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

CLASS – 11th

Subject: English   **Text Book: -** N.C.E.R.T. (Hornbill, Snapshot) and BBC Compacta

1. **Syllabus Covered up to MAY END**

   Book: Hornbill

   o Chapter No.-1 Chapter Name- The Portrait of a Lady

   o Chapter No.- 2 Chapter Name- We are not Afraid to Die

   o Poem No.- 1 Poem Name- A Photograph

   o Poem No.-2 Poem Name- The Laburnum Top

   Book: Snapshots

   o Chapter No.- 1Chapter Name- The Summer of the Beautiful White Horse

2. **List of all new concepts taught up to MAY END (Writing Skills)**

   o Reading Comprehension

   o Note Making and Summarization

   o Advertisements

   o Speech Writing

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

   o Reader Book

   o Notebook

   o Scrap Book

   o Resources as per activity

4. **Date of Submission of Homework: 3rd July, 2023**

5. **Formative Assessment based Homework:**

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

      ➢ 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

Note: - Do the following homework in scrap book

- ✓ 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
  - ❖ End
- ✓ 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

2. Read any English newspaper once in a week and find out 5 new words from it & frame a sentence from it and present them in the same scrap book

Vocabulary Homework

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

  Total 45 words should be included in your dictionary

o **Section-B-** Speaking Homework

1. Students will practice on one of the given topics: -
- ➢ Benefits and challenges of living in a joint family.

  OR
- ➢ Build a conversation of eight to ten sets of exchange, with your grandmother discussing the incidents that happened in your school that day.

  OR
- ➢ Every member contributes to form a happy family. Share your views for a minute or two

Students will prepare speaking activity video on any one of the above topics and share with English teachers on WhatsApp group

o **Section-C-**Creative Writing Homework

Creative Writing Homework (Do any two creative writing topic)

- ➢ **Travelogue writing:**

  There are many tourist attractions. They are popular for many reasons. Some places are popular for their natural beauty whereas others are for their historical and religious importance. Write the names of the places that you would like to visit in our country: Naturally beautiful places, places of historical and religious importance. Have you ever visited such places on your holidays? Write down the places you have visited so far. Write detailed description of a visited place in the form of a paragraph.

- ➢ **Character portrait/ sketch writing** of your favorite character from the movie "A Little Dream" on A4 size sheet.

- ➢ **Review writing :**

Discuss and explain the movie 'The Jungle Book' with the help of the following points.
- Classic element.
- Fantasy.
- Photorealism
- Blending of emotions

- o **Section-D-** Learning and Pre reading Homework
  1. **Pre reading** – Snapshot (Ch-2 The Address) , Hornbill (Ch-3 Discovering Tut: The Saga Continues)

  - ➢ **Learning** - Ch 1 The Portrait of a Lady, Ch 2 We are not Afraid to Die

    Poem 1 A Photograph, Poem 2 The Laburnum Top

    Ch. 1, The Summer of the Beautiful White Horse

- o **Section-E-** 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

Following projects can be given for Grammar Topic covered in the month of April and May:-
  2. 12 tenses formula with examples

        OR

    Verb project chart

        OR

    Parts of speech and application
  3. Grammar flip book with Transformation of Sentences (Narration/Voice)

        OR

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

R.E.D. Group of Schools
Summer Holidays Homework
SESSION: 2023-24
CLASS – 11th

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

1. **Syllabus Covered upto MAY END**
   - Chapter No.- 0 Chapter name - **Mathematical tool**
   - Chapter No.- 2 Chapter Name - **Unit and measurement**
   - Chapter No.- 3 Chapter Name - **Motion in straight line**
   - Chapter No.- 4 Chapter Name - **Motion in Plane**
2. **List of all new concepts taught upto MAY END**
   - Concept of unit and dimensional formula
   - Concept of scalar quantity, vector quantity and there algebra
   - Concept of uniform motion and non uniform motion
   - Motion of partical in a plane
3. **Formative Assessment based Homework:**
   - **Section-A-**Creative Project/ Working model/ Inquiry based project.
   - **Section-B-**Diagram and Labeling assessment activity.
   - **Section-C-**Experiment based activity.
   - **Section-D-** Derivations.
4. **Summative Assessment based Homework:**
   - **Section-E- Chapter-wise Assignments**
5. **Tools required for doing Homework:**
   - NCERT Text Book, S.L. Arora book
   - Notebook
   - A$_4$Sheets, Internet
   - Resources as per activity
6. **Instruction/Guidelines for Formative Assessment based Homework:**
   - **Section-A-Creative Project/ Working model/ Inquiry based project.**

Topic	Roll No.
To Make A Simple Newton's Cradle	1 to 10
To make a balancing scale	11 to 20
To make a Balloon hovercraft	21 to 30
To make a electro magnetic	31 to 40

I   **(Roll no 1 to 10**) **Topic:**   To To Make A Simple Newton's Cradle

Materials Required: Jumbo Craft Sticks, (6) Marbles, String, Scissors, Glue, Tape, Pencil Hot Glue Gun/Glue

Steps to prepare:
- ➢ Glue (4) craft sticks together at the corners to make a square. Repeat with (4) more crafts sticks. Let dry. These will be the sides of the frame.
- ➢ Cut string into (6) equal pieces approximately 8" longHot glue a marble to the center of one of the pieces of string. Repeat to end up with (6) separate marbles, each glued to the center of a string.
- ➢ Make (6) marks along two craft sticks every ½". Make sure the marks are centered on the sticks. Tape one end of the strings with marbles attached along one of the craft sticks at each mark. Set aside.

II   **(Roll no 11 to 20) Topic: To make a balancing scale**

Materials required: two identical paper plates, string, pencil, tape, glue, a pair of scissors, and a cloth hanger. Punch three holes in both the paper plates. Make sure the holes are close to the outer boundary of the plates

Steps to prepare:-
- ➢ Out six pieces of string that are equal in length. The length of each string should be approximately equal to 2 ft.
- ➢ Attach one end of each string to the individual holes punched in the plates. Hold one of the paper plates and take the three strings attached to the holes grooved into it. Properly stretch the strings and tie them

together in a single knot. Perform the same procedure with the other plate.

III **(Roll no 21 to 30) Topic :- To make a Balloon hovercraft**

Material Required :- CD/DVD, a bottle cap, a balloon, glue or tape, and a pair of scissors.

Steps to prepare:-

➢ Groove a small hole right in the middle of the bottle cap. The diameter of the hole should be approximately equal to the diameter of a regular plastic straw.

➢ Stick the bottle cap in the centre of the CD/DVD with the help of glue or tape. Inflate the balloon, pinch it from the opening side to hold the air inside, and fix it to the boundary of the bottle cap in such a way that the air present inside the balloon can escape through the hole in the bottle cap easily.

IV **(Roll no 31 to 40) Topic :- To make a electro magnetic**

Material required: battery, an iron nail, a switch, and insulated copper wire.

Steps to prepare:-Connect one terminal of the switch to one end of the copper wire. Connect a battery between the free ends of the wire and the switch. Now, if you push the switch and move the nail near ferromagnetic materials, the object gets attracted and stick to the nail.

Hot Glue Gun/Glue

o **Section-B- Diagram and Labeling assessment activity.**
  • Draw well labelled diagrams of the following:
    ➢ Flow chart of Seven fundamental units
    ➢ Distance time graph for uniform motion.
    ➢ Position time graph for uniform acceleated motion
    ➢ Velocity time graph for accelerated motion
    ➢ Velocity time graph for uniform motion

o **Section-C-Experiment based activity.**
  • One activity which can be performed at home with parental supervision.

  Name of the Activity: Marble Roller Coaster: Converting Potential Energy to Kinetic Energy

  Material Required: insulation Glass , marbles, Utility knife, Masking tape , table stop watch

  Procedure: Cut the foam pipe insulation in half (the long way) to make two U-shaped channels.

1. The illustration below shows the foam pipe insulation, end-on.The insulation comes with one partial cut along the entire length. Complete this cut with the utility knife (yellow circle in the illustration above)To make a roller coaster track, tape two (or more) lengths of the foam U-channel together, end-to-end. The joint between the two pieces should be as smooth as possible.

2. In order to measure the velocity of the marble, you'll need a way to measure how much distance the marble travels during a measured time interval Use the stopwatch to measure the time it takes for the marble to travel a certain length along the Masonite track.

