CH. CHHABIL DASS PUBLIC SCHOOL

SUMMERVACATION

HOMEWORK

SESSION 2026-27

CLASS XI (SCIENCE)

PHYSICS

Q1. Do the given assignment. (Chapter 1 and 2). Q2.

Prepare chapter 1 and 2 for UT-1.

Q3. Complete your practical file work for the experiments done in the class.

Physics
Class XI
Units and Measurements
Assignment 1

Dimensional analysis

1. If the units of energy, force and velocity are 50 J, 5 N and 2m/ s, what will be unit of mass, length and time?
2. The units of power, force and time are 1 kW, 1kN and 1 milli second. Find the unit of mass and length.
3. What will be the value of G in CGS units if in SI units it is 6.67×10^{-11} m^3 kg^{-1} s^{-2}
4. What will be the dimensions of **a/b** in the relation **$E= b-x^2/ at$**, where E is energy, x is distance and t is time.
5. In the relation **$h= 2T\cos \alpha / r^2\rho g$**, where h is the height, T is surface tension ρ is density and r is the radius of a capillary tube, α is angle of contact and g is acceleration due to gravity. Verify the correctness of the equation.
6. Give one example each of physical quantities which have SI unit but no dimensions, which neither have unit nor dimension.
7. Acceleration due to gravity is $10m/s^2$. Determine its value in $cm/minutes^2$.
8. If the units of force and length, each are doubled then how many times the unit of energy, Surface tension and stress be affected?
9. If velocity, density and frequency are taken as fundamental quantities, what will be the dimensions of linear momentum and surface tension?
10. If velocity, acceleration and force are chosen as fundamental units, what will be the dimensions of linear momentum, angular momentum and Young's modulus of elasticity?
11. A piece of lead has a mass of 23.94g and a volume of 2.10 cm^3. Calculate the density in SI units.
12. If force, length and time are fundamental quantities, determine the dimensions of mass.
13. Check the dimensional correctness of the following equation –

$$\rho = \frac{3g}{4\pi R G}$$

14. If the mass (m) of a stone depends on velocity (v), ρ (density of water) and g, find the expression for mass.
15. Determine the expression for centripetal force if it depends on mass m, radius r and speed v of the object.
16. Obtain an expression for the height to which a fluid of density ρ and surface tension T will rise in a capillary tube of radius r. Given $h \alpha 1/r$
17. E, m, l and G denote energy, mass, angular momentum and gravitational constant respectively. Determine the dimensions of **EL^2 / m^5G^2**
18. As H(heat)depends on I, R and t, determine its formula with the help of dimensional analysis.
19. Find the dimensional formulae for the following physical quantities:
    a) Torque
    b) Coefficient of Viscosity
    c) Voltage
20. A large fluid star oscillates in shape under the influence of its own gravitational field. Using dimensional analysis, find the expression for period of oscillation (T) in terms of radius of star (R), mean density of fluid (ρ) and universal gravitational constant (G).
21. Young's modulus of steel was calculated to be 18 X 10 $^{12}N/m^2$. Express it in CGS units.
22. If energy E is proportional to mass m and c, the speed of light, determine the relation in these quantities using the concept of dimensions.
23. If force (F) acceleration (A) and time (T) are taken as fundamental units, then find the dimension of energy.
24. Find the dimensions of latent heat and specific heat?

Assignment -2

Motion in a straight line

1. A rocket is fired upwards from earth's surface such that it creates an acceleration of 20 m/sec^2. If after 5 sec its engine is switched off, the maximum height of the rocket from earth's surface will be?
(Ans: 750m)

2. The displacement of a particle along x-axis is given by $x = 4 + 6t + 5t^2$. Obtain its velocity and acceleration at t = 2s.
(Ans: 26m/s, 10m/s)

3. The position of an object moving along x axis is given by $x = a + bt^2$, where $a = 8.5m, b = 2.5m/s^2$ and t is in seconds. What is its velocity at t = 0s and t = 2s? What is the average velocity between t = 2s and t = 4s?
(Ans: v = 10m/s; average v = 15m/s)

4. A body covers 12m in 2nd second and 20m in 4th second. How much distance will it cover in 4s after the 5th second
(Ans:136m)

