

LITTLE FAIRY PUBLIC SCHOOL

Summer Holidays Homework CLASS-XII (2026-27) SCIENCE

Holiday homework is an attempt to channelize your creative energy; it keeps you connected with the syllabus. This summer vacation, the Holiday Homework has been designed with the aim of activity-based learning. It includes assignments and activities that will foster curiosity, develop creativity, enhance knowledge, and instill the joy of learning. Doing it with the right spirit and enthusiasm will make it a great learning experience.

Discover a new and better you who is enriched, confident, and performs every action with utmost perfection. It's the perfect time for strengthening family bonds, sharing festivities, joys and sorrows, and spending quality time together.

Take some time to focus on interesting books and read as much as you can about different places and people. Take good care of your health and hygiene. In this scorching heat, keep yourself well hydrated and energetic.

Engage in morning walks, yoga, exercise, or meditation with your parents or grandparents.

Revise all the work done in class. Ensure that your work is neat, presentable, and original, and conforms to the guidelines given for the homework as directed by the teachers.

ENGLISH:

PROJECT WORK: Instructions for Project File:

- The project must be handwritten and should be of 10-15 pages.
- It must include the following in proper sequence:
 1. Cover Page
 2. Certificate
 3. Acknowledgement
 4. Index
 5. Introduction
 6. Content with proper headings and subheadings
 7. Conclusion
 8. Bibliography
- The content should be written in simple and clear English.
- Students must include relevant examples, facts, and real-life references in the content.
- Maintain a neat presentation with proper margins and headings.
- You may add pictures, diagrams, or newspaper cuttings.
- Avoid copying directly from the internet; the work should be original.
- Follow all CBSE project guidelines.

TOPICS ARE AS FOLLOWS:

Roll No. 1–7	Topic: Impact of Social Media on Youth
Roll No. 8–14	Topic: Importance of English in Career Development
Roll No. 15–21	Topic: Mental Health Awareness among Students
Roll No. 22–28	Topic: Digital Education in Modern India
Roll No. 29–34	Topic: Environmental Issues and Sustainable Development
Roll No. 35–40	Topic: Value of Mother Tongue in Education

INSTRUCTIONS FOR MAKING THE PROJECT:

- The project must contain at least 20-25 sheets
- Use as many pictures/photographs as you require Use sketch pens for headings and coloured pens for content.
- Use A4 size coloured /designer paper sheets for the project and after compiling everything it should be submitted in spiral binding/Project file

NOTE: THE PROJECT SHOULD BE HANDWRITTEN

MATHEMATICS

(I) **PRACTICAL WORK:** Complete the given Lab Activities in the Practical File.

Activity -1 To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \perp m\}$ is symmetric but neither reflexive nor transitive.

Activity-2 To find analytically the limit of a function $f(x)$ at $x = c$ and to check the continuity of the function at that point.

Activity-3 To understand the concepts of decreasing and increasing functions. Page 3 of 14

Activity-4 To understand the concepts of local maxima, local minima and point of inflection.

Activity-5 To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.

(II) **ACTIVITY FILE:** (i) Make a chart of the formulae FORMULAE SHEET on A4 sheets.

(III) **CREATIVE WORK:** Draw MIND MAPS on A4 sheets chapterwise.

(IV) **WRITTEN ASSIGNMENT:** (i) Do NCERT textbook exercise based questions in Notebook, (ii) Solve EXEMPLAR questions and ASSIGNMENT WORKSHEET Questions in your Practice NB.

CHEMISTRY:

(I) **PROJECT WORK :** PREPARE A INVESTIGATORY PROJECT/ RESEARCH WORK ON ANY TOPIC RELATED TO CHEMISTRY

Example 1: Waste to chemicals: Transforming wastes and residues to energy, fuels and other useful chemicals.

Example 2. Endangered elements: Managing and extraction, use, reuse and alternative development for elements in the chemical enterprise that are facing critical supply risks.

(II) **WRITTEN ASSIGNMENT:** Do practice of numericals and chapter wise MCQ, Assertion Reason and Case Study Based Questions of the given chapters in Chemistry Notebook .

Chapter 6: Haloalkenes and Haloarenes Chapter 7: Alcohols, Phenol and Ether

Chapter 8: Aldehydes Ketones and Ethers

Do the back exercise questions of NCERT in Chemistry Notebook.

PHYSICS :

Do the given assignment in your physics notebook.

Complete 6 activities in physics activity file and 4 experiment in practical file.

Revise NCERT chapter 1,2, 3 and 4 and Practice NCERT exercise questions and examples

Prepare physics project file with working model as discussed in class related to the cbse syllabus.

PROJECT WORK: PREPARE A INVESTIGATORY PROJECT/ RESEARCH WORK ON ANY TOPICS

Suggested Investigatory Projects

1. To study various factors on which the internal resistance/EMF of a cell depends.
2. To study the variations in current flowing in a circuit containing an LDR because of a variation in (a) the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance). (b) the distance of an incandescent lamp (of fixed power) used to 'illuminate' the LDR.
3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equiconvex lens (made from a glass of known refractive index) and an adjustable object needle.
4. To investigate the relation between the ratio of (i) output and input voltage and (ii) number of turns in the secondary coil and primary coil of a self-designed transformer.
5. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.
6. To estimate the charge induced on each one of the two identical Styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law.

7. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency.
8. To study the earth's magnetic field using a compass needle -bar magnet by plotting magnetic field lines and tangent galvanometer.

COMPUTER SCIENCE: Do the given assignment in your Computer Science notebook.

BIOLOGY :

Study and observe the following:

- A. Flower adapted to pollinate session by different agencies (wind, insects birds).
- B. Pollen germination on stigma through a permanent slide or scanning electron microscope.
- C. Identification of stages of gamete development. i.e. T.S. of testis and T.S. of ovary, through permanent slides, from (grasshopper/mice).
- D. Meiosis in onion bud cells or grasshopper. testis through permanent Slides.
- E. TS of blastula through permanent slide(mammalian)
- F. Control pollination emasculation, bagging and tagging.

CREATIVE WORK: Prepare Science model on given topic:

Theme: Science & Technology for Society

Sub Themes: (i) Sustainable Agriculture (Biology students)

(ii) Green Energy (CS Students)

(iii) Health and Hygiene (Biology students)

(iv) Waste Management and Alternatives to Plastic (CS/ Biology students)

Instructions : # Model should be working based on scientific principles.

Strictly not advise to use thermocol.

PHYSICAL EDUCATION:

(I) WRITTEN WORK: Prepare the Practical File (In the lab manual only)

In Practical File write the following three practicals in detail.

1. **Practical- 1:** Fitness tests administration. (SAI Khelo-India Test). SAI Khelo-India Fitness Test Battery: (Test name, objective/purpose, equipment required, procedure, scoring method, standard norms and the picture/diagram)

A. For the age category of 5 to 8 years old:

1. BMI
2. Flamingo balance test
3. Plate tapping test

B. For the age category of 9 to 18 years old:

1. BMI
2. Push-ups & Modified push-ups
3. Curl-ups & Partial curl-ups
4. 50mDash
5. Sit and Reach test
6. 600m Run/walk

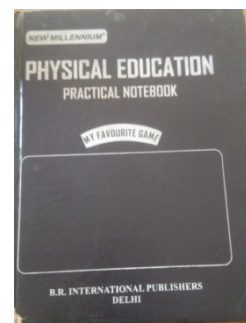
2. **Practical- 2:** Procedure for asanas, benefits & contraindications for any two asanas for each lifestyle diseases: Obesity, Diabetes, Hypertension, Asthma, Arthritis & lower back pain. (Total 10 asanas will be there, picture/diagram is mandatory for all asanas)

3. **Practical- 3:** Anyone IOA recognized Sport/Game of choice. Labelled diagram of Field & Equipment. Mention the history, rules, terminologies, fundamental skills, scoring method, fouls, officials, International & Indian federation, and arjun awardee.

