ENGLISH

1. Bring twenty quotations which have not been published in Akashganga or Gyanganga mentioning their sources.
2. Collect five inspiring stories of human endurance and grit for contributing to Akashganga.
3. Browse the internet to get the latest efforts and innovations to save the environment in India and abroad, organize a   presentation.
4. Read the novel Invisible Man and Make chapter wise notes of each chapter, using headings, subheadings make abbreviations and use them'.
5. Read an English newspaper daily and cut and paste any five positive and five negative reports in the Holidays Homework Notebook.
6. Watch the following movies and write a critical appreciation of these :-
i) Sound of Music
ii) The Pacifier
iii) Gravity
iv) The Walk
v) Catch Me if You Can
Note : -
1. The question numbers 4, 5 and 6 have to be done in holiday home work note book.
2. The Question numbers1, 2 and 3 have to be submitted in the CD with your admission number, name, class, section and your picture in the school uniform.

PHYSICS

1.   Calculate the charge carried by 12.5×10^8 electrons.   [Ans. 2×10^{-10} C]
2.   How many electrons would have to be removed from a copper penny to leave it with a positive charge of 10^{-7} C?   [Ans. 6.25×10^{11} electrons]
3.   How many mega coulombs of positive (or negative) charge are present in 2.0 mole of neutral hydrogen (H_2) gas.
4.   A free pith-ball A of 8 g carries a positive charge of 5×10^{-8} C. What must be the nature and magnitude of charge that should be given to a second pith-ball B fixed 5 cm below the former ball so that the upper ball is stationary?
5.   Two similarly equally charges identical metal spheres A and B repel each other with a force of 2.0×10^{-5} N. A third identical uncharged sphere C is touched to A, then placed at the mid-point between A and B. Calculate the net electrostatic force on C.   [Ans. 2.0×10^{-5} N, along BC]
6.   Two identical charges, Q each, are kept at a distance r from each other. A third charge q is placed on the line joining the above two charges such that all the three charges are in equilibrium. What is the magnitude, sign and position of the charge q?
7.   Two point charges $+4e$ and $+e$ are 'fixed' a distance 'a' apart. Where should a third point charge q be placed on the line joining the two charges so that it may be in equilibrium? In which case the equilibrium will be stable and in which unstable?
8.   Two 'free' point charges $+4e$ and $+e$ are placed a distance 'a' apart. Where should a third point charge q be placed between them such that the entire system may be in equilibrium? What should be the magnitude and sign of q? What type of a equilibrium will it be?
9.   Two point charges of charge Q and q are placed at distances x and $x/2$ respectively from a third charge of charge value $4q$, all charges being in the same straight line. Calculate the magnitude and nature of charge Q, such that that net force experienced by the charge q is zero.

10. Two small spheres each having mass m kg and charge q coulomb are suspended from a point by insulating threads each 1 metre long but of negligible mass. If θ is the angle, each thread makes with the vertical when equilibrium has been attained, show that
$q^2 = (4\ mgl^2 \sin2\ \theta\tan\ \theta)\ 4\pi\varepsilon_0$

11. Calculate coulomb force between to α-particles separated by a distance of 3.2 x 10^{-15} m in air.
[Ans. 90 N]

12. Calculate the distance between two protons such that the electrical repulsive force between them is equal to the weight of either. [Ans. 1.18 cm]

13. How far apart should the two electrons be, if the force each exerts on the other is equal to the weight of the electron? Given that $e = 1.6$ x 10^{-19} C and $m_e = 9.1$ x 10^{-31} kg. [Ans. 5.08 m]

14. Two identical metallic spheres, having unequal, opposite charges are placed at a distance 0.90 m apart in air. After bringing them in contact with each other, they are again placed at the same distance apart. Now the force of repulsion between them is 0.025 N. Calculate the final charge on each of them.
[Ans. 1.5 x 10- 6 C]

15. The sum of two point charges is 7µC. They repel each other with a force of 1 N when kept 30 cm apart in free space. Calculate the value of each charge. [Ans. 51µC, 2µC]

16. Two point charges $+9e$ and $+e$ are kept at a distance a from each-other. Where should we place a third charge q on the line joining the two charges so that it may be in equilibrium?[Ans: $\frac{3a}{4}$ from $+9e$ charge]