3. Measure the height of the starting point for the track.

4. Measure the mass of the marble.

5. Calculate the gravitational potential energy of the marble at the starting point.

6. Run a single marble down the track 10 separate times.
   a. For each run, use your striped measuring stick and stopwatch to measure the velocity of the marble as it completes the track.
   b. Calculate the average of your 10 measurements.
   c. More advanced students should also calculate the standard deviation.

7. From your velocity measurement and the mass of the marble, calculate the kinetic energy of the marble.

8. Repeat the velocity measurement at various points on the track by cutting the track and allowing the marble to continue on in a straight line on a smooth surface. Use your striped measuring stick and stopwatch to measure the velocity of the marble.
    ➢ Observation: ➢ Conclusion: ➢ Precautions:

o **Section-D- Derivations**
  • **Learning Homework:**
  • **Derivations:**
    1) Derivation of dimensional formula of force, Workdone , Garavitional constant   and dielectric constant
    2) Equation of trajectory of horizontal projectile
    3) Equation of trajectory of Angular projectile
    4) Derive the three equation of motion with calculus method
    5) Derive the Formula of distance traveled in nth time in a uniform motion

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

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

Part-1

(Case Study Question/Activity based Question)

Instruction: Read the following passage and answer the question no.

Case Study- 1

Measurement of any physical quantity involves comparison with a certain basic, arbitrarily chosen, internationally accepted reference standard called unit. The units for the fundamental or base quantities are called fundamental or base units. The units of all other physical quantities can be expressed in terms of fundamental units and are thus named as derived units. In SI system units of seven base quantities are taken as the fundamental units. The nature of a physical quantity is described by its dimensions. All the physical quantities can be expressed in terms of some combination of seven fundamental unit is. The dimensions of a physical quantity are thus the powers to which the base quantities are raised to represent that quantity

Q1 Which of the following is not a fundamental unit ?

 (a) Current   (b) meter   (c) second   (d) kilogram

.**Q2. Which one of the following is a dimensionless quantity?**

 (a) Mass   (b) Weight   (c) Specific weight   (d) Reynold's number

Q3.If the unit of force and length are doubled, the unit of energy will be

(a) 1/2 times   (b) 2 times   (c) 4 times   (d) 1/4 times

 Q4. Which of the following physical quantity is dimensionless?

(a) angle   (b) specific gravity   (c) strain   (d) all of these

Q5. Give that the displacement of a particle is given by x = A sin kt, where t denotes the time. The unit of k is

(a) radian   (b) metre   (c) hertz   (d) second

Part-2

Subject Specific conceptual definitions & Application based Questions

Q.4. Define the following terms:-

   (i) intercept

   (ii) slope

   (iii) differentiation

   (iv) definite integration

Q.5. Differentiate the following:-
i) mass and weight
ii) definite integration and indefinite integration
iii)slope and intercept
iv) derivative and integration

Q.6. Application based Questions
1.). Solve the following equation $3x2 - 8x + 5 = 0$ for the value of x.
2) A particle starts from origin with uniform acceleration. Its displacement after t seconds is given in metres by the relation $A = 5 t2 + 4t +8$ Calculate the magnitude of its
(i) initial velocity (ii) velocity at t = 4 s (iii) displacement at t = 5 s

Q.7. Assertion and reason
Directions: These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.
(a)If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
(b)If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
(c)If the Assertion is correct but Reason is incorrect.
(d)If both the Assertion and Reason are incorrect.
Q1.Assertion: Force cannot be added to pressure.
Reason: Because their dimensions are different.
Q2.Assertion: Parallax method cannot be used for measuring distances of stars more than 100 light years away.
Reason: Because parallax angle reduces so much that it cannot be measured accurately.
Q3.Assertion: Rate of flow of a liquid represents velocity of flow.
Reason: The dimensions of rate of flow are [M0L1T-1]

Q.8.Conceptual and Mental Ability Based Type Questions
1. Make the graph for equations:
    (i) $x^2 = ky$
    (ii) $x^2 + y^2 = a^2$
2. Evaluate the following
    (i) $((999)^{1/3}$
    (ii) $(101)^{1/2}$
3. Find the values of:
    (i) Sin (270°)
    (ii) Cos (120°)
    (iii) tan (150°)
4. Find slope & intercept of following equations:-
    (i) $10y + 5x = 15$,
    (ii) $-y + 4x = 2$
5. Differentiate the following functions with respect to x.
    (i) sin 3x.   (ii) x^7 (iii) Cos x^2 (iv) 4x tan x
6. Solve the given integrations:

    (i) $\int_{1}^{2}(x+2)^2 dx$ (ii) $\int_{1}^{2}e^{3x}dx$ (iii) $\int_{0}^{2}e^3 dx$ (vi) $\int_{0}^{\pi}\sin 3x\, dx$

R.E.D. Group of Schools

Revision Assignment - 2

Class: 11th

Subject: Physics

Ch. Name: Unit and measurement

Ch. No. 2

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

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

Instruction: Read the following passage and answer the question no.

Case Study- 1

Before learning the dimensional formula, let us recall what is dimension. Dimension in maths is a measure of the length, width, or height extended in a particular direction. By dimension definition, it is a measure of a point or line extended in one direction. Every shape around us has some dimensions. The concept of dimension in maths does not have any specific dimensional formula. Dimension of any physical quantity is the power to which the fundamental units are raised to obtain one unit of that quantity. Let us learn about the dimensional formula with a few examples in the end.

(1) $[ML^{-1}T^{-2}]$ is the dimensional formula of

    (a) force   (b) coefficient of friction

    (c) modulus of elasticity   (d) energy

(2) The dimensional formula of coefficient of viscosity is

    (a) $[MLT^{-1}]$ (b) $[M^{-1}L^2T^{-2}]$ (c) $[ML^{-1}T^{-1}]$ (d) none of these

(3) The dimensions $[MLT^{-2}A^{-2}]$ belong to the

    (a) Magnetic flux   (b) Self inductance

    (c) Magnetic permeability   (d) Electric permittivity

(4) Plane angle and solid angle have

    (a) Unit but no dimensions   (b) Dimensions but no units

    (c) No units and no dimensions   (d) both units and dimensions

(5) Which of the following is a dimensional constant

    (a) Refractive index   (b) viscosity

    (c) force   (d) Work done

Part-2

Subject Specific conceptual definitions & Application based Questions

Q.4. Define the following terms:-

      (i)   One Parsec

      (ii)   One Light year

      (iii)   Derived unit.

      (iv)   Fundamental units

      (v)   Electromagnetic force

      (vi)   Gravitational force

Q.5. Differentiate the following:-

i) Fundamental and derived units

ii) SI unit and MKS units

iii) Dimensional constant and dimensional variables .

iv) Physical quantity and non- physical quantity.

Q.6.   Application based Questions

Q1 (i) .In what way is the knowledge of the dimensions of a physical quantity useful?

(ii) Write limitations of Dimensions analyses?

Q2. (i) How is a dimensional formula different from a differential equation?

(ii) Write dimensions of work, force and pressure?

Q3.(i) Distinguish between the dimensions and unit of a physical quantity.

(ii) Write SI unit of Acceleration, force and energy?

Q4 (i) Derive the formula of centripetal force which depend on mass .velocity and radius of circular path.

(ii) Derive the formula for time period of oscillation of simple pendulum. Depends upon mass of the bob, length of pendulum and acceleration due to gravity.

Q.7.   Assertion and reason

Directions: These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.

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

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

(c) If the Assertion is correct but Reason is incorrect.

(d) If both the Assertion and Reason are incorrect.

Q1.Assertion: Dimensional constants are the quantities whose value are constant.

Reason: Dimensional constants are dimensionless.

Q2.Assertion: When we change the unit of measurement of a quantity, its numerical value changes.

Reason: Smaller the unit of measurement smaller is its numerical value.

Q3.Assertion: In the relation $f = \frac{1}{2l}\sqrt{T}/m$ where symbols have standard meaning, m represent linear mass density.