(Ex: Volleyball/Basketball/Football/Handball/Hockey/Cricket/Kabaddi/Kho-Kho/Archery /Badminton/Boxing/Chess/Swimming)

NOTE: Brown cover page, picture/diagram and index are mandatory.

2. Complete the subject copy (till chapter-2).



ASSIGNMENT SUBJECT: ENGLISH CLASS –XII (2026-27)

- Q1.) Write an article in 150–200 words on the topic: “How Technology is Changing Education”
You are Riya/Rohan of Class XII studying in your school. Discuss both the advantages and disadvantages of technology in students’ lives.
- Q2) Write an article in 150–200 words on: “Importance of Physical Fitness for Students”
Highlight the need for exercise, healthy habits, and balanced lifestyle among teenagers.
- Q3) Your school organized a Tree Plantation Drive on World Environment Day. As the Cultural Secretary of your school, write a report in 120–150 words describing the event, participation of students, and its importance.
- Q4) Your school recently celebrated its Annual Sports Day with great enthusiasm. Write a report in 120–150 words for your school magazine describing the main events and achievements of students.
- Q5). In The Third Level, Jack Finney presents the modern world as full of stress, insecurity, and fear, while the past appears peaceful and comforting. Charley escapes into the “third level” because he is unable to cope with the pressures of modern life. Do you think escapism is a temporary relief or a permanent solution to problems? Critically analyse Charley’s experience and relate it to the way people today try to escape from stress and reality in their daily lives. (Answer in 150–200 words).
- Q6) Answer the following questions in 30–40 words each:
- What do the young trees symbolize in Keeping Quiet?
 - Why is the poet worried in My Mother at Sixty-Six?
 - What was Franz expected to prepare for school in The Last Lesson?
 - Why did M. Hamel wear his special dress?
- Q7) Answer the following in 120–150 words each:
- What message does The Last Lesson convey about language and patriotism?
 - Explain the theme of aging and fear of loss in My Mother at Sixty-Six.
 - What does Keeping Quiet teach us about life?
- Q8). Read the following extract from My Mother at Sixty-Six and answer the questions:
“Driving from my parent’s home to Cochin last Friday morning,
I saw my mother, beside me,
doze, open-mouthed, her face ashen like that
of a corpse...”
- Where is the poet going?
 - What does “ashen like that of a corpse” signify?
 - What feeling does the poet experience here?
- Q9). Write the summary and theme of Lost Spring in 150–200 words.
- Q10). Do any ONE of the following:
- Write a diary entry as Franz after the last lesson expressing his feelings.
 - Prepare a speech on: Importance of Learning One’s Mother Tongue.

Class XII Mathematics

Assignment Worksheet CH-3 Matrices

Q1. If A and B are square matrices of same order, then which of the following statements is/are always true?

(i) $(A + B)(A - B) = A^2 - B^2$

(ii) $AB = BA$

- (iii) $(A + B)^2 = A^2 + AB + BA + B^2$ (iv) $AB = 0 \implies A = 0 \text{ or } B = 0$
 (a) Only (i) and (iii) (b) Only (ii) and (iii) (c) Only (iii) (d) Only (iii) and (iv)
- Q2. If $A = \begin{bmatrix} 1 & a & b \\ -1 & 2 & c \\ 0 & 5 & 3 \end{bmatrix}$ is a symmetric matrix, then the value of $3a + b + c$ is:
 (a) 2 (b) 6 (c) 4 (d) 0
- Q3. If $A = \begin{bmatrix} \cos x & -\sin x \\ \sin x & \cos x \end{bmatrix}$ and $A + A' = I$, then the value of $x \in \left[0, \frac{\pi}{2}\right]$ is:
 (a) 0 (b) $\pi/4$ (c) $\pi/3$ (d) $\pi/2$
- Q4. If $A = \begin{bmatrix} \frac{1}{2}\cos x & -\sin x \\ \sin x & \frac{1}{2}\cos x \end{bmatrix}$ and $A + A' = I$, then the value of $x \in \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$ is:
 (a) $\pi/2$ (b) $\pi/3$ (c) 0 (d) $-\pi/2$
- Q5. Which of the following cannot be the order of a row matrix?
 (a) 2×1 (b) 1×2 (c) 1×1 (d) $1 \times n$
- Q6. Which of the following properties is/are true for two matrices of suitable orders?
 (i) $(A + B)' = A' + B'$ (ii) $(AB)' = A'B'$
 (iii) $(A - B)' = B' - A'$ (iv) $(kAB)' = kB'A'$
 (a) Only (i) (b) (i) (ii) and (iii) (c) (i) and (ii) (d) (i) and (iv)
- Q7. If A and B are skew symmetric matrices of same order, then which of the following matrices is also skew-symmetric?
 (a) AB (b) AB+BA (c) $(A + B)^2$ (d) $A - B$
- Q8. If A and B are skew symmetric matrices of same order, then $AB' + B'A$ is a/an:
 (a) Symmetric Matrix (b) Skew-symmetric Matrix (c) Null Matrix (d) Identity Matrix
- Q9. If a square matrix A is such that $A^2 = A$ and $(I - A)^3 = xA + I$, then value of x is equal to:
 (a) 7 (b) -7 (c) 5 (d) -1
- Q10. If A is a square matrix such that $A^2 = A$ then $(A - I)^3 - A$, is equal to:
 (a) I (b) A (c) -I (d) A^2
- Q11. For matrix $A = \begin{bmatrix} -p & q \\ r & p \end{bmatrix}$ is such that $A^2 = I$, then:
 (a) $1 + p^2 + qr = 0$ (b) $1 - p^2 - qr = 0$ (c) $1 - p^2 + qr = 0$ (d) $1 + p^2 - qr = 0$
- Q12. For any square matrix A with real entries, If $A + A'$ is a symmetric matrix then:
 (a) $(A - A')$ cannot be a skew symmetric matrix (c) $(A - A')$ is a skew symmetric matrix.
 (b) A is always a symmetric matrix (d) A is always a skew symmetric matrix.
- Q13. A matrix $B = [b_{ij}]_{m \times m}$ is said to be a diagonal matrix if:
 (a) $b_{ij} = 0$, when $i = j$. (b) $b_{ij} = 1$, when $i = j$.
 (c) $b_{ij} = 1$, when $i \neq j$. (d) $b_{ij} = 0$, when $i \neq j$.
- Q14. If $A = [a_{ij}]_{3 \times 3}$ is a scalar matrix then which of the following must be true?
 (a) A must be a symmetric matrix (b) A must be a skew symmetric matrix
 (b) A must be an Identity matrix (d) A must be a null matrix.
- Q15. Determine a matrix X such that $2A + 3B + X = O$, where $A = \begin{bmatrix} 7 & -2 \\ -5 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & 2 \\ 1 & -5 \end{bmatrix}$.
- Q16. Find the value of $(b - a)^{c+d}$, if $\begin{bmatrix} 2a + b & a - 2b \\ 5c - d & 24 \end{bmatrix} = \begin{bmatrix} 4 & -3 \\ 11 & 4c + 3d \end{bmatrix}$.

