregation of an independent pair of chromosomes occurs.

Q.7. Answer the following Long Answer Type Questions

1. Why did TH Morgan select *Drosophila melanogaster* to study sex-linked genes for his lab

experiments?

2. Explain pleiotropy with the help of an example.
3. With the help of one example, explain the phenomena of codominance and multiple allelism in human population.
4. In a dihybrid cross, white-eyed, yellow-bodied female *Drosophila* crossed with red-eyed, brown-bodied male *Drosophila* produced in F₂-generation 1.3% recombinants and 98.7% progeny with parental type combinations. This observation of Morgan deviated from Mendelian F₂-phenotypic dihybrid ratio. Explain, giving reasons Morgan's observation.

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch-4 From Text Book/Notebook.



R.E.D. Group of Schools

Chapter-wise Revision Assignment-5

Class: XII
Ch.No.: 5

Subject: Biology
Ch. Name: Molecular Basis Of
Inheritance

For recapitulation & solving the assignment the students should refer to their text book of Biology.

Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- | | | |
|---------------------|--------------------|----------------|
| (i) Splicing | (ii) Recombination | (iii) Promoter |
| (iv) Severo Ochoa | (v) Operon | (vi) Tailing |
| (vii) Central Dogma | (viii) Spliceosome | (ix) Ligation |
| (x) Codons | | |

Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

Passage

DNA fingerprinting involves identifying differences in some specific regions in DNA sequence called as repetitive DNA, because in these sequences, a small stretch of DNA is repeated many times. These repetitive DNA are separated from bulk genomic DNA as different peaks during density gradient centrifugation. The bulk DNA forms a major peak and the other small peaks are referred to as satellite DNA. Depending on base composition (A : T rich or G:C rich), length of segment, and number of repetitive units, the satellite DNA is classified into many categories, such as micro-satellites, mini-satellites etc. These sequences normally do not code for any proteins, but they form a large portion of human genome.

(i) **Answer the following Questions from the passage: -**

- (A) What is the significance of satellite DNA in the human genome?
(a) They code for essential proteins
(b) They are involved in DNA replication
(c) They form a large portion of the human genome but do not code for any proteins
(d) They regulate gene expression
- (B) What are examples of satellite DNA?
(a) Micro, Mini (b) Centi, Mili (c) Macro (d) None
- (C) How is satellite DNA classified?
(a) Based on the coding potential for proteins
(b) According to the length of DNA strands
(c) Depending on base composition, length of segment, and number of repetitive units
(d) Based on the number of genes present

Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/ Flow chart/Puzzle for the following Concepts

Diagram

- a) A Transcription unit
b) t-RNA

Flowchart:

- a) Parts of 70s and 80s ribosomes

Puzzle:

- a) Study the flowchart given below and answer the questions that follows

I. S-strain → into mice → mice die

II. R-strain → into mice → mice live

III. Heat-killed S-strain + Live R-strain → into mice → A

IV. Heat-killed S-strain + DNase + Live R-strain → into mice → B

- (i) Name the organism and differentiate between its two strains S and R, respectively.
(ii) Write the result A and B obtained in step III and IV, respectively.
(iii) Name the scientist who performed the. Steps I, II and III.

(iv) Write the specific conclusion drawn from the step IV.

Q.4. Solve the following Assertion-Reason/Statement based question

Direction:

- (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:** Study of internal structure is called anatomy.

Reason: It is useful for phylogenetic study.

ii) **Assertion:** In a DNA molecule, A–T rich parts melt before G–C rich parts.

Reason: In between A and T there are three H–bond, whereas in between G and C there are two H-bonds.

(ii) **Assertion:** Histones are basic proteins of major importance in packaging of eukaryotic DNA. DNA and histones comprise chromatin forming the bulk of eukaryotic chromosome.

Reason: Histones are of five major types H1, H2A, H2B, H3 and H4.