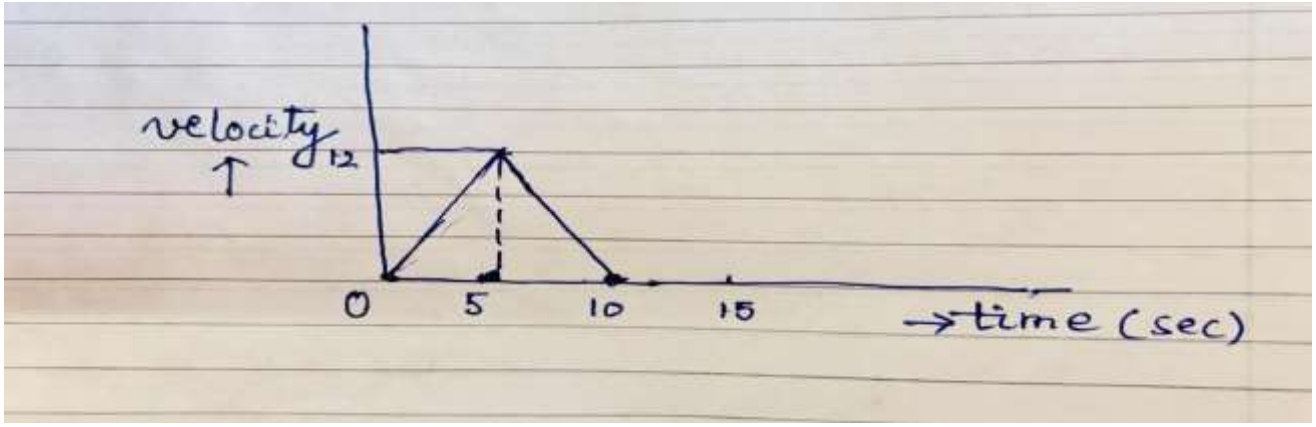
5. A body covers 4m in the 3rd second and 1 2m in the 5th second. If the motion is uniformly accelerated, how far will it travel in the next 3s?
(Ans: 60m)

6. Two balls are thrown simultaneously. Ball A vertically upwards at 20m/s from the ground and ball B vertically downwards from a height of 40m with the same speed and along the same line of motion. At what point do the two balls collide?
(Ans: 15.1m from ground)

7. A balloon is ascending at the rate of 4.9m/s. A pocket is dropped from the balloon when situated at a height of 245m. How long does it take the packet to reach the ground? What is its final velocity?
(Ans: 7.6s, v=69.6m/s)

8. A car covers the first one third of a distance x at 10km/h, the second one third at 20km/h and the last one third at 60km/h. Determine the average speed of the car over the entire distance x.
(Ans: 18km/h)

9. The speed – time graph of a particle moving along a fixed direction is shown below. Obtain the (i) distance traversed by the particle between t = 0 to 10s (ii) average speed between this time interval.
(Ans: 60m; 6m/s)



COMPUTER SCIENCE

Instructions for Students

1. Complete all questions neatly in a separate notebook or A4 sheets.
2. Write all programs with proper indentation and comments.
3. Submit the holiday homework on the first working day after vacation.
4. Viva may be conducted based on the submitted work.
5. Practical programs must be handwritten.

Python Programming

Q1. Write Python programs for the following:

1. Program to calculate the area and perimeter of a rectangle.
2. Program to find simple interest and compound interest.
3. Program to accept marks of 5 subjects and calculate percentage and grade.

4. Write a program that takes a food bill amount as input from the user. Calculate a **12%**

CGST/SGST tax and a **10% tip** on the original bill amount. Print a neat receipt showing:

- Original Amount
- Tax Amount
- Tip Amount
- Final Payable Amount

5. Ask the user for the radius (r) of a cylinder and its height (h). Calculate and display its volume (V) and total surface area (A).

Perform the following practical activities:

1. Install Python on your computer/laptop and write steps of installation.
2. Create a chart showing:
    - Python tokens
    - Keywords
    - Identifiers
    - Operators

Design the following:

1. A poster on “Safe Internet Practices”.
2. A digital chart showing evolution of computers.

CHEMISTRY

NUMERICAL PRACTICE.

Practice numerical of molarity,
Practice numerical of stoichiometry, Mole concept from NCERT book.
Read Ch-1 and Ch- 2 thoroughly from NCERT book.

PRACTICAL BASED HOMEWORK

Complete your lab manual

Learn common lab apparatus.