- Q17. For $A = \begin{bmatrix} -2 & 1 \\ -1 & -1 \end{bmatrix}$, the sum of the diagonal elements in A^{12} is $m \times (9)^n$; $m, n \in N, m < n$. Then write the value of $(m + n)$.
- Q18. If $A = \begin{bmatrix} 2 & 0 & 1 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{bmatrix}$, then compute $A^2 - 5A + 4I$.
- Q19. Find matrix A and B, if $A + B = \begin{bmatrix} 1 & 1 & -1 \\ 0 & 2 & 3 \\ -2 & 0 & -3 \end{bmatrix}$, $A + 2B = \begin{bmatrix} -1 & 1 & -1 \\ 4 & 0 & 5 \\ 2 & -2 & -3 \end{bmatrix}$.
- Q20. Express the matrix $\begin{bmatrix} 1 & 2 & 0 \\ -3 & 1 & 6 \\ 4 & -2 & 5 \end{bmatrix}$ as the sum of a symmetric and a skew symmetric matrix.
- Q21. Find the values of x,y,z if the matrix $A = \begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ x & -y & z \end{bmatrix}$ satisfies the equation $A' = A^{-1}$.
- Q22. If $A = \begin{bmatrix} 0 & 6 & 7 \\ -6 & 0 & 8 \\ 7 & -8 & 0 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 1 & 1 \\ 1 & 0 & 2 \\ 1 & 2 & 0 \end{bmatrix}$ and $C = \begin{bmatrix} 2 \\ 2 \\ 3 \end{bmatrix}$ then verify that $(A + B)C = AC + BC$.
- Q23. If $A = \begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$, then find $(x + y)$ so that $A^2 - xI + yA = O$. Hence find A^{-1} .

Assignment Worksheet CH-1 Relations and Functions

- Q24. Show that the relation R on the set Z of all integers defined by $(x, y) \in R \Rightarrow (x - y)$ is divisible by 3 is
- Q25. Let N be the set of all natural numbers and let R be a relation on $N \times N$, defined by $(a, b) R (c, d) \Leftrightarrow ad = bc$ for all $(a, b), (c, d) \in N \times N$. Show that R is an equivalence relation. Also, find the equivalence class $[(2, 6)]$.
- Q26. Let N be the set of all natural numbers and let R be a relation on $N \times N$, defined by $(a, b) R (c, d) \Leftrightarrow ad(b + c) = bc(a + d)$ for all $(a, b), (c, d) \in N \times N$. Show that R is an equivalence relation. Also, find the equivalence class $[(2, 6)]$.
- Q27. Let R be the equivalence relation in the set $A = \{0, 1, 2, 3, 4, 5\}$ given by $R = \{(a, b) : 2 \text{ divides } (a - b)\}$. Write the equivalence class $[0]$.
- Q28. Let $A = [-1, 1]$. Then discuss whether the following functions defined on A are one-one onto or bijective.
 (a) $f(x) = \frac{x}{2}$ (b) $g(x) = |x|$ (c) $h(x) = x|x|$ (d) $k(x) = x^2$
- Q29. Let $A = \{1, 2, 3, \dots, 9\}$ and R be the relation in $A \times A$ defined by $(a, b) R (c, d)$ if $a + d = b + c$ for $(a, b), (c, d) \in A \times A$. Prove that R is an equivalence relation and also obtain the equivalence class $[(2, 5)]$ and $[(1, 3)]$.
- Q30. Check whether following functions are one-one onto or not?
- Q31.
- Q32. (i) $f(x) = \frac{x}{x^2 + 1}$, $f: R \rightarrow R$ (ii) $f(x) = \cos x$ (iii) $f(x) = 9x^2 + 6x - 5$, $f: R_+ \rightarrow [-5, \infty)$
- iv) $f(x) = 5x^2 + 6x - 9$, $f: R_+ \rightarrow [-9, \infty)$ (R_+ is the set of all non-negative real numbers)
- v) $f(x) = 4x^2 + 12x + 15$, $f: N \rightarrow S$ where S is the range of S

Show that $f: N \rightarrow N$ given by $f(x) = \begin{cases} x+1, & \text{if } x \text{ is odd} \\ x-1, & \text{if } x \text{ is even} \end{cases}$ is both one-one and onto.

Find the number of all one-one functions from set $A = \{a, b, c\}$ to itself.

Class XII Mathematics :Assignment Worksheet: Ch-4 Determinants

Q1. For a square matrix A, $(3A)^{-1} = ?$

- (a) $3A^{-1}$ (b) $9A^{-1}$ (c) $\frac{1}{3}A^{-1}$ (d) $\frac{1}{9}A^{-1}$

Q2. If $\begin{vmatrix} -1 & -2 & 5 \\ -2 & a & -1 \\ 0 & 4 & 2a \end{vmatrix} = -86$, then the sum of all possible values of a is:

- (a) 4 (b) -4 (c) 5 (d) 9

Q3. If $\Delta_1 = \begin{vmatrix} 1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 3 \end{vmatrix}$ and $\Delta_2 = \begin{vmatrix} 0 & 2 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 6 \end{vmatrix}$, then:

- (a) $\Delta_1 = 2\Delta_2$ (b) $\Delta_2 = -2\Delta_1$ (c) $\Delta_1 = \Delta_2$ (d) $\Delta_2 = -\Delta_1$

Q4. One of the values of x for which $\begin{vmatrix} \cos x & \sin x \\ -\cos x & \sin x \end{vmatrix} = 1$ is:

- (a) 0 (b) $\frac{\pi}{4}$ (c) $\frac{\pi}{3}$ (d) $\frac{\pi}{2}$

Q5. If $A^2 = 4A + 3I$ and $A^{-1} = xA + yI$, then the value of (x + y) is:

- (a) -1 (b) 1 (c) $\frac{5}{3}$ (d) 7

Q6. If $B(\text{adj } B) = \begin{bmatrix} 1/3 & 0 & 0 \\ 0 & 1/3 & 0 \\ 0 & 0 & 1/3 \end{bmatrix}$, then the value of $\det(B^{-1})$ is:

- (a) $1/3$ (b) $1/9$ (c) 3 (d) 9

Q7. If $A(\text{adj } A) = \begin{bmatrix} 2026 & 0 & 0 \\ 0 & 2026 & 0 \\ 0 & 0 & 2026 \end{bmatrix}$, then the value of $|\text{adj } A|$ is equal to :

- (a) 2026 (b) $(2026)^{-1}$ (c) 2026^{-2} (d) 2026^2

Q8. If $A(\text{adj } A) = \begin{bmatrix} 3 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 3 \end{bmatrix}$, then the value of $|2A|$ is:

- (a) 6 (b) 12 (c) 54 (d) 24

Q9. If the points (2,3), (0,4) and (p,2) are collinear, then the value of p is:

- (a) $4/7$ (b) 4 (c) $-3/7$ (d) -4

Q10. If the area of ΔABC with vertices A(3,1), B(-2,1), C(0,k) is 5 units then the value of k are:

- (a) 3, 1 (b) -1, 3 (c) -1, 2 (d) 0, 2

Q11. If A is a non-singular matrix, then which of the following is not true?

- (a) $\text{adj } A$ is singular (b) $(\text{adj } A)^{-1} = (\text{adj } A^{-1})$ (c) $|A| \neq 0$ (d) A^{-1} exists

Q12. Given that $P = \begin{bmatrix} 2 & -1 \\ 3 & 4 \end{bmatrix}$, $Q = \begin{bmatrix} 5 & 2 \\ 7 & 4 \end{bmatrix}$ and $R = \begin{bmatrix} 2 & 5 \\ 3 & 8 \end{bmatrix}$, find a matrix S, such that $PQ - RS = 0$.

