

**DAV PUBLIC SCHOOL, IFFCO, PARADEEP**  
**SUMMER HOLIDAY HOME WORK -2025-26**  
**CLASS-XI**

SUBJECT	
MATHEMATICS	<ol style="list-style-type: none"> <li>1. Do all the exercise problems of chapter-1.</li> <li>2. Do all the exercise problems of Exemplar chapter-1.</li> </ol>
PHYSICS	Do the homework of Physics as mentioned in attached PDF.
CHEMISTRY	<ol style="list-style-type: none"> <li>1. Do problem 1.1 &amp; calculations related to addition, subtraction, multiplication &amp; division by scientific notation.</li> <li>2. Do Q. no-9,13,14,15,16,18,19,20,21,22,27,30,31,32.</li> <li>3. Practice all the laws related to chemical combination.</li> </ol>
BIOLOGY	Do the homework of Biology as mentioned in attached PDF.
COMPUTR SCIENCE	Do the homework of Computer science as mentioned in attached PDF.
PHYSICAL EDUCATION	<ol style="list-style-type: none"> <li>1. Do all the MCQ questions and answers with long questions of chapter-1.</li> <li>2. Write an essay on 11<sup>th</sup> International Yoga Day</li> <li>3. Prepare a project on- 400 mtr. Track with marking all events to be pasted in the copy.</li> </ol>

SUMMER HOLIDAY HOMEWORK (2025)

CLASS XI, SUB – PHYSICS

1. Write characteristics of a physical unit.
2. Write the advantages of si system.
3. Round off the following numbers as indicated
  - i) 18.35 up to 3 digits
  - ii) 143.45 up to 4 digits
  - iii) 18967 up to 3 digit
  - iv) 12.653 up to 3 digits
  - v) 248337 up to 3 digits
  - vi) 321.135 up to 5 digits
  - vii)  $101.55 \times 10^6$  up to 4 digits
  - viii)  $31.325 \times 10^{-5}$  up to 4 digits
4. State the number of significant figures in the following
  - i) 2.000m ii) 5100Kg iii) 0.050cm
5. If  $L = 2.5 \times 10^4$  and  $B = 3.9 \times 10^5$  then find LB up to correct no. of significant figures.
6. Subtract  $2.5 \times 10^4$  from  $3.9 \times 10^5$  with due regard to significant figures.
7. The radius of a sphere is 1.41 cm. Express its volume to an appropriate number of significant figures.
8. The mass of a body is 275.32 g & its volume is 36.41 cm<sup>3</sup>. Express its density upto appropriate significant figures.
9. The mass and radius of the earth are  $5.975 \times 10^{24}$  Kg and  $6.37 \times 10^6$  m respectively. Calculate the average earth's density to correct significant figures. Take  $\pi = 3.142$ .
10. If force (F), length (L) & time (T) are chosen as the fundamental quantities, then what would be the dimensional formula for density?
11. If the units of force, energy and velocity are 20N, 200J and 5 ms<sup>-1</sup>, find the units of length, mass and time.
12. When 1m, 1Kg and 1 min are taken as the fundamental units, the magnitude of the force is 36 units. What will be the value of this force in CGS system?
13. Find the dimensional formulae of (i) charge (ii) potential (iii) resistance (iv) capacitance.
14. The distance covered by a particle in time t is given by  $x = a + bt + ct^2 + dt^3$ ; find the dimensions of a, b, c & d.
15. Find the dimensions of (a x b) in the equation:  $E = \frac{a-t^2}{bx}$ ; where E is energy, x is distance & t is time.
16. The Vander Wall's equation for a gas is
$$\left(P + \frac{an^2}{V^2}\right)(V-nb) = nRT$$
Determine the dimensions of a & b. Hence write the SI units of a & b.



17. When white light travels through glass, the refractive index of glass ( $\mu = \text{velocity of light in air/velocity of light in glass}$ ) is found to vary with wavelength as  $\mu = A + \frac{B}{\lambda^2}$ . Using the principle of homogeneity of dimensions, find the SI units in which the constants A and B must be expressed.
18. In the equation:  $y = a \sin (\omega t - kx)$ , t and x stand for time and distance respectively. Obtain the dimensional formula for  $\omega$  and k.
19. Check the correctness of following relation by the method of dimensions.

$$t = \frac{\sqrt{\rho r^3}}{T}$$

Where, 't' = time period of oscillation,  $\rho$  = density, r = radius, T = force of surface tension.