Reason: The frequency has the dimensions of inverse of time

Q.8.Conceptual and Mental Ability Based Type Questions

1. What is a physical unit?

2. Write the relationship between numerical value of a quantity and the size of the unit.

3. Does the magnitude of a physical quantity change with the change in the system of units.

4. Define light year and express it in meter

5. Define one astronomical unit.

6. By the use of dimensional analysis show that following equation are dimensionally correct

(a) $v^2 - u^2 = 2aS$

(b) work done $= \frac{1}{2}(mv^2) + mgh$

(c) time period $= 2\pi(L/g)^{1/2}$

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

Part-1

(Case Study Question/Activity based Question)

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

Case Study- 1

If an object moving along the straight line covers equal distances in equal intervals of time, it is said to be in uniform motion along a straight line. Distance and displacement are two quantities that seem to mean the same but are different with different meanings and definitions. Distance is the measure of actual path length travelled by object. It is scalar quantity having SI unit of metre while displacement refers to the shortest distance between initial and final position of object. It is vector quantity. The magnitude of the displacement for a course of motion may be zero but the corresponding path length is not zero.

Q.1. Can path length be zero for motion of body from one point to other point?

    (a) Yes   (b) No   (c) Sometimes possible   (D)none of these

Q.2. For rectilinear motion displacement can be

    (a) Positive only   (b) Negative only   (c) Can be zero   (d) All of these

Q.3. equation of motions are applicable to motion with

    (a) uniform acceleration   (b) non uniform acceleration

    (c) constant velocity   (d) none of these

Q.4. The area under velocity time graph gives

    (a) Displacement over given time interval   (b) Acceleration

    (c) Velocity   (d) None of these

Q5. Slope of velocity time graph gives

    (a) Acceleration   (b) Velocity   (c) Distance   (d) Displacement.

Part-2

Subject Specific conceptual definitions & Application based Questions

Q.4. Define the following terms:-

    (i) Distance   (ii) Reference point   (iii) One dimensional motion (iv) point object

Q.5. Differentiate the following:-

    i) distance and displacement

    ii) speed and velocity.

    iii) uniformacceleration and variable acceleration.

    iv) Average velocity and instantaneous velocity

Q.6. Application based Questions

    1. A particle starts from rest with a uniform acceleration. Its displacement x after t seconds is given in meters by the relation $x = 5 + 6t + 7t^2$

    Calculate the magnitude of its (i) initial velocity (ii) velocity at t = 3 s (iii) uniform acceleration and (iv) displacement at t = 5 s.

    2. The mass of a body is 2.5 kg. It is in motion and its velocity v after time t is $v = \dfrac{t^3}{3} + \dfrac{t^2}{3} + 1$

    Calculate the force acting on the body at the time t = 3s.

3. What is the relative velocity of two bodies having equal velocities?

4. A 400m long railway train, is going from New Delhi railway station to Kanpur. Can we consider a railway train as a point object?

Q.7. **Assertion and reason**

(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

Q1.Assertion : The magnitude of the displacement for a course of motion may be zero.

Reason : The path length for the corresponding course of motion is zero.

Q2.Assertion : The speedometer of an automobile measure the average speed of the automobile.

Reason : Average velocity is equal to total displacement per total time taken.

Q3. Assertion : The average speed of an object is greater than or equal to the magnitude of the average velocity over a given time interval.

Reason : The two are equal only if the path length is equal to the magnitude of distance.

Q.8.Conceptual and Mental Ability Based Type Questions

Q1. Poaition of patrical is given by $X=18t +5t^3$.calculate:
   - 1. Instantaneous velocity at t=2sec
   - 2 .Average velocity between 1 second and 3 sec.
   - 3. Instantaneous acceleration at t= 2sec

Q2. A body travels A to B at 40 m/sec and from B to A at 60 m/sec calculate average speed and zverage velocity.

Q3. A body start from rest,what is ratio of distance travelled by body during 4th and 3rd second?

Q4. A ball is thrown upward with a velocity of 200 m/sec.It will reach the ground after how much time.

Q5. A body moves along a curved path of a quarter circle .calculate ratio of distance to displacement.

Q6. The velocity of the bullet becomes one third after it penetrates 4 cm in a wooden block. Assuming that bullet is facing a constant resistance during its motion in the block. The bullet stops completely after travelling at (4 + x) cm inside the block. What is the value of x ?

Q7. For the velocity time graph shown in the figure below, the distance covered by the body in the last two seconds of its motion is what fraction of the total distance travelled by it in all the seven seconds?
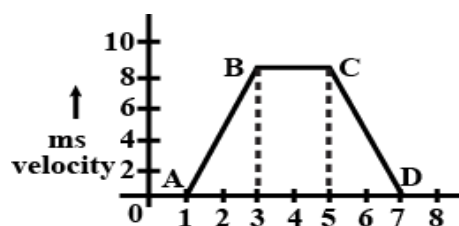
Q8. A ball is thrown vertically upwards with a velocity of $20ms^{-1}$ from the top of a multi storey building. The height of the point where the ball is thrown 25 m from the ground. How long will it be before the ball hits the ground? Take $g=10ms^{-2}$.

Q9. A ball thrown vertically upwards with speed 'u' from the top of a tower reaches the ground in 9 s. Another ball is thrown vertically downwards from the same position with speed 'u', takes 4 s to reach the ground. Calculate the value of 'u' . (Take $g=10ms^{-2}$)

R.E.D. Group of Schools
Revision Assignment - 4

Class: 11th

Subject: Physics

Ch. Name: Motion in Plane

Ch. No.: 4

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

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

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

Case Study- 1

Projectile motion is a form of motion in which an object or particle is thrown with some initial velocity near the earth's surface and it moves along a curved path under the action of gravity alone. The path followed by a projectile is called its trajectory, which is shown below. When a projectile is projected obliquely, then its trajectory is as shown in the figure below.

Here velocity u is resolved into two components, we get (a) u cosθ along OX and (b) u sinθ along OY .
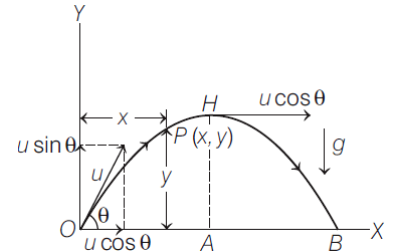
(i) The example of such type of motion is
   (a) motion of car on a banked road   (b) motion of boat in sea
   (c) a javelin thrown by an athlete   (d) motion of ball thrown vertically upward

(ii) The acceleration of the object in horizontal direction is
   (a) constant   (b) decreasing   (c) increasing   (d) zero

(iii) The vertical component of velocity at point H is
   (a) maximum   (b) zero
   (c) double to that at O   (d) equal to horizontal component

(iv) A cricket ball is thrown at a speed of 28 m/s in a direction 30° with the horizontal. The time taken by the ball to return to the same level will be
   (a) 2.0 s   (b) 3.0 s   (c) 4.0 s   (d) 2.9 s

(v) In above case, the distance from the thrower to the point where the ball returns to the same level will be
   (a) 39 m   (b) 69 m   (c) 68 m   (d) 72m

Part-2
Subject Specific conceptual definitions & Application based Questions

Q.4. Define the following terms:-
   i) Projectile motion   ii) Uniform circular motion
   iii) Angular displacement   (iv) Frequency

Q.5.   Differentiate the following:-
   i) Linear velocity and angular velocity.   ii) Scalar product and vector product.
   iii) Linear acceleration and angular acceleration. iv) Position vector and displacement vector.

Q.6.   Application based question:-

Q1   A particle is moving in x−y plane on a straight line its x and y coordinates are given as x = (2t^2+4) m and Y = (23x +8) m and t is in second. The acceleration of the particle will be ?

Q2   Under what conditions will the vectors A= $3\hat{i}-5\hat{j}+5\hat{k}$ and $5\hat{i}-\hat{j}+b\hat{k}$ be perpendicular to each other? Find the value of |b|?

Q3   Find out the magnitude of resultant of two displacement vectors, each having a y-component of 10 km, are added together to form a resultant that forms an angle of 60o from the +x-axis. (sin 60o= 0.87, cos 60o = 0.5)

Q4   A point size body is moving along a circle at an angular velocity of 2.8 rads−1. If the centripetal acceleration of the body is 7 ms−2, then its speed is:

Q 5   If $\vec{A}=\hat{i}+2\hat{j}+k$, $\vec{B}=2\hat{i}+3\hat{k}$ and $\vec{C}=-2\hat{i}+4\hat{k}$ **then find magnitude of vector** $\vec{A}+\vec{B}-\vec{C}$.