Q13. If $A = \begin{bmatrix} 1 & -1 \\ 2 & 1 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 1 \\ 2 & 4 \end{bmatrix}$, $C = \begin{bmatrix} -1 & 2 \\ 1 & -4 \end{bmatrix}$ and $AB - CD = 0$, then find the matrix D.

Q14. If A, B and C are square matrices of order 3 and $|BC| = 2|A|$, then find $|2A^{-1}BC|$.

Q15. If $A = \begin{bmatrix} 2 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 5 \end{bmatrix}^{-1}$, then find matrix A.

Q16. Let A (1,3), B (0,0) and C(k,0). Using determinants, find k when the area of ΔABC is 3 square units.

Q17. If $\begin{bmatrix} 3 & -1 & \sin 3x \\ -7 & 4 & \cos 2x \\ -11 & 7 & 2 \end{bmatrix}$ is a singular matrix, then find all values of x , where $x \in \left[0, \frac{\pi}{2}\right]$

Q18. If $\begin{vmatrix} x & \sin \theta & \cos \theta \\ -\sin \theta & -x & 1 \\ \cos \theta & 1 & x \end{vmatrix} = 8$, then write the value of x , $x \in R$.

Q19. If $f(x) = \begin{vmatrix} a & -1 & 0 \\ ax & a & -1 \\ ax^2 & ax & a \end{vmatrix}$, then find $f'(x)$.

Q20. Find $|3AB|$, If $A = \begin{bmatrix} 2 & 5 \\ 1 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 5 & 3 \\ 4 & 2 \end{bmatrix}$.

Q21. If A, B and C are angles of a triangle, then find the value of $\begin{vmatrix} \sin(A+B+C) & \sin B & \cos C \\ -\sin B & 0 & \tan A \\ \cos(A+B) & -\tan A & 0 \end{vmatrix}$.

Q22. If $A = \begin{bmatrix} 2 & 1 & -1 \\ 3 & 1 & -2 \\ 1 & 0 & -1 \end{bmatrix}$, such that $AB = BA$, then find B , when it is given that B is non-zero matrix.

Q23. If $A = \begin{bmatrix} 5 & 0 & 41 \\ 2 & 3 & 2 \\ 1 & 2 & 1 \end{bmatrix}$ and $B^{-1} = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$, find $(AB)^{-1}$. Also find $|(AB)^{-1}|$.

Q24. A man goes to buy fruits from the market. The shopkeeper informs him that 4 apples, 3 oranges and 2 bananas cost Rs. 60; 2 apples, 4 oranges and 6 bananas cost Rs. 90; whereas 6 apples, 2 oranges and 3 bananas cost Rs. 70. Using matrix method, find the cost of one fruit of each kind. [CBSE 2026]

Q25. On the inauguration day of a new showroom, a lucky draw was organized and some vouchers of Rs. 1,000 and Rs. 500 were given to the lucky draw winners. A total of 60 vouchers were given on the day. The number of Rs. 1000 vouchers added to 3 times the number of Rs. 500 vouchers, gives 100. Express the given information as a system of linear equations in two variable. Hence find the number of vouchers of each type by matrix method. [CBSE 2026]

Q26. A scholarship is a sum of money provided to a student to help him/her pay for education. Some students are granted scholarships based on their academic achievements, while others are rewarded based on their financial needs. Every year a school offers scholarships to girl children and meritorious achievers based on certain criteria. In the session 2022-23, the school offered monthly scholarship of Rs 3,000 each to some girl students and Rs. 4,000 each to meritorious achievers in academics as well as sports. In all, 50 students were given the scholarships and monthly expenditure incurred by the school on scholarships was Rs. 180,000. Based on the above information, answer the following questions.

- Express the given information algebraically using matrices.
- Check whether the system of matrix equations so obtained is consistent or not?
- Find the number of scholarships of each kind given by the school, using matrices.
- If the amount of scholarship given to each girl child and meritorious child is interchanged. What would be the monthly expenditure incurred by the school?

Q27. A carpenter needs to design a wooden box in the shape of a cuboid such that the sum of its length and breadth is 3cm more than its height. Twice of its length, thrice of its breadth and its height add upto 10cm. Its breadth added to 7 times its height is 1cm less than 3 times its length. On the basis of the above information, answer the following questions: [CBSE 2026]

- Write the equations representing the various dimensions and express them as matrix $AX = B$.
- Determine whether A^{-1} exists. Justify your answer.
- Find A^{-1} **OR** Find: $A^2 + 7I$

Q28. If $A = \begin{bmatrix} 1 & 2 & 1 \\ 1 & 0 & 3 \\ 2 & -3 & 0 \end{bmatrix}$, find A^{-1} . Using the above obtained inverse of matrix A , solve the following system of equations: $x + 2y + z = 7$, $x + 3y = 11$, $2x - 3y = 1$.

Q29. If $P = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$ and $Q = \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$, find QP and hence solve the following system of equations using matrices: $x - y = 3; 2x + 3y + 4z = 17; y + 2z = 7$.

Q30. Obtain the value of $\Delta = \begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1+y & 1 \\ 1 & 1 & 1+z \end{vmatrix}$ in terms of x, y and z . Further if $\Delta = 0$ and x, y, z are non-zero real numbers, prove that: $x^{-1} + y^{-1} + z^{-1} = -1$

Q31. Find the product $\begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix} \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$, Hence solve the given system of equations: $x - y = 3, 2x + 3y + 4z = 17, y + 2z = 7$.

ASSIGNMENT CLASS 12TH CHEMISTRY

1. Name the reagents used in the following reactions:

- (i) Bromination of phenol to 2, 4, 6-tribromophenol (ii) Butan-2-one to Butan-2-ol
(iii) Friedel-Crafts alkylation of anisole (iv) Oxidation of primary alcohol to carboxylic acid

2. What is meant by hydroboration-oxidation reaction? Illustrate with an example.

3. Ortho and para-nitrophenols are more acidic than phenol. Draw the resonance structures of the corresponding phenoxide ions.

4. Show how will you synthesise: (i) 1-phenylethanol from a suitable alkene?
(ii) Cyclohexylmethanol using an alkyl halide by S_N2 reaction?

5. (i) Give the equations of reactions for the preparation of phenol and cumene.

(ii) You are given benzene, conc. H_2SO_4 and $NaOH$. Write the equations for the preparation of phenol using these reagents.

(iii) Write the chemical reaction for the preparation of phenol from chlorobenzene.

6. An organic compound 'A' having molecular formula on treatment with aqueous H_2SO_4 gives 'B' which on treatment with $HCN/ZnCl_2$ gives 'C'. compound C on treatment with ethanolic $C_3H_6 KOH$ gives back the compound 'A'. Identify the compounds A, B, C.

7. An aromatic compound 'A' on treatment with $CHCl_3/KOH$ gives two compounds 'B' and 'C', and C give the same product 'D' when distilled with zinc dust. Oxidation of D gives E having mole formula $C_7H_6O_2$ The sodium salt of E on heating with sodalime gives F which may also be obtained by distilling A with zinc dust. Identify A to F.

8. How will you convert phenol to benzoic acid?

9. An organic compound A having molecular formula C_2H_2O gives a characteristic color with aqueous $FeCl_3$ solution. A on treatment with CO , and Na . Off at 400 K under pressure ves in which on acidification gives a compound C. The compound reacts with acetyl chloride to give which is a popular pain killer. Deduce the structure of A, B, C and D.

10. Account for the following:

(i) Phenol does not react with $NaHCO_3$ whereas carboxylic acids react.

(ii) Phenol is more easily nitrated than benzene.

11. A compound 'A' is optically active. On mild oxidation, it gives a compound 'B' but on vigorous oxidation gives another compound 'C'. C along with D is also formed from B by reaction with iodine and alkali. Deduce the structures of A, B, C, D.