Q.5. Perform the following Lab. Activity at home and share the video of your activity to the Science PS Group and answer the following questions related to the activity

Activity: DNA Extraction from Strawberries

Materials: Strawberries, Dish Soap, salt, water, rubbing alcohol, Ziploc bag, coffee filter or cheese cloth, funnel, clear glass.

Procedure:

1. Prepare the extraction solution: Mix 2 teaspoons of dish soap, 1/2 teaspoon of salt, and 1/2 cup of water.
2. Mash the strawberries: Place 2-3 strawberries in a Ziploc bag and mash them thoroughly.
3. Add extraction solution: Add 2 tablespoons of the extraction solution to the bag and mash it gently.
4. Filter the mixture: Place the coffee filter or cheesecloth over the funnel and pour the strawberry mixture through it into a test tube or glass.
5. Add rubbing alcohol: Slowly pour an equal amount of chilled rubbing alcohol down the side of the test tube or glass. The alcohol will form a layer on top of the strawberry mixture.
6. Observe DNA: White, stringy clumps will form between the strawberry layer and the alcohol layer. This is the strawberry DNA.

(a) What is the purpose of using dish soap in the DNA extraction process?

(b) Why is salt added to the extraction solution?

Q.6. Answer the following Short Answer Type Questions

a. Name the enzyme that transcribes hnRNA in eukaryotes.

b. What will happen if DNA replication is not followed by cell division in a eukaryotic cell?

c. Why is it not possible for an alien DNA to become part of chromosome anywhere along its length and replicate normally?

d. Name the specific components and the linkage between them that forms deoxyadenosine.

e. Although a prokaryotic cell has no defined nucleus, yet DNA is not scattered throughout the cell. Explain.

Q.7. Answer the following Long Answer Type Questions

a. Show DNA replication with the help of a diagram.

b. Answer the following questions based on Meselson and Stahl's experiment on E. coli.

- (i) Write the name of the chemical substance used as the only source of nitrogen in the experiment.
- (ii) Why did they allow the synthesis of the light and the heavy DNA molecules in the organism?
- (iii) How did they distinguish the heavy DNA molecules from the light DNA molecules?
- (iv) Write the conclusion the scientists arrived at, at the end of the experiment.
- Why is DNA molecule considered as a better hereditary material than RNA molecule?
 - How is hnRNA processed to form mRNA?
 - How would lac operon operate in E. coli growing in a culture medium, where lactose is present as source of sugar?

Part-4 – Learning Homework

- **Learning Homework:** Learn Ch-5. From Text Book/Notebook.

Summer Holidays Homework

SESSION: 2024-25

CLASS – 12th

Subject: Computer Science

Text Book: Computer Science with Python

1. Syllabus Covered upto MAY END

- Chapter No.- 1 Python Revision Tour-1
- Chapter No.- 2 Python Revision Tour-2
- Chapter No.- 3 Working with Functions
- Chapter No.- 5 File Handling & Exception Handling
- Chapter No.- 7 Data Structure

2. List of all new concepts taught upto MAY END

- Lists, Tuples & Dictionaries in Python
- If conditionals and Looping statements
- Different sorting techniques
- Functions and their types
- Programming using functions in Python
- Different types of files in Python
- Programming using text files
- Programming with binary files
- Programming with CSV files

3. Summer Holiday Homework:

- **Reading Homework:**
 - **Section - A:** Pre-Reading of Next Two Chapters (Chapter-7 Data structures and Ch-8 Computer Networks-1)
- **Written Homework:**
 - **Section – B:** Chapter-wise Revision Assignments
 - **Section – C:** Creative Project/ Model

4. Tools required for doing Homework:

- Text Book
- Notebook
- A4 Sheets
- Resources as per project

5. Instruction/Guidelines for Reading Homework:

- **Section–A : Pre-Reading Homework**
 - Do the Pre-Reading of Chapter No. 8 and 9.
 - Write all the difficult words & their meanings of above chapters in Computer Science N.B.