20. The frequency (n) of vibrations of a string of length l, mass per unit length m & having a tension T in it, is given by

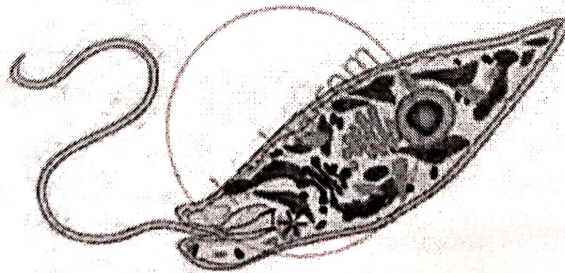
$$n = \frac{1}{2l} \sqrt{\frac{T}{m}}$$

Check by the method of dimensional analysis, whether the relation is correct.

## SUBJECT-BIOLOGY

### CHAPTER-DIVERSITY IN THE LIVING WORLD & BIOLOGICAL CLASSIFICATION

1. Give one example of a fungus as a source of antibiotics?
2. What do the terms phycobiont and mycobiont signify?
3. Describe the four major groups of Protozoa briefly.
4. Observe the given diagram and answer the questions that follows



a. Identify the group to which the above organism belongs to and write the characteristics of these organisms.

5. State two economically important uses of:

(a) heterotrophic bacteria

(b) archaeobacteria

6. Find out what the terms 'algal bloom' and 'red tides' signify.

7. The classification system is changing very frequently. Discuss why?

8. Who gave the binomial name of classification? What are the universal rules of nomenclature?

9. *Brassica competes Linn*

- Give the common name of the plant.
- What do the first two parts of the name denote?
- Why are they written in italics?
- What is the meaning of Linn written at the end of the name?

10. How is the five-kingdom classification advantageous over the two-kingdom classification?

## SUBJECT-COMPUTER SCIENCE

### CHAPTER – COMPUTER SYSTEM & ORGANIZATION

Q1. Rajiv is a commerce student. He joins Tally class. His instructor gives him a software that can manage Inventories. Under which category will this software fall?

- (a) Application                      (b) System                      (c) Utility                      (d) DBMS

Q2. Identify the following as Application software or Utility software:

Quick Heal Antivirus, Tux Paint

Q3. In hard discs, collection of seek time, transfer time and rotational delay is equal to \_\_\_\_\_.

- (a) Processing time    (b) storage time    (c) access time    (d) delay time

Q4. A rigid, magnetically sensitive disk that spins rapidly and continuously inside the computer housing is termed as \_\_\_\_\_.

Q5. Software that controls and manages internal computer operations is called \_\_\_\_\_.

Q6. Why is primary memory termed as "destructive write" memory but "non – destructive read" memory?

Q7. Mr X has recently installed a new operating system on his computer.

(i) Describe the main functions of an operating system.

(ii) Identify two utility programs used by an operating system.



(iii) What does command-driven user interface mean?

Q8. What is a volatile memory?

Q9. What is SOC? How is it different from CPU and why it is considered for better development?

Q10. What does a bus mean? What is the difference between address bus and data bus?

Q11. Find the greater from the following:

$$2^{30} \text{ MB} \times 2^{20} \text{ KB}, 2^{12} \text{ MB} \times 2^8 \text{ GB}$$

Q12. Give some examples of Language Translator.

Q13. Fill in the blanks:

(a) 2PB = \_\_\_\_\_ GB

(b) 1 MB = \_\_\_\_\_ Byte

(c) 4 TB = \_\_\_\_\_ GB

(d) 3PB = \_\_\_\_\_ TB

Q14. Secondary storage is also known as auxiliary memory. Explain.

Q15. What is the significance of Utility Software? Write its Functions with at least two examples.

### **COMPETENCY BASED QUESTIONS**

Read the following text and answer the following questions on the basis of the same:

Q16. Memory is the electronic holding place for the instructions and data a computer needs to reach quickly. It's where information is stored for immediate use. Memory is one of the basic functions of a computer, because without it, a computer would not be able to function properly. Memory is also used by a computer's operating system, hardware and software. There are technically two types of computer memory: primary and secondary. The term memory is used as a synonym for primary memory or as an abbreviation for a specific type of primary memory called random access memory (RAM). This type of memory is located on microchips that are physically close to a computer's microprocessor.