UT-1

Prepare, UT-1 syllabus – CH-1 and CH- 2

ENGLISH -

Revise

* Writing Skills and Grammar topics done in the class.

* 'My Word Bank'

Read English newspapers daily and collect samples of reports, classified advertisements, posters and articles.

#Practise any two factual/ descriptive/ literary unseen passages.

Practise any two case - based unseen passages.

Read a short story collection and shares the stories with your classmates after the break.

Read the chapter Mother's Day and prepares a PowerPoint presentation.

MUSIC

1. परिभाषा -अलंकार, कण ,मींड खटका ,मुर्गी, गमक

2.जीवन परिचय फैयाज खान पंडित कृष्ण शंकर पंडित

3.ताल तीन ताल , झपताल -शास्त्रीय परिचय -एक गुण दो गुण, त्रिगुण चौगुन

4.तानपुरे को मिलने की विधि और उनके नाम चित्र सहित

5.विशेषताए

6.भैरव -आलाप

7.ताने 16 मात्रा 32 मात्रा

8.तराना राग भैरव 16 मात्रा मे

9.राग भैरव द्रुत लय 16 मात्रा में स्थाई अन्तरे के साथ बदिश लिखे

BIOLOGY

1. Prepare the UT-1 syllabus and practice for the labeled diagrams.
2. Complete all the NCERT question/answers in the notebook.
3. Complete all done practical in biology practical file.
4. Do the given assignments (Ch-1 to 4)

COMMERCIAL ART

- Make a PPT on career options & colleges in India. It should have special effects.
- Make a greeting card of a size - 10" × 8.5" on hard attractive sheet with cut/ paste and colour. It should be creative but not got, sitare & golden silver sparkles. Nothing should be written on the card.
- Make a paper mach'e creative iteam and paint it with Madhubani / worli design.
- Visit to the National Museum, New Delhi, Craft Museum near Pragti Maidan. New Delhi and click the photographs of the iteams display there and paste them on A2 size sheet with information.

PSYCHOLOGY

1. Maintain a Project File.
2. Revise UT – 1 Syllabus

Format of Project File (Case Study File)

1. Cover Page
2. Acknowledgement
3. Certificate
4. Index

I. Case Study
- Introduction to Case Study
- Advantages and disadvantages
- Ethical Issues

II. Movie Analysis
- Introduction / Theme of the Movie
- Synopsis/ Plot of the movie
- Character Analysis

Psychological Themes / Theories

- Causal factors
- Treatment Plan
- Conclusion
- References Movies List
- Barfi

- Taare Zameen Par
- I am Sam
- Rain Man
- Forrest Gump

Note:

- ❖ Do this work on A4 size/file size sheet (white one side ruled or interleaf).
- ❖ Use only black and blue pen while writing content

MATHEMATICS

- ➢ Maths activities to be done in practical file.
- ➢ Worksheet of Sets
- ➢ Worksheet of Relations and Functions
- ➢ Worksheet of Linear Inequalities

PHYSICAL HEALTH & EDUCATION

Theory Assignment-

Complete the following units from your textbook:

Chapter 1 ; Changing Trends and Careers in Physical Education
Chapter 2: Olympic Value Education (or Olympism)
Chapter 3: Physical Fitness, Wellness and Lifestyle

Project/Practical Work

Practical 1: Chosen Game/Sport Details Labelled diagram of the field, history, rules, and fundamental skills for one chosen game (e.g., Basketball, Football, Volleyball, Kabaddi, Cricket, or Kho-Kho)Include in your file: History of the game , Labelled diagram of the field/court ,Equipment used ,Game rules, Common terminologies, Basic skills involved

INFORMATICS PRACTICES

Create a web site (Minimum 5 web pages) / Power Point presentation (Minimum 10 slides) on any of the following topics:

1) Application of computers
2) Input and output devices
3) Generations of Computers
4) Generation of Computer Languages
5) Types of Computers
6) Types of Software
7) Computer Memory/Memory Devices
8) Operating Systems
9) Being a Computer student, it is important for you to know about different inventors/ developers in the world of technology. Research on any one of the following mentioning their achievements and contributions in the field of technology. Create a biography through PowerPoint presentation/ Website:-
    a. Charles Babbage
    b. Steve Jobs
    c. Bill Gates
    d. Steve Wozniak

- Revise chapter: computer fundamentals Python programming