12. A compound 'A' having molecular formula $C_4H_{10}O$ is found to be soluble in concentrated sulphuric acid. It does not react with sodium metal or potassium permanganate. On heating with excess of HI , it gives a single alkyl halide. Deduce the structure of compound A and explain all the reactions.

13. How would you obtain

- (a) But-2-enal from ethanal, (b) Benzoic acid from ethylbenzene? (c) Butanoic acid from butanol?

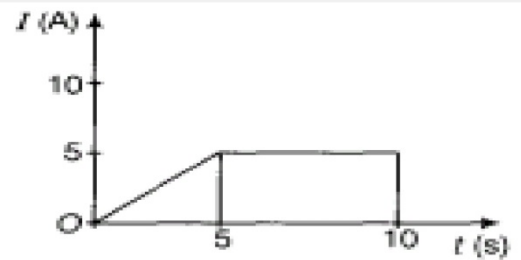
14. Draw structures of the following derivatives:

- (i) The 2, 4-dinitrophenylhydrazone of benzaldehyde
(ii) Acetaldehydedimethylacetal
(iii) The ethylene ketal of hexan-3-one
(iv) Cyclopropanone oxime
(v) The semicarbazone of cyclobutanone
(vi) The methyl hemiacetal of formaldehyde.
15. Predict the product formed when cyclohexanecarbaldehyde reacts with following reagents:
(i) PhMgBr and then H₃O⁺
(ii) Tollens' reagent
(iii) Semicarbazide and weak acid
(iv) Excess ethanol and acid
(v) Zinc amalgam and dilute hydrochloric acid.
16. How will you bring about the following conversions in not more than two steps?
(i) Propanone to Propene
(ii) Ethanol to 3-Hydroxybutanal
(iii) Benzaldehyde to Benzophenone
(iv) Benzoic acid to Benzaldehyde
(v) Benzene to m-Nitroacetophenone
17. Write chemical reactions to affect the following transformations:
(i) Butan-1-ol to butanoic acid
(ii) 3-Nitrobromobenzene to 3-nitrobenzoic acid
(iii) 4-Methylacetophenone to benzene-1, 4-dicarboxylic acid
(iv) Benzyl alcohol to phenylethanoic acid
(v) Cyclohexene to hexane-1, 6-dioic acid
18. Compound 'A' with molecular formula C₈H₈ is treated with aq. KOH solution. The rate of this Transition state reaction depends upon the concentration of the compound 'A' only. When another optically active isomer 'B' of this compound was treated with aq. KOH solution, the rate of reaction was found to be dependent concentration of compound and KOH both.
(i) Write down the structural formula of both compounds 'A' and 'B'.
(ii) Out of these two compounds, which will be converted to the product with inverted configuration?
19. An organic compound X which is manufactured by heating a mixture of chloral and chlorobenzene in the presence of concentrated H₂SO₄ is used as an insecticide. The use of compound X is banned in many countries. The compound is very effective against mosquitoes which spread malaria.
Answer the following questions based on above information:
(i) Name the compound X. Give its structural formula and IUPAC name.
(ii) Why is the use of compound X banned in many countries? Should we also advocate the ban of this compound though it is banned in many countries?
(iii) Which value is reflected in its ban? Should our country follow exactly the same rules and regulations in such matters as those being followed in other countries?
20. (i) Why are alkyl halides insoluble in water?
(ii) Why is butan-1-ol optically inactive but butan-2-ol is optically active?
(iii) Although chlorine is an electron withdrawing group, yet it is ortho, para directing in aromatic substitution reactions. Why?
21. Give reasons for the following:
(i) Ethyl iodide undergoes S_N2 reaction faster than ethyl bromide.
(ii) (±) 2-Butanol is optically inactive.
(iii) C-X bond length in halobenzene is smaller than C-X bond length in CH₃-X.
22. Give reasons for the following:
(i) p-Dichlorobenzene has higher melting point and lower solubility than o- and m-isomers.
(ii) Benzyl chloride undergoes S_N1 reaction faster than cyclohexylmethyl chloride.
23. Explain why
(i) the dipole moment of chlorobenzene is lower than that of cyclohexyl chloride?
(ii) Alkyl halides, though polar, are immiscible with water?

(iii) Grignard reagents should be prepared under wdroous conditions?

Class XII ASSIGNMENT SUBJECT: PHYSICS THEORY(042)

- 1) The sum of two point charges is $7\mu\text{C}$. They repel each other with a force of 1N when kept 30 cm apart in free space. Calculate the value of each charge.
- 2) Five-point charges, each having a charge q are placed on the five corners A, B, C, D and E of a regular hexagon ABCDEF having each side of length a . Find the electric field at the centre of the hexagon.
- 3) An infinite number of charges, each equal to q are placed along X-axis at $x = 1, x = 2, x = 4, x = 8, ..$ and so on.
 - i. Find the electric field at the point $x = 0$ due to this set up of charges.
 - ii. What will be the electric field, if in the above set up, the consecutive charges have opposite signs.
- 4) A current of 1.0 ampere is flowing through a copper wire of length 0.1 metre and cross-section $1.0 \times 10^{-6}\text{m}^2$
 - i) If the specific resistance of copper be $1.7 \times 10^{-8} \Omega\text{m}$
 - ii) Calculate the potential difference across the ends of the wire
 - iii) Determine current density in the wire, iii) If there be one free electron per atom in copper, then determine the drift velocity of electrons. Given: density of copper = $8.9 \times 10^3 \text{ kg/m}^3$, atomic weight = 63.5, $N = 6.02 \times 10^{26}$ per kg-atom.
- 5) Deduce the relation between current I flowing through a conductor and drift velocity v_d of the electrons.
- 6) Figure shows a plot of current I flowing through the cross-section of a wire versus the time t . Use the plot to find the charge flowing in 10 through the wire.
- 7) A charge q is placed inside a sphere of radius ' a ' filled with water and another charge $2q$ is placed inside cube of side ' $2a$ ' which is vacuumed inside. Find the ratio of the flux linked with the sphere to that linked with the cube.
(Take relative permittivity of water as 80)
- 8) (i) The current I_1 in a wire is getting divided in two wires with currents I_2 and I_3 at a junction in a circuit. The currents in the three wires are related by $I_1 = I_2 + I_3$.
 - (A) State the fundamental law from which this relation is derived.
 - (B) Explain the validation of law of conservation of energy in Kirchhoff's voltage law?(ii) How the balancing condition gets affected if you are interchanging the galvanometer and the cell in the Wheat stone bridge?
- 9) (A) A dielectric slab of thickness t , is introduced between the plates of parallel plate capacitor of area A and separation d (where $t < d$). Find an expression for the capacitance with the dielectric slab.
(B) A copper sphere of capacitor C is dropped in ocean. Will the capacitance of the sphere increase, decrease or remain same? Justify.
(C) A capacitor is connected across a source of potential difference V and then the separation ' d ' between the plates is increased using insulating stick. Plot ' V ' vs ' d ' graph for the given capacitor.
- 10) If a charge of $1\mu\text{C}$ is placed at the origin and another charge of $3 \mu\text{C}$ placed at the point $(20\text{m}, 0\text{m}, 0\text{m})$ in an external uniform electric field of 40V/m i with the electric potential at origin to be zero. Find the electrical potential energy of system.