6. Instruction/Guidelines for Written Homework:

- **Section–B :** Do the given Assignments on A4 sheets.
- **Section–C :** Creative Project/ Models
 - Topic: Roll no 1 to 8
 - Write a Python script that traverses through an input string and prints its characters in different lines- two characters per line.
 - What is the output of the following?
x=12
for I in x:

```
print(I)
```

- Write a script in Python that displays digit at one's position digit of the integer.
- Write a script in Python to check whether an entered string is palindrome or not?
- What is the output of the following code?

```
i=9
while True:
    if(i+1)%4==0:
        break
    print(i,end=' ')
    i+=1
```

- Topic: Roll no 9 to 16

- Draw a table showing precedence of different operators we use in Python?
- What will be output of the following code?

```
tp1=(2,4,3)
tp3=tp1*2
print(tp3)
```

- Name the function required checking if a string contains only uppercase letters?
- Name some of the functions defined in math module (Atleast five)?
- Write a program to check whether a number entered is prime or not?

- Topic: Roll no 17 to 24

- Write a Python script that traverses through an input string and prints its characters in different lines- two characters per line.
- What is the output of the following?

```
x=12
for I in x:
    print(I)
```

- Write a script in Python that displays digit at one's position digit of the integer.
- Write a script in Python to check whether an entered string is palindrome or not?
- What is the output of the following code?

```
i=9
while True:
    if(i+1)%4==0:
        break
    print(i,end=' ')
    i+=1
```

- Topic: Roll no 25 to 31

- Draw a table showing precedence of different operators we use in Python?
 - What will be output of the following code?
- ```
tp1=(2,4,3)
tp3=tp1*2
print(tp3)
```
- Name the function required checking if a string contains only uppercase letters?
  - Name some of the functions defined in math module (Atleast five)?

Write a program to check whether a number entered is prime or not?

**7. Marking scheme for Computer Science homework: –**

- **Section-A : Pre-Reading HW**
  - Difficult words & their meanings in N.B. **6 marks**
- **Section-B : Chapter wise Revision Assignments** **7 marks**
- **Section-C : Creative Project/Working Model** **7 marks**

**Total marks of Computer Science H.W. 20 marks**

**8. Important Note:**

- **All students must submit their vacation Homework of All Subjects for Assessment by teacher on 1st July 2024 by all means. Five marks will be deducted for per day of delay after 1st July 2024.**



# R.E.D. Group of Schools

## Chapter-wise Revision Assignment-1

Class: 12<sup>th</sup>  
Ch. No. : 1

Subject: Computer Science  
Ch. Name: Python Revision Tour-1

### Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- |                      |                |                |
|----------------------|----------------|----------------|
| (i) Block            | (ii) Coercion  | (iii) Constant |
| (iv) Empty Statement | (v) Identifier | (vi) Keyword   |
| (vii) Lexical Unit   | (viii) Literal | (ix) Operator  |
| (x) Token            |                |                |

### Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

#### Passage

In a program, statements may be executed sequentially, selectively or iteratively. Every programming language provides constructs to support sequence, selection or iteration. A conditional is a statement set which is executed repeatedly, until the end condition is satisfied.

#### Answer the following Questions from the passage:-

- (A) A conditional is a statement set which is executed repeatedly, until the end condition is satisfied? Explain & Interpret.
- (B) What do you mean by sequence?
- (C) What do you mean by iteration?

### Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/Picture/ Flow chart /Puzzles for the following Concepts

#### **Diagram/Picture:**

- a) None  
b) None

#### **Flowchart:**

- a) Draw a Flowchart of Plain if conditionals.

#### **Puzzle:**

- a) None

Q.4. Solve the following Assertion-Reason/Statement based question

(i) Assertion (A): “”A Sample Python String”” is a valid in Python.

Reason(R): Triple Quotation marks are not valid in Python.

- a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).  
b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).  
c) Assertion (A) is true and Reason (R) is false.  
d) Assertion (A) is false and Reason (R) is true.