Q. 6. If a unit vector is represented by $0.5\hat{i}+0.8\hat{j}+c\hat{k}$ then find value of c.

Q.7.   Assertion and reason questions:

(i)   Assertion (A): In the motion of projectile the horizontal component of velocity remains constant
   Reason (R) : The force on the projectile is the gravitational force which acts only in the vertically downward 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

(ii) Assertion - In the motion of projectile the horizontal component of velocity remains constant

Reason-The force on the projectile is gravitational force which acts only in vertically downward 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

(iii) Assertion - If net force on a rigid body is zero, it is either at rest or moving with a constant linear velocity. Nothing else can happen.

Reason - Constant velocity means linear acceleration is zero.

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

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

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

(d) If both assertion and reason are false

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

1. A cricketer can throw a ball to a maximum horizontal distance of 100m how much high above the ground can the cricketer throw the same ball?

2. The position of a particle is given by

$$(3t\hat{i} - 2t^2 \hat{j} + 4\hat{k})$$

Where t is in seconds and the coefficients have the proper units for r to be in metres.

a) Find the v and a of the particle.

3. At what point of projectile motion

a) Potential energy is the maximum?

b) Kinetic energy is the minimum?

4. A cyclist starts from the centre O of a circular park of radius 1km1, reaches the edge P of the park, then cycles along the circumference, and returns to the centre along QO as shown in Fig. 4.21. If the round trip takes 10min, what is the

a) Net displacement?

b) Average velocity?

c) Average speed of the cyclist?
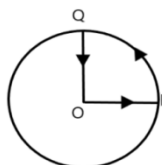
5. Rain is falling vertically with a speed of 30m/sA woman rides a bicycle with a speed of 10m/sin the north to south direction. What is the direction in which she should hold her umbrella?
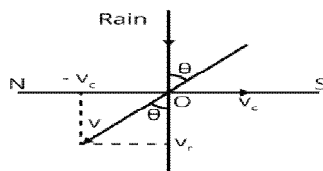
7. A bullet fired at an angle of 30° with the horizontal hits the ground 3.0 km away. By adjusting its angle of projection, can one hope to hit a target 5.0 km away? Assume the muzzle speed to be fixed, and neglect air resistance.

8. The ceiling of a long hall is 25 m high. What is the maximum horizontal distance that a ball thrown with a speed of 40 m/s can go without hitting the ceiling of the hall?

9. A person observes a birds on a tree 39.6 m high and at a distance of 35.2 m. With what velocity the person should throw an arrow at an angle of 45° so that it may hit the bird?

(Section-B)
Lab Manual work.

Experiment-1 https://youtu.be/R0vxwQ9YpQc

Experiment-2 https://youtu.be/_NbQV9OEsoQ

Experiment-1 To find diameter of calorimeter using vernier calliper.

Experiment-2 To find thickness of wire using screw gauge.

1. **Syllabus Covered up to MAY END**

   o Chapter No.-1   Chapter Name - Some basic concepts of chemistry

   o Chapter No.- 2   Chapter Name- Structure of Atom

   o Chapter No.- 3   Chapter Name- Classification of Elements and periodicity in properties

2. **List of all new concepts taught up to MAY END**

   o Mole concept

   o Concentration Terms

   o Stoichiometry and limiting reagent

   o Bohr's Model of atom

   o Hydrogen Spectrum

   o Quantum numbers

   o Electronic configurations

   o Mendeleev's Periodic table

   o Modern periodic table

3. **Formative Assessment based Homework:**

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

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

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

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

4. **Summative Assessment based Homework:**

   o **Section-E-**One assignment for each chapter from the syllabus covered before holidays

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

   o NCERT Text Book, Pradeep book

   o Notebook

   o A_4Sheets, Internet

   o Resources as per activity

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

Sr. No.	Topic	Roll No.
1	Shape of s- orbitals	1 to 10
2	Shape of p-orbitals	11 to 20
3	Electronic configuration of elements with atomic no.	21 to 30
4	Shape of d-orbitals	31 to last roll no.

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

   Topic 1:   **Shape of s- orbitals**

   Materials Required: A4 sheets, folder, NCERT book, notes and help book

   Steps to prepare: Understand the concept and explain it on A4 sheets.

   Topic 2:   **Shape of p- orbitals**

   Materials Required: A4 sheets, folder, NCERT book, notes and help book

   Steps to prepare: Understand the concept and explain it on A4 sheets.

   Topic 3:   **Electronic configuration of elements with atomic no. 21 to 30**

   Materials Required: A4 sheets, folder, NCERT book, notes and help book

   Steps to prepare: Understand the concept and explain it on A4 sheets.

Topic 4:   **Shape of d- orbitals**

            Materials Required: A4 sheets, folder, NCERT book, notes and help book

            Steps to prepare: Understand the concept and explain it on A4 sheets.

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

- Draw well labelled diagrams of the following:
  - ➢ Spectral series of hydrogen atom
  - ➢ Rutherford alpha scattering model
  - ➢ Shapes of orbitals

o **Section-C-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 where as 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.

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

- **Learning Homework:** Learn chapter 1, 2 and 3 along with NCERT questions.
- **Pre-Reading Homework:** Read Page no. 85 to 95 of NCERT BOOK.

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

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

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

Case Study- 1

$6.02214179 \times 10^{23}$, a fundamental constant named Avogadro's number (NA) or the Avogadro constant in honor of Italian scientist Amedeo Avogadro. This constant is properly reported with an explicit unit of "per mole," a conveniently rounded version being 6.022×10^{23}/mol. Consistent with its definition as an amount unit, 1 mole of any element contains the same number of atoms as 1 mole of any other element. The masses of 1 mole of different elements, however, are different, since the masses of the individual atoms are drastically different. The molar mass of an element (or compound) is the mass in grams of 1 mole of that substance, a property expressed in units of grams per mole (g/mol).

Q.1. The mass of oxygen gas which occupies 5.6 liters at STP could be
(a) gram atomic mass of oxygen
(b) one fourth of the gram atomic mass of oxygen
(c) double the gram atomic mass of oxygen
(d) half of the gram atomic mass of oxygen

Q.2. What is the mass of one molecule of yellow phosphorus? (Atomic mass of phosphorus = 30)
(a) 1.993×10^{-22} mg
(b) 1.993×10^{-19} mg
(c) 4.983×10^{-20} mg
(d) 4.983×10^{-23} mg

Q.3. Which of the following contains same number of carbon atoms as are in 6.0 g of carbon (C–12)?
(a) 6.0 g Ethane
(b) 8.0 g Methane
(c) 21.0 g Propane
(d) 28.0 g CO

Q.4. Any charged particle is called:
(a) Atom
(b) Molecule
(c) Ion
(d) Mixture

Q.5. Which has maximum number of atoms?
(a) 24 g of C (12)
(b) 56 g of Fe (56)
(c) 27 g of Al (27)
(d) 108 g of Ag (108)

Part-2
Subject Specific conceptual definitions & Application based Questions

Q.6. Define the following terms: -
i) Mole
ii) Avogadro's no
iii) gram atomic mass
iv) Mole fraction
v) limiting reagent
vi) strength
vii) Normality
viii) Molarity
ix) Empirical formula
x) Normality

Q.7. Differentiate the following: -
i) Compound and mixture
ii) law of definite proportion and law of multiple proportion
iii) Empirical Formula and Molecular Formula
iv) Molarity and Molality
v) equivalent weight and gram equivalent weight

Q.8. Application based question: -
1. In three moles of ethane (C_2H_6), calculate the following:
(i) Number of moles of carbon atoms.
(ii) Number of moles of hydrogen atoms.
(iii) Number of molecules of ethane.

2. Calcium carbonate reacts with aqueous HCl to give $CaCl_2$ and CO_2 according to the reaction, $CaCO_3(s) + 2HCl(aq) \rightarrow CaCl_2(aq) + CO_2(g) + H_2O(l)$
   What mass of $CaCO_3$ is required to react completely with 25 mL of 0.75 M HCl?

3. Calculate the mass percent of calcium, phosphorus and oxygen in calcium phosphate $Ca_3(PO_4)_2$.

4. If 4 g of NaOH dissolves in 36 g of H_2O, calculate the mole fraction of each component in the solution. Also, determine the molarity of solution.
   (specific gravity of solution is 1g mL^{-1}).