- 11) A capacitor of unknown capacitance is connected across a battery of V volt. A charge of 360 C is stored in it. When the potential across the capacitor is reduced by 120 V , the charge stored in the capacitor becomes 120 C . Calculate V and the unknown capacitance. What would have been the charge on the capacitor if the voltage were increased by 120 V ?
- 12)(a) If two similar large plates, each of area A having surface charge densities $+\sigma$ and $-\sigma$ are separated by a distance d in air, then find the expression for
- the field at points between the two plates and on the outer side of the plates. Specify the direction of the field in each case. σ
 - the potential difference between the plates.
 - the capacitance of the capacitor so formed.
- (b). Two metallic spheres of radii R and $2R$ are charged so that both of these have the same surface charge density. If they are connected to each other with a conducting wire, in which direction will the charge flow and why?
- 13) Derive an expression for electric field E due to a dipole of length ' $2a$ ' at a distant point ' r ' from the centre of the dipole on an axial line.
- Draw a graph of E versus r for $r \gg a$.
 - If this dipole were kept in a uniform external electric field E_0 , diagrammatically represent the position of the dipole in stable and unstable equilibrium and write the expressions for the torque acting on the dipole in both the cases.
- 14) Two batteries of emf's 3V and 6V internal resistances 0.2 ohm and 0.4ohm are connected in parallel. This combination is connected to a 4 ohm resistor. Find:
- the equivalent emf of the combination
 - the equivalent internal resistance of the combination
 - the current drawn from the combination
- 15) Show that $E = \rho j$ leads to Ohm's law. Write a condition in which the Ohm's law is not valid for a material
- 16) Define magnetic moment of a current-carrying coil. Write its SI unit.
- A coil of 60 turns and area $1.5 \times 10^{-3}\text{ m}^2$ carrying 2A current lies in a vertical plane. It experiences a torque of 0.12 Nm when placed in a uniform horizontal magnetic field. The torque acting on the coil changes to 0.05 Nm after the coil is rotated about its diameter by θ , in the magnetic field. Find the magnitude of the magnetic field.
- 17 a) Derive an expression for the torque acting on a rectangular current loop suspended in a uniform magnetic field.
- A charged particle is moving in a circular path with velocity V vector in a uniform magnetic field B vector. It is made to pass through a sheet of lead and as a consequence, it loses one half of its kinetic energy without change in its direction.
 - How will (1) the radius of its path (2) its time period of revolution change?
- 18) Explain the principle and working of moving coil galvanometer
- 19) Derive the Biot Savart law

20) State Ampere circuital law. Derive its applications

CLASS – XII

ASSIGNMENT SUBJECT :BIOLOGY

- Q1. What do the microsporangia develop further into as the anther matures?
- Q2. How is an ovule technically referred to?
- Q3. What are the mitotic divisions in the functional megaspore nucleus called free nuclear divisions?
- Q4. In a flower, the megaspore mother cell of an ovule forms megaspores by mitosis. If one of these megaspores develops into the embryo sac, what will be the ploidy of its (eight) nuclei?
- Q5. Name two freshwater angiosperms that show true hydrophily.
- Q6. What are the advantages of selecting dioecious plants for carrying out artificial hybridization or breeding experiments?
- Q7. Name the hormone that maintains the function of male accessory ducts and glands.
- Q8. In which phase of the menstrual cycle is the corpus luteum formed.
- Q9. Name any two hormones found in the blood of a pregnant female only.
- Q10. What are stem cells in a human embryo?
- Q11. When does oogenesis start in humans? Name three hormones and their sources linked with oogenesis. How do they influence the process of oogenesis? Explain.
- Q12. What is the old name of RCH programmes? When was it initiated in India?
- Q13. Why are spermicidal creams used along with a female barrier like the diaphragms?
- Q14. What term is given to the method of ART in which a sperm is directly injected into the ovum?
- Q15. Name the most dangerous among the venereal diseases.
- Q16. Expand the following.
ICSI, GIFT, ZIFT, IUT, IUI, IVF
- Q17.(a) Explain the barrier methods of birth control.
(b) How is GIFT different from ZIFT?
- Q18. Differentiate between Autogamy, Geitonogamy and Xenogamy.

Differentiate between:

- Primary follicles and Secondary follicle
- Secondary follicle and Tertiary follicle
- Follicular phase and Luteal phase
- Menarche and Menopause
- Morula and Blastocyst,
- Trophoblast and Inner cell mass,

- Spermatogenesis and oogenesis.

**Computer Science
Class XII
Assignment**

Networking

1. **What do you understand by the term network?**
 2. **Mention any two main advantages of using a network of computing devices.**
 3. **Differentiate between circuit switching and packet switching.**
 4. **What is VoIP, and how does it function?**
 5. Mention any two main advantages of using a network of computing devices.
 6. Define the term topology. What are the popular network topologies?
 7. Identify the type of topology from the following:
 - (a) Each node is connected with the help of a single cable.
 - (b) Each node is connected with central switching through independent cables.
 8. What do you mean by a modem ? Why is it used ?
 9. Explain the following devices:
 - (a) Switch
 - (b) Repeater
 - (c) Router
 - (d) Gateway
 - (e) NIC
 10. Write a short note on the following Internet protocols:
 - a) TCP
 - b) IP
 - c) FTP
 - d) DNS
 - e) VoIP
 11. Raj Kamal International School is planning to connect all computers, each spread over distance within 45 m. Suggest an economical cable type having high speed data transfer, which can be used to connect these computers
 12. What is a protocol? Which protocol is used to search information from Internet using an Internet browser?
 13. What is a protocol? Which protocol is used to copy a file from/to a remotely located server?
 14. Compare optical fiber and co-axial transmission media
 15. Neha is the network administrator of her school. She has been assigned the task of designing a network for the school's 3-floor building. Each floor has 25 computers. Answer the following:
 - a) Suggest the most suitable topology.
 - b) Which device should she use to connect the computers on a single floor?
 - c) Which IP addressing method should be used for easy administration?
 - d) How can she ensure data security in this network?
-
1. What will be the output of the following statements?
 - a) `list1 = [12,32,65,26,80,10]`
`list1.sort()` `print(list1)`
 - b) `list1 = [12,32,65,26,80,10]`
`sorted(list1)`
`print(list1)`
 - c) `list1 = [1,2,3,4,5,6,7,8,9,10]`
`list1[::-2]`
`list1[:3] + list1[3:]`
 - d) `list1 = [1,2,3,4,5]`
`list1[len(list1)-1]`
 2. Consider the following list myList. What will be the elements of myList after each of the following operations?

```
myList = [10,20,30,40]
```

```
a) myList.append([50,60])
```

```
b) myList.extend([80,90])
```

3. What will be the output of the following code segment?

```
myList = [1,2,3,4,5,6,7,8,9,10]
```

```
for i in range(0,len(myList)):
```

```
if i%2 == 0:
```

```
print(myList[i])
```

4. What will be the output of the following code segment?

```
a) myList = [1,2,3,4,5,6,7,8,9,10]
```

```
delmyList[3:] print(myList)
```

```
b) myList = [1,2,3,4,5,6,7,8,9,10]
```

```
delmyList[:5]
```

```
print(myList)
```

```
c) myList = [1,2,3,4,5,6,7,8,9,10]
```

```
delmyList[:2]
```

```
print(myList)
```

5. Consider the following dictionary stateCapital:

```
stateCapital = {"Assam": "Guwahati", "Bihar": "Patna", "Maharashtra": "Mumbai", "Rajasthan": "Jaipur"}
```

6 Find the output of the following statements:

```
a) print(stateCapital.get("Bihar"))
```

```
b) print(stateCapital.keys())
```

```
c) print(stateCapital.values())
```

```
d) print(stateCapital.items())
```

```
e) print(len(stateCapital))
```

```
f) print("Maharashtra" in stateCapital)
```

```
g) print(stateCapital.get("Assam"))
```

```
h) delstateCapital["Assam"]
```

```
print(stateCapital)
```