(ii) Assertion (A): If and For are legal statements in Python.

Reason(R): Python is a case sensitive and its basic selection and looping statements are in lower case.

- a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).  
b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).  
c) Assertion (A) is true and Reason (R) is false.  
d) Assertion (A) is false and Reason (R) is true.

Q.5. Write the Shortcut Key of following terms/abbreviations:

- (i) Shortcut to run a python program.  
(ii) Shortcut to open a python program.

Q.6. Answer the following Short Answer Type Questions

1. What are Tokens in Python?
2. How are keywords different from identifiers?
3. What are literals in Python?

4. What are Operators? What is their function?
5. What are variables? How are they important for a program?

**Q.7. Answer the following Long Answer Type Questions**

1. WAP in python that returns True if the input number is even number, False otherwise.
2. WAP in python program that calculates and prints the number of seconds in a year.
3. WAP to print the cubes of numbers in the range 15 to 18.
4. What are data types? How are they important?
5. What is entry-controlled loop? Which loop is entry-controlled loop in python?

**Part-4 – Learning Homework**

- **Learning Homework:** Learn Ch-1 From Text Book/Notebook.



# R.E.D. Group of Schools

## Chapter-wise Revision Assignment-2

Class: 12<sup>th</sup>  
Ch. No.: 2

Subject: Computer Science  
Ch. Name: Python Revision Tour-II

### Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- |                |              |                |
|----------------|--------------|----------------|
| (i) Dictionary | (ii) Index   | (iii) List     |
| (iv) Lookup    | (v) Mapping  | (vi) Nesting   |
| (vii) Packing  | (viii) Tuple | (ix) Unpacking |
| (x) Sorting    |              |                |

### Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

#### Passage

The term ‘string slice’ refers to a part of the string, where strings are sliced using a range of indices. that is, for a string say name, if we give name[n:m] where n and m are integers and legal indices, Python will return a slice of the string by returning the characters falling between indices n and m starting at n, n+1, n+2.....till m-1.

#### Answer the following Questions from the passage: -

- (A) The term ‘string slice’ refers to a part of the string, where strings are sliced using a range of indices. Explain & Interpret.
- (B) What do you mean by term slice?
- (C) What will be the starting and ending element of a slice falling between indices n and m?

### Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/Picture/ Flow chart /Puzzles for the following Concepts

#### **Diagram/Picture:**

- a) None  
b) None

#### **Flowchart:**

- a) None

#### **Puzzle:**

- a) None

Q.4. Solve the following Assertion-Reason/Statement based question

(i) Assertion (A): Dictionary is mutable but their keys are immutable.

Reason(R): The values of a dictionary can change but keys of dictionary cannot be changed through them data is hashed.

- a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).  
b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).  
c) Assertion (A) is true and Reason (R) is false.  
d) Assertion (A) is false and Reason (R) is true.

(ii) Assertion (A): Lists and Tuples are similar sequence types of Python, yet they are two different datatypes.

Reason(R): List sequence is mutable and Tuple sequences are immutable.

- a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).  
b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).  
c) Assertion (A) is true and Reason (R) is false.  
d) Assertion (A) is false and Reason (R) is true.

Q.5. Write the Shortcut Key of following terms/abbreviations:

- (i) Shortcut to run a python program.  
(ii) Shortcut to open a python program.

**Q.6. Answer the following Short Answer Type Questions**

1. What is the internal structure of a python string?
2. Discuss the utility and significance of Lists, briefly.
3. What are the two ways to add something to a list?
4. What are the two ways to remove something from a list?
5. Discuss the utility and significance of Tuples, briefly.

**Q.7. Answer the following Long Answer Type Questions**

1. WAP in python to sort a list using Bubble sort.
2. WAP in python to sort a sequence using insertion sort.
3. WAP to print the cubes of numbers in the range 15 to 18.
4. What are data types? How are they important?
5. What is entry-controlled loop? Which loop is entry-controlled loop in python?