17. Two point electric charges of values q and $2q$ are kept at a distance d apart from each other in air. A third charge Q is to be kept along the same line in such a way that the net force acting on q and $2q$ is zero. Calculate the position of charge Q in terms of q and d.
[Ans. At a distance of $(\sqrt{2} - 1)d$ from charge q]

18. A charge q is placed at the centre of the line joining two equal charges Q. Show that the system of three charges will be in equilibrium if $q = -Q/4$. [Ans. $q = -Q/4$]

19. Calculate the voltage needed to balance an oil drop carrying 10 electrons when located between the plates of a capacitor which are 5 mm apart. The mass of oil drop is 3 x 10^{-16} kg. Take g = 10 ms^{-2}.

20. Two equal charges -10^{-16}C each are kept 20 cm apart in air. Calculate:
(a) Electric field at a point midway between them.
(b) Force acting on a charge of -10^{-16}C kept at point midway between them. [Ans. Zero, Zero]

21. Two point charges 5µC and 10µC are separated by a distance 'r' in air. If an additional charge -4µC is given to each, by what factor does the force between the charges change? [Ans. F' = 0.12 F]

22. Three charges, each equal to q are placed at the three corners of a square of side a. Find the electric field at the fourth corner. $\left[\text{Ans.}\,(2\sqrt{2}\ +\ 1)\,\frac{q}{8\pi\varepsilon_0 a^2}\right]$

Assignment – 2 (Chapter 2 & 3)

1. If 100 J of work has to be done in moving an electric charge of 4C from a place, where potential is -10V to another place, where potential is V volt, find the value of V. [Ans. 15V]

2. Determine the electric potential at the surface of a gold nucleus. The radius is 6.6 x 10^{-15} m and the atomic number Z =79. Given charge on a proton=1.6 x 10^{-19} C. [Ans. 1.7 x 10^7 V]

3. (i) Calculate the potential at a point P due to a charge of 4 x 10^{-7} C located 9 cm away. (ii) Hence obtain the work done in bringing a charge of 2 x 10^{-9} C from infinity to the point P. Does the answer depend on the path along which the charge is brought? [Ans. (i) 4 x 10^4 V (ii) 8 x 10^{-5} J]

4. A metal wire is bent in a circle of radius 10 cm. It is given a charge of 200µC which spreads on it uniformly. Calculate the electric potential at its centre. [Ans. 18 x 10^6 V]

5. Electric field intensity at point 'B' due to a point charge 'Q' kept at point 'A' is 24 NC^{-1} and the electric potential at point 'B' due to same charge is 12 JC^{-1}. Calculate the distance AB and also the magnitude of charge Q.

6. Twenty seven drops of same size are charged at 220 V each. They coalesce to form a bigger drop. Calculate the potential of the bigger drop. [Ans. 1980 V]

7. Two charges 3×10^{-8} C and -2×10^{-8} C are located 15 cm apart. At what point on the line joining the two charges is the electric potential zero? Take the potential at infinity to be zero.

8. Calculate the electric potential at the centre of a square of side $\sqrt{2}$ m, having charges 100μC, -50μC, 20μC, and -60μC at the four corners of the square. [Ans. 9×10^4 V]

9. Calculate the potential at the centre of a square ABCD of each side $\sqrt{2}$ m due to charges 2, -2, -3 and 6μC at four corners of it. [Ans. 2.7×10^4 V]

10. Charges of $+ 1.0 \times 10^{-11}$ C, $- 2.0 \times 10^{-11}$ C, $+ 1.0 \times 10^{-11}$ C are placed respectively at the corners B, C and D of a rectangle ABCD. Determine the potential at the corner A. Given AB = 4cm and BC = 3cm.
[Ans. 1.65 V]

11. Positive charges of 6, 12 and 24 nC are placed at the three vertices of a square. What charge must be placed at the fourth vertex so that total potential at the centre of the square is zero? (Ans. -42 nC)

12. An electric dipole of length 2 cm is placed with its axis making an angle of 60° to a uniform electric field of 10^5 NC^{-1}. If it experiences a torque of $8\sqrt{3}$ Nm, calculate the
(a) magnitude of the charge on the dipole, and
(b) potential energy of the dipole.