5. Define the law of multiple proportions. Explain it with two examples. How does this law point to the existence of atoms?

Q.9. Assertion and reason questions:

i) **Assertion:** The empirical mass of ethane is half of its molecular mass.
   Reason: The empirical mass of ethane is half of its molecular mass.
   (a) Both Assertion and reason are true and reason is correct explanation of assertion
   (b) Both Assertion and reason are true but reason is not a correct explanation of assertion.
   (c) If assertion is true but reason is false.
   (d) If both assertion and reason are false

ii) **Assertion:** One atomic mass unit is defined as one twelfth of the mass of one carbon-12 atom.
   Reason: Carbon-12 isotope is the most abundant isotope of carbon and has been chosen as standard.
   (a) Both Assertion and reason are true and reason is correct explanation of assertion
   (b) Both Assertion and reason are true but reason is not a correct explanation of assertion.
   (c) If assertion is true but reason is false.
   (d) If both assertion and reason are false

iii) **Assertion:** Significant figures for 0.200 is 3 whereas for 200 it is 1.
   Reason: Zero at the end or right of a number are significant provided they are not on the right side of the decimal point.
   (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

iv) **Assertion:** Combustion of 16 g of methane gives 18 g of water.
   Reason: In the combustion of methane, water is one of the products.
   (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

v) **Assertion:** Equal moles of different substances contain same number of constituent particles.
   Reason: Equal weights of different substances contain the same number of constituent particles.
   (a) Both Assertion and reason are true and reason is correct explanation of assertion
   (b) Both Assertion and reason are true but reason is not a correct explanation of assertion.
   (c) If assertion is true but reason is false.
   (d) If both assertion and reason are false

Q.10. Conceptual and Mental Ability Based Type Questions)
Answer the following questions in one word or a sentence.

1. The empirical formula and molecular mass of a compound are CH_2O and 180 g respectively. What will be the molecular formula of the compound?
2. What will be the molarity of a solution, which contains 5.85 g of NaCl(s) per 500 mL?
3. What is the mass percent of carbon in carbon dioxide?
4. One mole of oxygen gas at STP is equal to ___.
5. What will be the mass of one atom of C-12 in grams?
6. What is the symbol for SI unit of mole? How is the mole defined?

For recapitulation & solving the assignment the students should refer to their NCERT textbook of Science

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

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

Case Study- 1

Electron moves around the nucleus in circular orbitals in fixed energy paths. As far as electron moves in these orbits neither energy is absorbed nor liberated. But when electron move from lower energy level to higher energy level energy is absorbed while when it comes back from higher energy level to lower energy level energy is liberated in the form of photon & a spectral line is formed. Corresponding to different possible transitions different lines are formed which form the particular series viz. Lyman, balmer, paschen, bracket, pfund, Humphery etc. Suppose e– in hydrogen atom is present in 10th excited state, then answer the following questions based on paragraph:

(i) If electron present in 10th excited state liberate one visible quanta then next quanta liberated will correspond to following transition –

(A) $10 \rightarrow 2$ (B) $11 \rightarrow 2$ (C) $11 \rightarrow 1$ (D) $2 \rightarrow 1$

(ii) Total number of spectral lines which can be obtained during the transition to ground level-

(A) 45   (B) 55   (C) 66   (D) 36

(iii) Minimum value of wavelength that can be obtained during the transition – (Where R is Rydberg constant.)

(A) 121/120R   (B) 11/10R   (C) 100/99R   (D) 10/9R

(iv) The wave-numbers decrease from

(A) Lyman to Pfund series   (B) pfund to Lyman series

(C) Balmer series to Brackett series   (D) none of above

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

Q. 1   Define the following terms: -

i) Electron   ii) Electromagnetic waves   iii) wavelength   iv) Amplitude

v) frequency   vi) quantum no.   vii) Black body   viii) Isotopes

ix) Isobars   x) photoelectric effect   xi) Radiation

Q. 2   Differentiate the following: -

i) Orbit and orbitals   ii) Electromagnetic wave and Matter wave   iii) Particle and wave

Q. 3   Application based question:

i)   We don't see a car moving as a wave on the road. Why?

ii)   Why is the energy of 1s electron lower than 2s electron?

iii)   What are quantum no? Explain them with examples.

iv)   What are degenerate orbitals? Name some of them.

v)   Out of electron and proton which will have higher velocity to produce matter waves of same wavelength? Explain

Q. 4   Assertion and reason questions:

i)   Assertion: All isotopes of a given element show the same type of chemical behaviour.

Reason: The chemical properties of an atom are controlled by the number of electrons in the atom.

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

ii) **Assertion:** The position of an electron can be determined exactly with the help of an electron microscope.

Reason: The product of uncertainty in the measurement of its momentum and the uncertainty. In the measurement of the position cannot be less than a finite limit.

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

iii) **Assertion:** The radius of the first orbit of hydrogen atom is 0.529Å.

Reason: Radius of each circular orbit (rn) – 0.529Å (n2/Z), where n = 1, 2, 3 and Z = atomic number.

(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.

iv) **Assertion:** It is impossible to determine the exact position and exact momentum of an electron simultaneously.

Reason: The path of an electron in an atom is clearly defined.

(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.

v) **Assertion:** Black body is an ideal body that emits and absorbs radiations of all frequencies.

Reason: The frequency of radiation emitted by a body goes from a lower frequency to higher frequency with an increase in temperature.

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

Q. 5 **Conceptual and Mental Ability Based Type Questions)**

Answer the following questions in one word or a sentence.

1. How many spherical nodes are present in 3p orbital?
2. Explain Hund's rule of maximum multiplicity.
3. In which region does the spectral lines of hydrogen atom lies?
4. Write the difference between ground state and excited state.
5. What is value of Planck's constant in SI unit?

Section-B
(Lab Manual work)

Links from You Tube:
https://youtu.be/sAhzUUcEKME
https://youtu.be/6L2fe6_vooY
https://youtu.be/orDN6nj3Fls

Experiment-1
Experiment-2
Experiment-3

(Do this work in Practical file)

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

R.E.D. Group of Schools

Summer Holidays Homework
Session: 2023-24

Subject: Mathematics   **Class –11th**   **Text Book: NCERT Text Book**

1. **Syllabus Covered upto MAY END**

   o Chapter No.- 1………… Chapter Name:- Sets

   o Chapter No.- 2………… Chapter Name:- Relations and Functions

   o Chapter No.- 3………… Chapter Name:- Trigonometric Functions

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

   o Concepts of a Sets

   o Types of Sets, Operations on Sets

   o Practical applications of Set Operations

   o Cartesian product of Set, Types of Relations, Function as a special kind of realtion

   o Domain and Range of Function

   o Measure of an angle

   o Signs of trigonometric Functions, Trigonometric functions of allied angles

   o Graph of a trigonometric Functions

   o Transformation of a product into sum or difference

3. **Formative Assessment based Homework:**

   o **Section-A-**Creative Project/ Model

   o **Section-B-** Problem solving activities.

   o **Section-C-** Mental Maths problems.

   o **Section-D-** Lab practicals

   o **Section-A-Creative Project/ Models**

Topic	Roll .No
1. **Set , Types and Operations**	**1 to 8**
2. **A Relation and a Function**	**9 to 16**
3. **Distinguish a Relation and a Function**	**17 to 24**
4. **Formulas of trigonometric Functions**	**25 to 32**
5. **Graphs of sin x, cos x and tan x**	**33 to 40**

   Make a project files according to the given topics

o **Section-B- Problem solving activity.**

   Solve the following real life based problems.

o **Problem solving activity.**

   A class teacher Mamta Sharma of class XI write three sets A, B and C are such that

   A = {1, 3, 5,7, 9}, B = {2, 4, 6, 8} and C = {2, 3, 5, 7, 11}.

Answer the following questions which are based on above sets.

(i) Find A ∩ B.

   (a) {3, 5, 7}   (b) φ   (c) {1, 5, 7}   (d) {2, 5, 7}

(ii) Find A ∩ C

   (a) {3, 5, 7}   (b) φ   (c) {1, 5, 7}   (d) {3, 4, 7}

(iii) Which of the following is correct for two sets A and B to be disjoint?