**Part-4 – Learning Homework**

**Learning Homework:** Learn Ch-2 From Text Book/Notebook.



# R.E.D. Group of Schools

## Chapter-wise Revision Assignment-3

Class: 12<sup>th</sup>  
Ch. No.: 3

Subject: Computer Science  
Ch. Name: Working with Functions

### Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- |                        |                        |                       |
|------------------------|------------------------|-----------------------|
| (i) Argument           | (ii) Flow of Execution | (iii) Parameter       |
| (iv) Function          | (v) Actual Argument    | (vi) Actual Parameter |
| (vii) Formal Parameter | (viii) Formal Argument | (ix) Local Scope      |
| (x) Global Scope       |                        |                       |

### Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

#### Passage

Broadly, Python functions can belong to one of the following three categories: -

- 1). **Built-in Functions:** - These are pre-defined functions and are always available to use. You have used some of them-len(), type(), int(), input() etc.
- 2). **Functions defined in modules:** - These functions are pre-defined in particular modules.
- 3). **User defined functions:** - These are defined by the programmer. As programmers you can create your own functions.

#### Answer the following Questions from the passage: -

- (A) As programmers you can create your own functions. Explain & Interpret.
- (B) What do you mean by len() function?
- (C) Why we use input() function in a python program?

### Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/Picture/ Flow chart /Puzzles for the following Concepts

#### **Diagram/Picture:**

- a) None
- b) None

#### **Flowchart:**

- a) None

#### **Puzzle:**

- a) None

Q.4. Solve the following Assertion-Reason/Statement based question

(i) **Assertion (A): A function is a subprogram.**

**Reason(R): A function exists within a program and works within it when called.**

- a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).
- b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).
- c) Assertion (A) is true and Reason (R) is false.
- d) Assertion (A) is false and Reason (R) is true.

(ii) **Assertion. Non-default arguments cannot follow default arguments in a function call.**

**Reason. A function call can have different types of arguments.**

- a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).
- b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).
- c) Assertion (A) is true and Reason (R) is false.
- d) Assertion (A) is false and Reason (R) is true.

Q.5. Write the Shortcut Key of following terms/abbreviations:

- (i) Shortcut to run a python program.
- (ii) Shortcut to open a python program.

**Q.6. Answer the following Short Answer Type Questions**

1. A program having multiple functions is considered better designed than a program without any functions. Why?
2. What do you understand by flow of execution?
3. What are arguments? What are parameters?
4. What is the utility of: (i) default arguments, (ii) keyword arguments?
5. Explain with a code example the usage of default arguments and keyword arguments.

**Q.7. Answer the following Long Answer Type Questions**

1. What is scope? What is the scope resolving rule of Python?
2. When is global statement used? Why is its use not recommended?
3. What do you understand by local and global scope of variables? How can you access a global variable inside the function, if function has a variable with same name?
4. Write a function that receives two numbers and generates a random number from that range. Using this function, the main program should be able to print three numbers randomly.
5. Write a function that receives two string arguments and checks whether they are same-length strings (returns True in this case otherwise False).

**Part-4 – Learning Homework**

**Learning Homework:** Learn Ch-3 From Text Book/Notebook.



# R.E.D. Group of Schools

## Chapter-wise Revision Assignment-4

Class: 12<sup>th</sup>  
Ch. No.: 5

Subject: Computer Science  
Ch. Name: File Handling

### Part-1 – for Vocabulary skills

Q.1. Define the following Key Terms:

- |                 |                   |                   |
|-----------------|-------------------|-------------------|
| (i) File        | (ii) File Mode    | (iii) Stream      |
| (iv) Text Files | (v) Data Files    | (vi) Binary Files |
| (vii) Delimited | (viii) raw string | (ix) File Handle  |
| (x) read()      |                   |                   |

### Part-2 – Reading skills

Q.2. Read the following Passage from the Chapter & answer the questions.