(i) The Boot sector files of the system are stored in which computer memory?

(A) RAM                      (B) Cache                      (C) ROM                      (D) Register

(ii) Which memory acts as a buffer between CPU and main memory?

(A) RAM                      (B) Cache                      (C) ROM                      (D) Storage

(iii) Which of the following is the smallest unit of data in a computer?

(A) Bit                      (B) Nibble                      (C) KB                      (D) Byte

(iv) Where does your PC store your programs when the power is off?

(A) DRAM                      (B) ROM                      (C) Cache                      (D) Hard Disk Drive

(v) What is the name of the storage device which is used to compensate for the difference in rates of flow of data from one device to another?

(A) Cache

(B) Concentrator

(C) Buffer

(D) I/O device

Q17. Software is a set of instructions, data, or programs used to operate a computer and execute specific tasks. In simpler terms, software tells a computer how to function. It's a generic term used to refer to applications, scripts, and programs that run on devices such as PCs, mobile phones, tablets, and other smart devices. Software contrasts with hardware, which is the physical aspects of a computer that perform the work. There are two basic types: System software to provide core functions such as operating systems, disk management, utilities, hardware management and other operational necessities. Application software (applications or apps) helps users perform tasks. Office productivity suites, data management software, media players and security programs are examples. Applications also refer to web and mobile applications like those used to shop on Amazon.com, socialize with Facebook or post pictures to Instagram.

(i) A part of computer system that consist of data on computer instructions:

(A) Software

(B) Hardware

(C) Chip

(D) DOS

(ii) Special purpose software is:

(A) Application software

(B) System software

(C) Utility software

(D) None of the above

(iii) A system program that set-up executable program in main memory ready for execution is called:

(A) Text editor

(B) Linker

(C) Compiler

(D) Loader

(iv) A computer program that functions as an intermediary between a computer user and the computer hardware is called:

(A) software (B) hardware (C) operating system (D) driver

(v) Software programs developed for perform particular tasks related to managing computer resources is called:

(A) System software

(B) Utility software

(C) Application software

(D) Helper software

Q18. Mr Adam, a singer purchased a new computer. Sometimes he uses it to listen to music or to watch his favourite movie. He prefers to use the CDROM for this purpose. One day, he was unable to listen music, in spite of loading the CD in the CD drive. He decided to fix the problem. Then, he went across various sites to get some help. In almost every site, he found the term IPO Cycle. So, he wanted to know about IPO cycle for playing music.

a) Name an input device which can be used by Mr Adam to record a song.

b) Suggest the output device that can be used by Mr Adam while playing music.

c) Mention the name of any two storage devices to store data.

d) How the IPO cycle works?

e) Name any two common file formats to store a music file.

Q19. Mr. Banoj opened his laptop for online class, but it took more time than usual to open. So he checked his system and found many files are there with the same name and contents of some files



are missing. Even if he had never used any secondary storage devices in his laptop, this situation happened. So, he decided to install antivirus software to prevent his laptop from this situation.

a) Suggest Mr. Banoj, the cause of slowing down of the computer, replication of files and missing of contents from files.

b) Name the category to which Antivirus software belongs to.

c) Which type of OS does Unix belong to, according to license?

d) As an IT expert, suggest Mr. Banoj for an appropriate OS which is more secured in the absence of Antivirus software

i) Windows                      ii) Unix                      iii) Both A and B                      iv) None of these

e) What could be the possible source of virus in Banoj's system in the above example?

## CH – DATA REPRESENTATION

Q1. Convert decimal number system to binary number system for the followings:

- a.  $(19)_{10} = (?)_2$
- b.  $(122)_{10} = (?)_2$
- c.  $(4.8125)_{10} = (?)_2$
- d.  $(27.625)_{10} = (?)_2$

Q2. Convert decimal number system to octal number system for the followings:

- a.  $(161)_{10} = (?)_8$
- b.  $(122)_{10} = (?)_8$
- c.  $(889)_{10} = (?)_8$

Q3. Convert binary number system to decimal number system for the followings:

- a.  $(11011)_2 = (?)_{10}$
- b.  $(110100)_2 = (?)_{10}$
- c.  $(100.1101)_2 = (?)_{10}$