   (a) A ∩ B = φ   (b) A ∩ B ≠ φ   (c) A∪B = φ   (d) A∪B ≠ φ

(iv) Which of the following is correct for two sets A and C to be intersecting?

   (a) A ∩ C = φ   (b) A ∩ C ≠ φ   (c) A∪C = φ   (d) A∪C ≠ φ

(v) Write the n[P (B)].

   (a) 8   (b) 4   (c) 16   (d) 12

- **Section-C- Activities related to Mental Maths.**

  - **Mental Maths problems:**

Q1. Look at this series: 2, 1, (1/2), (1/4), ... What number should come next?

Q2. Look at this series: 22, 21, 23, 22, 24, 23, ... What number should come next?

Q3. Complete the series 1,6,13,22,33,..

Q4. Complete the Series 34,45,56,67……….

Q5. If the sum of n terms of an A.P. is $(pn + qn^2)$, where p and q are constants, find the common difference.

Q6. If E is the universal set and $A = B \cup C$, then the set $E - \left(E - \left(E - \left(E - \left(E - A \right) \right) \right) \right)$ is same as the set

Q7. Which one of the following is not a prime number?

   (a) 31   (b) 61   (c) 71   (d) 91

Q8. What least number must be added to 1056, so that the sum is completely divisible by 23 ?

   (a) 2   (b) 3   (c) 18   (d) 21

Q9. The sum of first five prime numbers is:

   (a) 11   (b) 18   (c) 26   (d) 28

Q10. The smallest 3 digit prime number is:

   (a) 101   (b) 103   (c) 109   (d) 113

➢ **Section-D-Lab Practicals .**

  ❖ Make the following lab activities in lab manual.

1. Set Operations Using Venn Diagrams

2. Distinguish a Relation and a Function

3. Graphs of sin x, Sin 2x, Sin x and sin x/2

➢ **Section-E- Revision assignments (Chapter wise assignments).**

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

Part-1

Multiple choice Questions (only one option is correct)

1. Which of the following is a Set?

    (a) The collection of all even integers.

    (b) The collection of most dangerous animals of the world.

    (c) The collection of rich persons in India.

    (d) The collection of best teachers of Mathematics in India

2. Which of the following sets is a set-builder form of {14, 21, 28, 35, 42……. 98):

    (a) $\{x:\ x$ is a multiple of 7, $7 <x < 90\}$ (b) $\{x:\ x$ is a multiple of 7$\}$

    (c) $\{x:\ x$ is a multiple of 7, $7 <x < 98)$ (d) $\{x:\ x$ is a multiple of 7, $7 <x < 100\}$

3. Which of the following sets is a roster form of $\{x:\ x$ is a positive integer and $x^2 < 40)$

    (a) {0, 1, 2, 3, 4, 5, 6}   (b) {1, 2, 3, 4, 5}

    (c) {1, 2, 3, 4, 5, 6, 7}   (d) {1, 2, 3, 4, 5, 6}

4. Which of the following sets is subset of $A = \{\phi, \{\phi\}, 1, 2, \{3, \phi\}, 5\}$:

     (a){1, 3}   (b){2, 3}   (c) {3, ϕ }   (d){{3, ϕ }}

5. If $A = \{(a,\ b),\ c\}$ then power set P(A) is:

    (a) $\{\{a\},\ \{b\},\ \{c\}\}$

    (b)$\{\{a,\ b\},\ \{b,\ c\},\ \{c,\ a\},\ \{a\},\ \{b\},\ \{c\}\}$

    (c) $\{\phi,\ \{a\},\ \{b\},\ \{c\},\ \{a,\ b\},\ \{b,\ c\},\ \{c,\ a\},\ \{(a,\ b),\ c\}\}$

    (d)$\{\phi,\ \{(a,\ b)\},\ \{c\},\ \{(a,\ b),\ c\}\}$

Part – II

(Integer Type Questions)

6. If A = {1, 2, 3, 4, 5}. Then what is the cardinal number of Set A.

7. If A = {a, b, c}. Then write the number of subsets of A.

8. If A = {1, 2, 3, 4}. Then how many elements are there in the P (A).

9. "Collection of good Hockey players of India". Is it a set or not?

Answer the following questions by applying acquired knowledge, facts, techniques and rules

10. Write down all the subsets of the following set:(i) {9}(ii) {1, 2, 3}.

11. Let U = {1, 2, 3, 4, 5, 6, 7, 8, 9}; A = {1, 2, 3, 4}, B = {2, 4, 6, 8} and C = {3, 4, 5, 6}.

    Find: (i) A' (ii) $(A \cup B)'$

12. Let U be the set of all triangle in a plane. If A is the set of all triangles with at least one angle different from 60^0, then find A'?

Part – IV

(Reason and Numerical Based Questions)

13. Are the following pair of sets equal? Give reasons.

    A = {2, 3), B = (x:x is solution of $x^2 + 5x + 6 = 0$)

14. If U={1,2,3,4,5,6,7,8,9), A=(2,4,6,8} and B ={2,3,5,7).Verify that

    (i) $(A \cup B)' = A' \cap B'$ (ii) $(A \cap B)' = A' \cup B'$

Part – V

(Case Study Based Questions)

15. The school organised a farewell party of 100 students and school management decided three types of drinks distributes in party are Milk (M), Coffee(C) and Tea (T). He reported the following 10 students had all the three drinks M, C, T, 20 had M and C, 30 had C and T; 25 had M and T; 12 had M only; 5 had C only; 8 had T only.

(i) The number of students who did not take any drinks is

     (a) 20   (b) 30   (c) 10   (d) 25

   (ii)   The number of students who prefer Milk is

     (a) 47   (b) 45   (c) 53   (d) 50

   (iii)   The number of students who prefer Coffee is

     (a) 47   (b) 53   (c) 45   (d) 50

   (iv)   The number of students who prefer Tea is

     (a) 51   (b) 53   (c) 50   (d) 47

Part – VI

(Analysis Based Question)

Answer the following question by organizing and integrating the information.

16. A survey shows that 63% of Indians likes cheese whereas 76% likes apples. If x% of Indians like both cheese and apples and each Indian like at least one of these, find the value of x.

Learning Homework: Learn all definitions & formulas from Page No. 1 to 29 of NCERT Book.

Pre-Reading Homework: Read Page no. 1 to 29 of NCERT Book and understand their meaning

Part-1

Multiple choice Questions (only one option is correct)

1. If $3x + 8 > 2$, x is an integer, then solution set is

   (a) $\{x : x > -2, x \text{ is an int eger}\}$ (b) $(-2, \infty)$

   (c) {-2, -1, 0, 1, 2,……….}   (d) Z, the set of integer

2. If A = {1, 2, 4}, B = {2, 4, 5}, C = {2, 5}, then $(A - B) \times (B - C)$ is

   (a) {(1, 2), (1, 5), (2, 5)}   (b) {(1, 4)}

   (c) (1, 4)   (d) none of these

3. If R is a relation on the set A = {1, 2, 3, 4, 5, 6, 7, 8, 9} given by x R $y \iff y = 3x$, then R=

   (a) {(3, 1), (6, 2), (8, 2), (9, 3)}   (b) {(3, 1), (6, 2), (9, 3)}

   (c) {(3, 1), (2, 6), (3, 9)}   (d) none of these

4. Let A = {1, 2, 3}, B = {1, 3, 5}. If relation R from A to B is given by R = {(1, 3), (2, 5), (3, 3)}. Then R^{-1}

   is

   (a){(3, 3), (3, 1), (5, 2)}   (b) {(1, 3),(2, 5), (3, 3)}

   (c){(1, 3), (5, 2)}   (d) none of these

5. If A = {1, 2, 3}, B = {1, 4, 6, 9} and R is a relation from A to B defined by x is greater than y. The range

   of R is

   (a) {1, 4, 6, 9}   (b) {4, 6, 9}   (c) {1}   (d) none of these

Part – II

(Integer Type Questions)

6. How many elements lie in the empty relation?

7. If n(A)=3 and n(B)=2 then find the total number of relations between set A and set B.

8. If $\left(\dfrac{x}{3} + 1, y - \dfrac{2}{3}\right) = \left(\dfrac{5}{3}, \dfrac{1}{3}\right)$, find the values of x and y.