13. Two point charges A and B of values $+ 15$μC and $+ 9$μC are kept 18cm apart in air. Calculate the work done when charge B is moved by 3 cm towards A. [Ans. 1.35 J]

14. Two point charges 20×10^{-6} C and -4×10^{-6} C are separated by a distance of 50 cm in air. (i) Find the point on the line joining the charges, where the electric potential is zero. (ii) Also find the electrostatic potential energy of the system. [Ans. (i) 41 cm from the charge of 20×10^{-6} C (ii) -1.44 J]

15. Two charges, of magnitude 5 nC and - 2 nC, are placed at points (2 cm, 0, 0) and (x cm, 0, 0) in a region of space, where there is no other external field. If the electrostatic potential energy of the system is - 0.5μJ, what is the value of x? [Ans. $x = 4$cm]

16. Three point charges $+q$, $+2q$ and Q are placed at the three vertices of an equilateral triangle. Find the value of charge Q (in terms of q), so that electric potential energy of the system is zero.
[Ans. $Q = - 2q/3$]

17. A given copper wire is stretched to reduce its diameter to half its previous value. What would be its new resistance? [Ans. $R' = 16\ R$]

18. A potential difference of 10 V is applied across a conductor of resistance 1 kΩ. Find the number of electrons flowing through the conductor in 5 minutes. [Ans. 1.875×10^{19}]

19. What length of a copper wire of cross-sectional area 0.01 mm^2 would be required to obtain a resistance of 1 kΩ? Resistivity of copper $= 1.7 \times 10^{-8}$ Ωm. [Ans. 588.2 m]

20. Two wires A and B of the same material have their lengths in the ratio 1:5 and diameters in the ratio 3:2. If the resistance of the wire B is 180Ω, find the resistance of the wire A. [Ans. 16Ω]

21. A uniform wire is cut into four segments. Each segment is twice as long as the earlier segment. If the shortest segment has a resistance of 4Ω, find the resistance of the original wire. [Ans. 60Ω]

22. Calculate the conductance and conductivity of a wire of resistance 0.01Ω, area of cross-section 10^{-4}m^2 and length 0.1 m. [Ans. 100 S, 10^5 Sm^{-1}]

23. (a) Estimate the average drift speed of conduction electrons in a copper wire of cross-section area 1.0 x 10^{-7} m^2, carrying a current of 1.5 A. Assume that each copper atom contributes roughly one conduction electron. The density of copper is 9.0×10^3 kg m^{-3}, and its atomic mass is 63.5u. Take Avogadro's number = 6.0×10^{23} mol^{-1}.
(b) Compare the drift speed obtain above with (i) thermal speeds of copper atoms at ordinary temperatures, (ii) speed of electrons carrying the current and (iii) speed of propagation of electric field along the conductor which causes the drift motion.

24. The resistance of a coil used in a platinum-resistance thermometer at 0°C is 3.00Ω and at 100°C is 3.75Ω. Its resistance at an unknown temperature is measured as 3.15Ω. Calculate the unknown temperature. [Ans. 20°C]

25. The temperature coefficient of a resistance wire is 0.0012.5°C^{-1}. At 300 K, its resistance is 1Ω. At what temperature the resistance of the wire will be 2Ω? [Ans. 3.8Ω]

NOTE: Do assignment 1 and 2 in assignment notebook.

Project Work: Make a project report on any topic in physics.
(The report should contain at least 20 pages. Diagrams and pictures wherever required must be there)

CHEMISTRY

1. Prepare investigatory project as per given guidelines:-

INVESTIGATORY TOPIC	INDIVIDUAL PREFERRED TOPIC
GUIDELINES	Name of the Student : Introduction of the project, // Topic // Aim and Objectives // A3 chart papers, stick files consisting A4 size papers, graph sheets(as per the subject)
SUBJECT TASK AND LINKAGES:	Instructions: For the selected investigatory project, students should submit all the collected information in the following format: • Introduction of the selected topic • Objective of the project. • Materials & chemicals required • Theory • Procedure • Observations and calculations • Result • Conclusion • Bibliography • References: - Practical Chemistry- lab manual- XII (Comprehensive). Note-Student should perform the experiment, - Pictures related to each topic is compulsory, - Project should be neatly hand-written in A4 sheets filed up in a stick file and same to be submitted on the day of reopening