#### Passage

Linear lists or Arrays refer to a named list of finite number  $n$  of similar data elements. Each of the data elements can be referenced respectively by a set of consecutive numbers, usually  $0, 1, 2, 3, \dots, n$ . If the name of a linear list of 10 elements in LIL, then its elements will be referenced as shown: LIL[0], LIL[1], LIL[2], .....LIL[9]. Arrays can be one dimensional, two dimensional or multi-dimensional. In python, arrays are implemented through List data types as Linear Lists or through NumPy arrays.

#### Answer the following Questions from the passage: -

- (A) Arrays refer to a named list of finite number  $n$  of similar data elements. Explain & Interpret.
- (B) What do you mean by Linear Lists?
- (C) How arrays can be implemented?

### Part-3 – Application skills of Subject Tools & Concepts

Q.3. Draw the Diagram/Picture/ Flow chart /Puzzles for the following Concepts

#### **Diagram/Picture:**

- a) None
- b) None

#### **Flowchart:**

- a) None

#### **Puzzle:**

- a) None

Q.4. Solve the following Assertion-Reason/Statement based question

(i) **Assertion (A):** A linear list refers to a named list of finite number of similar data elements.

**Reason(R):** Similar type of elements grouped under one name make a linear list.

- a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).
- b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).
- c) Assertion (A) is true and Reason (R) is false.
- d) Assertion (A) is false and Reason (R) is true.

(ii) **Assertion.** The file modes "r", "w", "a" work with text files, CSV files and TSV files alike.

**Reason.** The CSV and TSV are types of delimited text files only.

- a) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).
- b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).
- c) Assertion (A) is true and Reason (R) is false.
- d) Assertion (A) is false and Reason (R) is true.

Q.5. Write the Shortcut Key of following terms/abbreviations:

- (i) Shortcut to run a python program.
- (ii) Shortcut to save a python program.

Q.6. Answer the following Short Answer Type Questions

1. Write a method in Python to read the content from a text file diary.txt line by line and display the

same on screen.

2. Write a method in Python to write multiple line of text contents into a text file mylife.txt.line.
3. What will be the output of the following code?
4. What is the utility of: (i) default arguments, (ii) keyword arguments?
5. Explain with a code example the usage of default arguments and keyword arguments.

**Q.7. Answer the following Long Answer Type Questions**

1. Write a program that reads a text file and creates another file that is identical except that every sequence of consecutive blank spaces is replaced by a single space.
2. Write a program to count the words "to" and "the" present in a text file "Poem.txt".
3. Write a function AMCount() in Python, which should read each character of a text file STORY.TXT, should count and display the occurrence of alphabets A and M (including small cases a and m too).
4. Write a program to count the number of upper-case alphabets present in a text file "Article.txt".
5. Write a program that copies one file to another. Have the program read the file names from user?

**Part-4 – Learning Homework**

**Learning Homework:** Learn Ch-5 From Text Book/Notebook.

# Summer Holidays Homework

SESSION: 2024-25

CLASS – 12th

Subject: Physical education

Text Book: Phy.edu.

## 1. Syllabus Covered upto MAY END

- Chapter No.- 1 Management of sporting Events
- Chapter No.- 2 Children and women in sports
- Chapter No.- 3 Yoga as preventive measure for lifestyle disease
- Chapter No.- 4 Physical education and sports for CWSN

## 2. List of all new concepts taught upto MAY END

- Concept of inclusion in sports, its need and implementation
- Advantages of physical activities for CWSN
- Strategies to make physical activities accessible for CWSN

## 3. Summer Holiday Homework:

- **Reading Homework:**
  - **Section – A:** Pre-Reading of Next Two Chapters
- **Written Homework:**
  - **Section – B:** Chapter-wise Revision Assignments
  - **Section – C:** Current Affairs Project
  - **Section – D:** Creative Project/ Working Model
  - **Section – E:** Chart Work

## 4. Tools required for doing Homework:

- Text Book
- Notebook
- A4 Sheets
- Resources as per activity

## 5. Instruction/Guidelines for Reading Homework:

- **Section – A: Pre-Reading Homework**
  - Do the Pre-Reading of Chapter No. 05 and 06
  - Write all the difficult words & their meanings of above chapters in Physical Edu. N.B.