7. What will be the output?

```
1. >>>t1 = (1, 2, 4, 3)
```

```
2. >>>t2 = (1, 2, 3, 4)
```

```
3. >>>t1 < t2
```

```
a) True
```

```
b) False
```

```
c) Error
```

```
d) None
```

8. Which of the following statements create a dictionary?

```
a) d = {}
```

```
b) d = {"john":40, "peter":45}
```

```
c) d = {40:"john", 45:"peter"}
```

```
d) All of the mentioned
```

9. Read the code shown below carefully and pick out the keys?

```
d = {"john":40, "peter":45}
```

```
a) "john", 40, 45, and "peter" b) "john" and "peter"
```

```
c) 40 and 45
```

```
d) d = (40:"john", 45:"peter")
```

10. What will be the output?

```
d = {"john":40, "peter":45}
```

```
"john" in d
```

```
a) True
```

```
b) False
```

```
c) None
```

```
d) Error
```

11. What will be the output?

```
d1 = {"john":40, "peter":45}
```

```
d2 = {"john":466, "peter":45}
```

- d1 == d2
 a) True b) False c) None d) Error
12. What will be the output?
 d1 = {"john":40, "peter":45}
 d2 = {"john":466, "peter":45}
 d1 > d2
 a) True b) False c) Error d) None
 (hint: dictionary does not support relational operator >, <, >=, <=)
13. What is the output?
 d = {"john":40, "peter":45}
 d["john"]
 a) 40 b) 45 c) "john" d) "peter"
14. Suppose d = {"john":40, "peter":45}, to delete the entry for "john" what command do we use
 a) d.delete("john":40) b) d.delete("john")
 c) del d["john"]. d) del d("john":40)
15. Suppose d = {"john":40, "peter":45}. To obtain the number of entries in dictionary which command do we use?
 a) d.size() b) len(d) c) size(d) d) d.len()
16. What will be the output?
 d = {"john":40, "peter":45}
 print(list(d.keys()))
 a) ["john", "peter"]. b) [{"john":40, "peter":45}.
 c) ("john", "peter") d) ("john":40, "peter":45)
17. Suppose d = {"john":40, "peter":45}, what happens when we try to retrieve a value using the expression d["susan"]?
 a) Since "susan" is not a value in the set, Python raises a KeyError exception
 b) It is executed fine and no exception is raised, and it returns None
 c) Since "susan" is not a key in the set, Python raises a KeyError exception
 d) Since "susan" is not a key in the set, Python raises a syntax error
18. Which of these about a dictionary is false?
 a) The values of a dictionary can be accessed using keys
 b) The keys of a dictionary can be accessed using values
 c) Dictionaries aren't ordered
 d) Dictionaries are mutable
19. Which of the following is not a declaration of the dictionary?
 a) {1: 'A', 2: 'B'} b) dict([[1,"A"],[2,"B"]])
 c) {1,"A",2"B"} d) { }
20. What is the output of the following code?
 a={1:"A",2:"B",3:"C"}
 for i,j in a.items():
 print(i,j,end=" ")
 a) 1 A 2 B 3 C b) 1 2 3
 c) A B C d) 1:"A" 2:"B" 3:"C"
21. What is the output of the following piece of code?
 a={1:"A",2:"B",3:"C"}
 print(a.get(1,4))
 a) 1 b) A
 c) 4 d) Invalid syntax for get method
22. What is the output of the following code?
 a={1:"A",2:"B",3:"C"}

```
print(a.get(5,4))
```

- a) Error, invalid syntax b) A
c) 5 d) 4

23. What is the output of the following code?

```
a={1:"A",2:"B",3:"C"}
```

```
b={4:"D",5:"E"}
```

```
a.update(b)
```

```
print(a)
```

- a) {1: 'A', 2: 'B', 3: 'C'}
b) Method update() doesn't exist for dictionaries
c) {1: 'A', 2: 'B', 3: 'C', 4: 'D', 5: 'E'}
d) {4: 'D', 5: 'E'}

24. What is the output of the following code?

```
a={1:"A",2:"B",3:"C"}
```

```
b=a.copy()
```

```
b[2]="D"
```

```
print(a)
```

- a) Error, copy() method doesn't exist for dictionaries
b) {1: 'A', 2: 'B', 3: 'C'}
c) {1: 'A', 2: 'D', 3: 'C'}
d) "None" is printed

25. What is the output of the following code?

```
a={1:"A",2:"B",3:"C"}
```

```
a.clear()
```

```
print(a)
```

- a) None
b) { None:None, None:None, None:None}
c) {1:None, 2:None, 3:None}
d) { }

26. What will be the output?

```
numberGames = { }
```

```
numberGames[(1,2,4)] = 8
```

```
numberGames[(4,2,1)] = 10
```

```
numberGames[(1,2)] = 12
```

```
sum = 0
```

```
for k in numberGames:
```

```
    sum += numberGames[k]
```

```
print (len(numberGames) + sum )
```

- a. 30 b. 24 c. 33 d. 12

27. What will be the output?

```
numberGames = { }
```

```
numberGames[(1,2,4)] = 8
```

```
numberGames[(4,2,1)] = 10
```

```
numberGames[(1,2)] = 12
```

```
sum = 0
```

```
for k in numberGames:
```

```
    sum += numberGames[k]
```

```
    print (len(numberGames) + sum )
```

- a. 11, 20, 30 b. 10, 20 , 24

c. 11, 21, 33

d. 10, 21, 12

28. Which of the following is a Python tuple?

a. [1, 2, 3]

b. (1, 2, 3)

c. {1, 2, 3}

d. {}

29. Suppose t = (1, 2, 4, 3), which of the following is incorrect?

a. print(t[3])

b. t[3] = 45

c. print(max(t))

d. print(len(t))

30. What will be the output?

```
>>>t=(1,2,4,3)
```

```
>>>t[1:-1]
```

a. (1, 2)

b. (1, 2, 4)

c. (2, 4)

d. (2, 4, 3)

31. What will be the output?

```
>>>t = (1, 2)
```

```
>>>2 * t
```

a. (1, 2, 1, 2)

b. [1, 2, 1, 2]

c. (1, 1, 2, 2)

d. [1, 1, 2, 2]

31. Consider the following code and write the answers:

```
def calculate(a, b):
    return a * b
mpy = calculate(x, y) print(mpy)
```

KEYWORD USED TO DEFINE THE FUNCTION	DEF KEYWORD
NAME OF THE FUNCTION	calculate
ACTUAL PARAMETERS / ARGUMENTS	x,y
FORMAL PARAMETERS / PARAMETERS	a,b
IS IT A VOID FUNCTION?	NO
HOW MANY VALUES ARE RETURNED?	only one value in the form of tuple

32. Consider the following code and write the answers:

```
def display(name):
    print("Hello" + name + "How are you?") a = display("Samy")
print(a)
```

NAME OF THE FUNCTION	display
FORMAL PARAMETER	name
ACTUAL PARAMETER	Samy
IS IT A VOID FUNCTION?	YES
WHAT WILL BE THE OUTPUT?	Hello Samy How are you? NONE

33. What is the difference between the following codes? How many values are returned from the

function?