9. If A = {1, 2, 3}, B = {4, 5}. Show that $A \times B \neq B \times A$.

Part – III

(Application Based Questions)

Answer the following questions by applying acquired knowledge, facts, techniques and rules

10. The cartesian product A × A has 9 elements among which some elements are found (-1, 0) and (0, 1).

    Find the set A and remaining elements of A × A.

11. Let A = {x, y, z} and B = {1, 2}. Find the number of relations from A into B.

12. Find the domain for which the function $f(x) = 2x^2 - 1 \text{ and } g(x) = 1 - 3x$ are equal.

Part – IV

(Reason and Numerical Based Questions)

13. If R is the relation "is greater than" from A=(1,2,3,4,6) and B= (1,3,4), write R as a set of ordered pairs.
    Also find inverse of R

14. Find the domain of the function $f(x) = \sqrt{9 - x^2}$

Part – V

(Case Study Based Questions)

15. Gauri Shankar and Ravi are the students of class XI of RED School. Their mathematics teacher told them to collect the name of 5 students of class 9 and 4 students of class 8 for a project. They collected the names and write them in the form of sets as following:

A = {Hari, Shyam, Madhuri, Ritika, Reena}

B = {Abhipsa, Satabrata, Sai, Parteek}

Since discussion of relation and function was going on in their classes, they decided to explore these sets for various type of relation and functions.

Using the information answer the following

(i) How many elements exist in set A and set B

   (a) 5, 4   (b) 4, 5   (c) 5, 6   (d) 4, 6

(ii) How many elements lie in n(A × B)

   (a) 25   (b) 16   (c) 20   (d) 15

(iii) How many relation exist from set A to set B

   (a) 20   (b) 2^{20} (c) 5^4 (d) 4^5

(iv) How many function exist from set A to set B

   (a) 1024   (b) 625   (c) 2^{20} (d) 20^2

Part – VI

(Analysis Based Question)

Answer the following question by organizing and integrating the information.

16. Let A = {1, 2, 3, 4}, B = {1, 5, 9, 11, 15, 16} and f = {(1, 5), (2, 9), (3, 1), (4, 5), (2, 11)}. Are the following true ?

   (i) f is relation from A to B   (ii) f is a function from A to B.

Learning Homework: Learn all definitions & formulas from Page No. 30 to 48 of NCERT Book.

Pre-Reading Homework: Read Page no.30. to 48 of NCERT Book and understand their meaning

R.E.D. Group of Schools

Revision Assignment -3

Class: 11th

Ch. No.: Trigonometric Functions

Subject: Maths

Ch. Name: 3

Part-1

Multiple choice Questions (only one option is correct)

1. In a triangle ABC, the sides are 6 cm, 10 cm and 14 cm the obtuse angle of triangle will be:

   (a) 120^0 (b) 110^0 (c) 130^0 (d) 150^0

2. Two sides of a triangle are $\sqrt{3}-1 \; and \; \sqrt{3}+1$ units and their included angle is 60^0 then third side will be :

   (a) 7   (b) 6   (c) $\sqrt{6}$ (d) 8

3. In a triangle ABC, $\angle B = 30^0, \angle C = 60^0, a = 6\,cm$ then length of side 'b' will be :

   (a) 8   (b) 5   (c) 4   (d) 3

4. Solution of equation $\cos\theta = \cos\alpha$ is

   (a) $\theta = n\pi \pm \alpha$ (b) $\theta = n\pi + \alpha$ (c) $\theta = 2n\pi \pm \alpha$ (d) none of these

5. Solution of $\sin\theta = \sin\alpha$

   (a) $\theta = n\pi + \alpha$ (b) $\theta = 2n\pi \pm \alpha$ (c) $\theta = n\pi \pm \alpha$ (d) $\theta = n\pi + (-1)^n \alpha$

Part – II

(Integer Type Questions)

6. What is the maximum and minimum value of sin *x*.

7. Find the value of cos(–1710).

8. Which trigonometric function are positive in the third quadrant.

9. Write the formula for tan(A+B).

Part – III

(Application Based Questions)

Answer the following questions by applying acquired knowledge, facts, techniques and rules

10. Prove that $\tan^2\theta - \sin^2\theta = \tan^2\theta \sin^2\theta$.

11. Prove that $\sec^4\theta - \sec^2\theta = \tan^4\theta + \tan^2\theta$

12. If $\cot x = \dfrac{-5}{12}, x$ lies in second quadrant, find the values of other five trigonometric function.

13. Prove that : $\sin^2 6x - \sin^2 4x = \sin 2x \sin 10x$.

14. Prove that : $\dfrac{\sin x - \sin y}{\cos x + \cos y} = \tan \dfrac{x - y}{2}$.

Part – V

(Case Study Based Questions)

15. If $\sin A = \dfrac{3}{5}$ and $\cos B = \dfrac{-5}{13}$; $0 < A < \dfrac{\pi}{2}$ and $\pi < B < \dfrac{3\pi}{2}$.

    (i) Find the value of $\cos A + \sin B$

    (a) $-\dfrac{16}{65}$ (b) $-\dfrac{8}{65}$ (c) $\dfrac{8}{65}$ (d) $\dfrac{12}{65}$

    (ii) Find the value of $\sin(A+B)$

    (a) $-\dfrac{16}{65}$ (b) $\dfrac{-63}{65}$ (c) $\dfrac{-65}{33}$ (d) $\dfrac{33}{65}$

    (iii) Find the value of $\cos(A+B)$

    (a) $\dfrac{12}{65}$ (b) $\dfrac{-12}{65}$ (c) $\dfrac{-16}{65}$ (d) $\dfrac{16}{65}$

    (iv) Find the value of $\sin 2A$

    (i) $\dfrac{14}{25}$ (ii) $\dfrac{24}{25}$ (iii) $\dfrac{-14}{25}$ (iv) $\dfrac{-24}{25}$

Part – VI

(Analysis Based Question)

Answer the following question by organizing and integrating the information.

16. Prove that : $\sin(n+1)x \sin(n+2)x + \cos(n+1)x \cos(n+2)x = \cos x$.

    Learning Homework: Learn all definitions & formulas from Page No. 49 to 85 of NCERT Book.

    Pre-Reading Homework: Read Page no. 49 to 85 of NCERT Book and understand their meaning

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

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

"Learning is the only thing the mind never exhausts, never fears and never regrets"

The long awaited Summer Vacation is here. It allows you to rejuvenate and catch up on hobbies and other interests that are best pursued with time. However, it is important to strike balance between leisure and learning. To enhance your learning, we have planned Home Assignment, to keep your skill sharp and concepts clear. It will help you develop vital skills such as independent research.

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

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

Syllabus Covered:

Chapter – 1: Changing Trends and career in Physical Education
Chapter – 2: Olympism
Chapter – 3: Yoga
Chapter – 4: Physical education and sports for (CWSN) Divyang

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

Tools Required

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

Home Work Assessment by Parents

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

Date of Submission: 03-07-2023

Checkpoints for the Assessment of Home Work:

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

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

Class: XI   **Subject: Phy. Edu.**
Ch. Name: Changing trend and career in Physical Education   **Ch. No.: 1**

General Instruction:

1. **All questions are compulsory.**
2. **The assignment consists of 14 questions and all are compulsory.**
3. **Question 1-8 carry 1 mark each and are Multiple Choice Questions.**
4. **Questions 9 carry 2 marks each and shall not exceed 40-60 words.**
5. **Questions 10-11 carry 3 marks each and shall not exceed 80 -100 words.**
6. **Questions 12 carry 4 marks each and shall not exceed 100-150 words.**
7. **Questions 13 - 14 carry 5 marks each and shall not exceed 150-200 words.**
8. **Summer Holiday work should be written in a fair Note book.**

Section – A

1. What is the Aim Of Physical Education?
    (a) To make a Cricketer   (b) Development of Mind
    (c) To Wholesome development of an individual   (d) Development of Body

2. Khelo-India is a _____ programme
    (a) State level   (b) National level   (c) District level   (d) Zonal level

3. Which one of these is not a career option in physical education?
    (a) Dancer   (b) Professional sports person
    (c) Umpiring   (d) Sports medicine

4. Who Launched the Fit India Programme.
    (a) Governor of India   (b) Prime minister of India
    (c) President of India   (d) Sports minister of India

5. Which one of the following in not the objective of physical education?
    (a) Mental Development   (b) Physical Development
    (c) Healthy Development   (d) Emotional Development

6. How much money did government of India approved for the session 2017-2018 to 2019-2020?
    (a) 1756 Core   (b) 5478 Core   (c) 7898 Core   (d) 6578 Core

7. Who said that "The World is the greatest gymnasium where we come to make ourselves strong?"
    (a) Aristotle   (b) Plato   (c) Swami Vivekananda   (d) All of the above

8. When was the Fit India Movement Launched?
    (a) 29 Aug. 2012   (b) 29 Aug. 2012   (c) 29 Aug. 2012   (d) 29 Aug 2019

9. Which of the following tournament played on Clay court?
    (a) Australian Open   (b) Us Open   (c) French Open   (d) The Wimbledon

Section – B

10. What do you mean by Physical Education and what is the aim of Physical education?

Section – C

11. Give the list of career option in physical education.
12. Explain any three teaching career in Physical education.

Section – D

13 Explain about Tara Chand and All India council of Sports committees in brief.

Section – E

14. Explain the Objective of Physical Education in brief.
15. What is Fit India program me? Explain the Objective of Khelo-India program me.