## 6. Instruction/Guidelines for Written Homework

- **Section – B:** Do the given Assignments on A4 Sheet.
- **Section – C: Current Affairs Project:**
  - Collecting current news of five National, five International and five Sports of Month June
- **Section – D: Creative Project/ Models**
  - Topic: Roll no 1 to 12 (Postural deformities)
  - Topic: Roll no 13 to 24 (21 teams knockout fixture)
  - Topic: Roll no 25 to 36 (Bhugasana)
- **Section – E: Chart Work**
  - Topic: Roll no 1 to 12 (BMI Chart)
  - Topic: Roll no 13 to 24 (Basal metabolic rate)
  - Topic: Roll no 25 to 36 (committee chart)

## 7. Marking scheme for Physical Education Homework: –

- **Section-A : Pre-Reading HW**

- Difficult words & their meanings in N.B. **4 marks**
- **Section-B : Chapter wise Revision Assignments** **4 marks**
- **Section-C : Project on Current Affairs** **4 marks**
- **Section-D : Creative Project/Working Model** **4 marks**
- **Section-E : Chart** **4 marks**

**Total marks of Physical Education H.W. 20 marks**

**8. Important Note:**

**All students must submit their vacation Homework of All Subjects for Assessment by teacher on 1st July 2024 by all means. Five marks will be deducted for per day of delay after 1st July 2024.**



# R.E.D. Group of Schools

## Chapter-wise Revision Assignment-1

Class: 11th

Ch. No.: 1 to 2

of sporting events, Children and women in sports

Subject: Phy. Edu.

Ch. Name: Management

### Part-1 – for Vocabulary skills

**Q.1. Define the following Key Terms:**

- |                    |                 |                  |
|--------------------|-----------------|------------------|
| (i) Osteoporosis   | (ii) Intramural | (iii) Extramural |
| (iv) Technological | (v) Adolescents | (vi) Tournament  |
| (vii) Disorder     |                 |                  |

### Part-2 – Reading skills

**Q.2. Read the following Passage from the Chapter & answer the questions.**

**Passage** In the realm of sports, meticulous planning is the cornerstone of success. From individual athletes to entire teams, the journey towards achieving peak performance begins with a well-crafted plan. This plan encompasses a range of elements, including setting clear and achievable goals, mapping out training regimens tailored to individual needs, strategizing for competitions, and managing resources effectively. Whether it's outlining a season-long training program or preparing for a single game, the ability to plan and adapt is essential for athletes and coaches alike. Through strategic planning, athletes can maximize their potential, overcome challenges, and ultimately excel in their chosen sport."

**Answer the following Questions from the passage:-**

- (A) What is planning?  
(B) Through strategic planning athletes can maximize their \_\_\_\_\_?  
(C) What is the aim of planning?

### Part-3 – Application skills of Subject Tools & Concepts

**Q.3. Solve the following questions based on Maps or Diagram or Graphs given below**

**Diagram:**

- a) Trikonasana  
b) 7 teams league fixture

**Q.4. Solve the following Assertion-Reason/Statement based question**

(i) **Assertion (A): Any tournament will get adversely affected if there is a lack of coordination among the related administrators.**

**Reason (R): Everyone shall know his duty or work in advance so that there is proper coordination among all.**

- i. Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).  
ii. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).  
iii. Assertion (A) is true, but Reason (R) is false.  
iv. Assertion (A) is false, but Reason (R) is true.