<p style="text-align: center;"><u>Program 1</u></p> <pre>def sum(a, b, c): return a + 2, b - 5, c * 3 S = sum(2, 10, 12) print(S)</pre>	<p style="text-align: center;">OUTPUT (4, 5, 36)</p> <p style="text-align: center;">ONLY ONE VALUE IS OBTAINED IN THE FORM OF TUPLE</p>
<p style="text-align: center;"><u>Program 2</u></p> <pre>def sum(a, b, c): return a + 2, b - 5, c * 3 S1, S2, S3 = sum(2, 10, 12) print(S1, S2, S3)</pre>	<p style="text-align: center;">OUTPUT 4 5 36</p> <p style="text-align: center;">THREE DIFFERENT INDEPENDENT ASSIGNED TO 3 DIFFERENT VARIABLES ARE OBTAINED</p>

34. What will be the output? Explain the execution of the program.

PROGRAM 1	PROGRAM 2	PROGRAM 3	PROGRAM 4
<pre>def abc(): print(a) a = 10 print(a) abc() print(a)</pre>	<pre>def abc(): a = 5 print(a) a= 10 print(a) abc() rint(a)</pre>	<pre>def abc(): global a a= 5 print(a) a = 10 print(a) abc() print(a)</pre>	<pre>defabc(): a = a +5 print(a) a = 10 print(a) abc() print(a)</pre>
<p style="text-align: center;">OUTPUT</p> <p style="text-align: center;">10 10 10</p>	<p style="text-align: center;">OUTPUT</p> <p style="text-align: center;">10 5 10</p>	<p style="text-align: center;">OUTPUT</p> <p style="text-align: center;">10 5 5</p>	<p style="text-align: center;">OUTPUT</p> <p style="text-align: center;">10 SYNTAX ERROR</p>

35. Consider the following function header and identify the correct statement:

```
def abc(a = 1, b = 2, c)
def abc(a = 1, b, c = 3)
def abc(a = 1, b = 2, c = 3)
def abc(a = 1, b, c)
```

36. Find the output of the following code:

```
def call(n1 = 2, n2 = 4):
    n1 = n1 * n2
    n2 += 2
    print(n1, n2)
    call()
call(5, 10)
call(10)
```

WORKSHEET CLASS – XII

PHYSICAL EDUCATION (048)

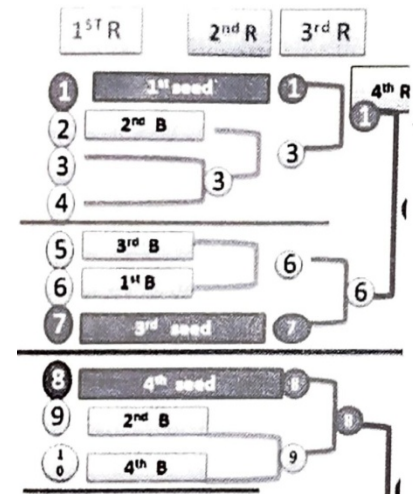
Q.1. With the aim of promoting physical fitness and healthy lifestyle amongst students the Physical education Teacher at XYZ School plans to organize intramural competitions at school. For conducting the event he has given this assignment to the students of class XII who have taken up Physical Education subject so that they can get first had experience of organizing events. On the basis of given information answer the following questions:

- A. The work of committees is divided into _____
- (a) Pre, during and post (b) Pre and post
(c) Pre and during (d) During and Post
- B. Match the following
- (a) Technical committee (i) To provide shifting facility
(b) Finance committee (ii) To resolve dispute
(c) Transport committee (iii) To deals with money and expenditure
(d) First aid committee (iv) To provide medical facility
- (a) a-ii, b-iii, c-i, d-iv (b) a-iii, b-ii, c-i, d-iv
(c) a-ii, b-iii, c-iv, d-I (d) a-iv, b-iii, c-i, d-ii
- C. Which is not the objective of Sports Tournament?
- (a) To Provide Recreation (b) To help in overall development
(c) To achieve high performance (d) To provide opportunity.

Q.2 Below given is the Tournament fixture procedure of a CBSE Football National competition:

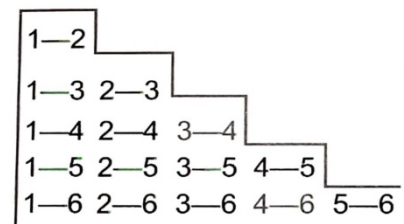
On the basis of the above data, answer the following questions:

- A. What is the number of Non-Seeded Teams in the Tournament?
- (a) 04 (b) 09 (c) 12 (d) 07
- B. The provision which places good teams in separate halves or pools so that they do not play with other good teams at earlier Rounds is known as _____
- (a) Bye (b) League tournament
(c) Seeding method (d) Knock out Tournament
- C. Which of the following is not a Seeded Team?
- (a) Team 10 (b) Team 08
(c) Team 13 (d) Team 07



Q.3 .Below given is the Tournament fixture procedure of a CBSE Volley ball National competition: On the basis of the above data, answer the following questions:

- A. The formula for calculating number of matches in Round Robin tournament are where ‘N’ is number of teams is _____
- (a) $N(N - 1)/2$ (b) N (c) (N - 1) (d) (N + 1)
- B. In League tournaments the winner is decided by
- (a) British method (b) American Method
(c) No of Matches won (d) Both a and b
- C. Which of the following is Not a League Fixture Procedure?
- (a) Ladder method (b) Stair method
(c) Cyclic method (d) Tabular method



Q.4. Competing in physical activities has been the natural tendency of humans. The competitions or tournaments are held according to the set rules and regulations. The success of the tournament depends upon suitable fixture. Observe the below given fixture and answer the questions.

1. The method followed in drawing the fixture is _____

- (a) League (b) knockout
(c) Ladder (d) combination

2. Number of matches played can be calculated by the formula _____

- (a) N (b) N-1
(c) N+1 (d) N+2

3. The advantage of this tournament is _____

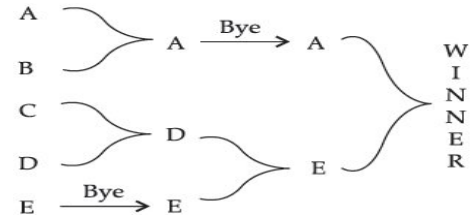
- (a) Economical (b) Less time
(c) both (a) and (b) (d) none of the above

4. In this type of tournament, a team once defeated gets

- (a) eliminated (b) bye (c) another chance (d) wild card entry

5. A privilege given to a team to play at a higher round is called _____

- (a) fixture (b) bye (c) reward (d) All of the above



Q5. ABC School is one of the reputed schools in their location for the number of sports facilities it provides to its stakeholders. Keeping that in consideration CBSE Sports cell has given them the responsibility of conducting CBSE Football cluster. 35 teams have sent their entry for participation in the tournament.

A. Due to large number of teams willing to participate, the school is conducting the competition by _____ fixture.

- a) League b) Knock out c) Staircase d) Challenge

B. The number of Matches in the first round will be _____

- a) 8 b) 12 c) 24 d) 16

D. Total number of matches will be _____

- a) 34 b) 30 c) 28 d) 24

E. Total number of byes in the fixture will be _____

- a) 29 b) 32 c) 27 d) 14

F. Total number of byes in lower half will be _____

- a) 15 b) 16 c) 14 d) 12

Q6. Vikas a state level wrestler has been advised by his coach to take adequate amounts of simple carbohydrates, vitamins, minerals and proteins in his diet along with the training schedule. He has also been advised to follow the diet plan and be aware of the drawbacks of unsupervised dieting.

A. Glucose, Fructose, Lactose are _____

- (a) Simple Carbohydrate (b) Complex Carbohydrate (c) Minerals (d) Fats

B. Which amongst these is a Pitfall of dieting?

- (a) Skipping meal (b) Reducing energy food (c) Drinking lot of water (d) Taking food supplements

C. Amino acids and protein are the _____ of life.

- (a) Building block (b) Training blocks (c) Fitness blocks (d) Both a & b