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

Class: XI   **Subject: Phy. Edu.**
Ch. Name: Olympism   **Ch. No.: 2**

General Instruction:
1. **All questions are compulsory.**
2. **The assignment consists of 14 questions and all are compulsory.**
3. **Question 1-8 carry 1 mark each and are Multiple Choice Questions.**
4. **Questions 9 carry 2 marks each and shall not exceed 40-60 words.**
5. **Questions 10-11 carry 3 marks each and shall not exceed 80 -100 words.**
6. **Questions 12 carry 4 marks each and shall not exceed 100-150 words.**
7. **Questions 13 - 14 carry 5 marks each and shall not exceed 150-200 words.**
8. **Summer Holiday work should be written in a fair Note book.**

Section – A

1. Who is the Father of Modern Olympic?
   (a) Pierre-de-coubertin   (b) Plato   (c) Aristotle   (d) None of these
2. The Ancient Olympic Games started in which year
   (a) 396 BC   (b) 776 BC   (c) 1894   (d) 1896
3. How many rings are there in the Olympic symbol?
   (a) 4   (b) 5   (c) 6   (d) 7
4. What is the meaning of Fortius?
   (a) Faster   (b) Higher   (c) Stronger   (d) Unite
5. When was the Fit India Movement Launched?
   (a) 29 Aug. 2012   (b) 29 Aug. 2012   (c) 29 Aug. 2012   (d) 29 Aug 2019
6. Which of the following tournament played on Clay court?
   (a) Australian Open   (b) Us Open   (c) French Open   (d) The Wimbledon
7. Who Launched the Fit India Programme.
   (a) Governor of India   (b) Prime minister of India
   (c) President of India   (d) Sports minister of India
8. Which one of the following in not the objective of physical education?
   (a) Mental Development   (b) Physical Development
   (c) Healthy Development   (d) Emotional Development

Section – B

9. What are the rules of ancient Olympics?

Section – C

10. Write any four function of IOC.

11. What are the objectives of Olympic Games?

Section – D

12. Write short note on Olympic ceremony and Olympic value.

Section – E

13. Explain the fundamental principles of olympism.

14. Discuss about ancient and modern Olympics in briefs.

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

Class: XI   **Subject: Phy. Edu.**

Ch. Name: Yoga   **Ch. No.: 3**

General Instruction:
1. **All questions are compulsory.**
2. **The assignment consists of 14 questions and all are compulsory.**
3. **Question 1-8 carry 1 mark each and are Multiple Choice Questions.**
4. **Questions 9 carry 2 marks each and shall not exceed 40-60 words.**
5. **Questions 10-11 carry 3 marks each and shall not exceed 80 -100 words.**
6. **Questions 12 carry 4 marks each and shall not exceed 100-150 words.**
7. **Questions 13 - 14 carry 5 marks each and shall not exceed 150-200 words.**
8. **Summer Holiday work should be written in a fair Note book.**

Section – A

1. On which date is the international yoga Day celebrated every year?

   (a) 15 August   (b) 21 June   (c) 26 January   (d) 21 July

2. Which of the following is not a meditative asana?

   (a) Vajrasana   (b) Padmasana   (c) Shavasana   (d) Gomukhasana

3. Which kriya helps in nasal cleansing?

   (a) Vasti   (b) Neti   (c) Nauli   (d) Dhauti

4. Which kriya leads to the radiance of the head?

   (a) Kapalbhati   (b) Trataka   (c) Vasti   (d) Neti

5. Which kriya improves the power of concentration and cures poor vision?

   (a) Vasti   (b) Nauli   (c) Neti   (d) Trataka

6. Which kriya cleanses the large intestine?

   (a) Vasti   (b) Kapalbhati   (c) Dhauti   (d) Neti

7. Which is the initial step of deep concentration or samadhi?

   (a) Pratyahara   (b) Dhyana   (c) Dharana   (d) Samadhi

8. This means deep thinking without distraction.

   (a) Dhyana   (b) Pratyahara   (c) Samadhi   (d) Dharana

Section – B

9. Differentiate between Dharana & Dhyana.

Section – C

10. Explain the three categories of Asana on the basis of their effects, with one example of each category.
11. Explain the importance of Yoga.

Section – D

12. What do you understand by Shat Karma, Explain any 3 Kriya with its Procedure and benefits.

Section – E

13. What do you understand by Pranayama? Explain any 4 Pranayama with its Procedure and benefits.
14. Briefly explain the Ashtanga Yoga.

R.E.D. GROUP OF SCHOOLS
Holiday Homework Assignment – 4

Class: XI   **Subject: Phy. Edu.**
Ch. Name: Physical Education & Sports for CWSN)   **Ch. No.: 3**

General Instruction:
1. **All questions are compulsory.**
2. **The assignment consists of 14 questions and all are compulsory.**
3. **Question 1-8 carry 1 mark each and are Multiple Choice Questions.**
4. **Questions 9 carry 2 marks each and shall not exceed 40-60 words.**
5. **Questions 10-11 carry 3 marks each and shall not exceed 80 -100 words.**
6. **Questions 12 carry 4 marks each and shall not exceed 100-150 words.**
7. **Questions 13 - 14 carry 5 marks each and shall not exceed 150-200 words.**
8. **Summer Holiday work should be written in a fair Note book.**

Section – A

1. What should we do before extending aid to a person with special need?
   (a) Assume they need our help   (b) Get their consent
   (c) Show excessive concern   (d) none of these

2. What is the first step in showing disability etiquette?
   (a) Speaking in sign language   (b) Use terms like "Handicapped & Retarded"
   (c) Use terms like "Person with blindness"   (d) none of these

3. A child with intellectual disability will show limitations in which of the following areas?
   (a) Conceptual skills   (b) Social skills
   (c) Practice skills   (d) All of these

4. A child falls in the severe intellectual disability category if the IQ is between_____.
   (a) 35 and 55   (b) 20 and 40
   (c) 10 and 20   (d) 55 and 75

5. Which of the following does not broadly define disability?
   (a) Blindness and low-vision   (b) Leprosy-Cured
   (c) Mental retardation and illness   (d) Leukoderma-cured

6. What is the name for the condition under which a person has difficulty in comprehending written text, spelling and writing accurately?
   (a) Spina bifida   (b) Epilepsy
   (c) Dyslexia   (d) Arthritis

7. Which day ever year is celebrated as world disability day?
   (a) December 3   (b) December 4
   (c) December 5   (d) December 6

8. Which professional works with CWSN to evaluate their existing skill set and potential to design a suitable instructional method and alter general education lessons to make these accessible to them?
   (a) Counselor   (b) Physiotherapist
   (c) Special educator   (d) Speech therapist

Section – B

9. How do you define "disability"? Explain with examples.

Section – C

10. What are the causes of physical disability? Write about any two in detail.
11. What are the objectives of adapted physical education?

Section – D

12. Describe the concept of disability and disorder in detail.

Section – E

13. Make a table on the types of disability, its causes and its nature.
14. Write note on how the following can help students with special needs:
    (a) Special Education counselor   (b) Occupational therapist   (c) Special Educator
    (d) Physical education teacher   (e) Physiotherapist