(ii) **Assertion (A): Round shoulders are an unnatural posture characterized by an exaggerated curvature of the upper back.**

**Reason (R): Due to postural deformity the knee knocks each other.**

- v. Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).  
vi. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).  
vii. Assertion (A) is true, but Reason (R) is false.  
viii. Assertion (A) is false, but Reason (R) is true.

**Q.5. Analyze the given picture & describe it in your own words**

**Picture :-**



**Q.6. Answer the following Short Answer Type Questions**

- a) What is staircase methods?
- b) What is extramural tournaments?
- c) What do you mean by knockout tournaments?
- d) What exercises children and adolescents aged 5-17 years must perform?
- e) Explain the causes of scoliosis?

**Q.7. Answer the following Long Answer Type Questions**

- a) Explain the causes , precautions and remedies of knock knees?
- b) Explain the pre tournaments committees?
- c) Draw a fixture of 7 teams of tabular method?
- d) Draw a fixture of 20 teams providing 4 special seeding in a knockout tournament?

**Part-4 – Learning Homework**

- **Learning Homework:** Learn Ch- 01 & 02 From Text Book/Notebook.



# R.E.D. Group of Schools

## Chapter-wise Revision Assignment-2

Class: 12th  
Ch. No.: 3,4

Subject: Phy. Edu.  
Ch. Name: Yoga as preventive

measure for lifestyle disease, Physical education and sports for CWSN

### Part-1 – for Vocabulary skills

**Q.1. Define the following Key Terms:**

- |                 |                   |              |
|-----------------|-------------------|--------------|
| (i) Obesity     | (ii) Hypertension | (iii) Asthma |
| (iv) Posture    | (v) Disability    | (vi) Anxiety |
| (vii) Implement |                   |              |

### Part-2 – Reading skills

**Q.2. Read the following Passage from the Chapter & answer the questions.**

**Passage** Yoga is a practice that originated in ancient India and has evolved over thousands of years. It encompasses physical postures, breathing exercises, meditation, and ethical principles aimed at promoting physical, mental, and spiritual well-being. Through regular practice, individuals can improve flexibility, strength, balance, and mental clarity. Yoga is not just a form of exercise but a holistic lifestyle that encourages self-awareness, mindfulness, and inner peace. Its benefits extend beyond the physical realm to promote harmony within oneself and with the surrounding world."

### Answer the following Questions from the passage:-

1. Yoga encourages \_\_\_\_\_ in an individual?
2. Yoga helps to improve?
3. Yoga is originated from?

### Part-3 – Application skills of Subject Tools & Concepts

**Q.3. Solve the following Assertion-Reason/Statement based question**

(i) **Assertion (A):** In India, there are most number of diabetic patients, both adults and children are suffering from this disease

**Reason (R):** Most people are affected by Type 2 diabetes in India.

- i. Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).
- ii. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
- iii. Assertion (A) is true, but Reason (R) is false.
- iv. Assertion (A) is false, but Reason (R) is true.

(ii) **Assertion (A):** Divyangs get more and more opportunities by participating in physical activities with the inclusion.

**Reason (R):** It does not lead to increase in the self confidence and they also learn different skills.

- i. Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).
- ii. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
- iii. Assertion (A) is true, but Reason (R) is false.
- iv. Assertion (A) is false, but Reason (R) is true.

**Q.4. Analyze the given picture & describe it in your own words**

**Picture :-**



**Q.5. Answer the following Short Answer Type Questions**

- a) What is the meaning of yoga?
- b) What is scoliosis?
- c) Define disability?
- d) What do you know about Deaflympics?
- e) Write down symptoms of diabetes?

**Q.6. Answer the following Long Answer Type Questions**

- a) Discuss the asanas helpful for a person suffering from Asthma?
- b) What do you mean by Obesity? Explain asanas which prevent Obesity.,
- c) Explain the concept and implementation of inclusive education?
- d) Explain broadly the paralympics games?

**Part-4 – Learning Homework**

**Learning Homework:** Learn Ch- 03 and 04 From Text Book/Notebook.