1.   Prepare a chart on polymers under the subheadings: name of polymer, type of polymer, monomer unit, structure of monomer unit, uses of polymer.
2.   Prepare a chart on vitamins under the subheadings: vitamin type, chemical name of vitamin, sources of vitamin, disease caused by deficiency of vitamin.
3.   Explain the following terms: (i) Adsorption (ii) Absorption (iii) Brownian movement (iv) Tyndall effect (v) Peptization (vi) Dialysis (vii) Electrodialysis (viii) Ultrafiltration   (viii) Electroosmosis (ix) Promptors (x) catalyst (xi) zeolites (xii) Emulsion
4.   Differentiate between (i) lyophilic colloids and lyophobic colloids
                        (ii) Multimolecular colloids and macromolecular colloids
                        (iii) Homogeneous catalysis and heterogeneous catalysis
(iv) Physisorption and chemisorption
5.   Write mechanism and characteristics of enzyme catalysis.
6.   What is coagulation and state Hardy – Schulze rule? Out of KCl and $FeCl_3$ which one will be used for clotting of blood?
7.   Prepare a chart on comparison basis on different type of cells which include (i) cathode
(ii) Anode (iii) electrolyte (iv) cathode reaction (v) anode reaction (vi) uses.
8.   Define the following terms:
(i) conductance (ii) conductivity (iii) molar conductivity (iv) equivalent conductivity   (v) cell constant.
9.   Explain how rusting of iron an example of electrochemical cell is by giving reactions. Also write the method of prevention of corrosion.

10. Prepare a chart on comparison basis on different type of order of reaction including (i) example (ii) unit of rate constant (iii) differential rate equation (iv) integrated rate equation (v) half-life (vi) graph.

11. Derive an expression for integrated rate equation for zero order and first order reaction.

12. Derive Arrhenius equation for rate constants at two different temperatures.

13. Differentiate between the following

A) (i) Crystalline solids and amorphous solids (ii) Frenkel defect and Schottky defect (iii) Metal excess defect and metal deficiency defect (iv) p- type and n- type semiconductors (v) Tetrahedral and octahedral void

14. Define the following terms : (i) F –centre (ii) Paramagnetism (iii) Diamagnetism (iii) Ferromagnetism (iv)Antiferromagnetism (v) ferrimagnetism (vi) Dopping (vii) Domain

15. Differentiate between (i) ideal and non – ideal solution (ii) positive and negative deviation (iii) Minimum boiling azeotrope and Maximum boiling azeotrope.

16. Define the following terms and write their formulas; (i) molarity (ii) molality (ii) mole fraction (iv) parts per million (v) mass by volume percentage (vi) mass percentage (vii) volume percentage (viii) normality.

17. What are colligative properties? How will you calculate molar mas of solute by using different colligative property

18. Differentiate between : (i) addition and condensation polymer
(ii) Homopolymers and copolymers
(iii) Thermosetting and thermoplastic polymer
(iv) Bakelite and novolac
(v) Buna – N and Buna – S
(vi) LDP AND HDP

19. Explain the following terms: (i) invert sugar (ii) anomers (iii) denaturation of protein (iv) nucleic acid (v) peptide linkage (vi) glycosidic linkage (vii) biocatalyst (viii) amino acid (ix) reducing sugar (x) non reducing sugar .

20. (i) RNA and DNA (ii) amylose and amylopectin (iii) α – helix structure and β – pleated structure (iv) nucleotide and nucleoside (v) cellulose and starch.

BIOLOGY

1. Why is banana considered a good example of parthenocarpy?
2. In angiosperms, zygote is diploid while primary endosperm cell is triploid. Explain.
3. Why is emasculation of a bisexual flower necessary in crop improvement programme?
4. Explain any two ways by which apomictic seeds get developed.
5. Draw a diagram of mature embryo sac of an angiosperm and label the following parts in it: Filliform apparatus, Synergids, Central cell, Egg cell, Polar nuclei, Antipodal cells.
6. Differentiate between perisperm and endosperm giving one example of each.Mention the ploidy of the cells involved.
7. Mention any one application of pollen bank.
8. Differentiate between albuminous and non-albuminous seeds, giving one example of each.
9. What are chasmogamous flowers? Can cross pollination occur in cleistogamous flowers? Give reason.

10. What is self-incompatibility? Why does self pollination not lead to seed formation in self-incompatible species?

11. Describe the process of parturition in humans.

12. Describe the changes that occur in the ovaries and uterus in a human female during menstrual cycle.

13. How is oogenesis markedly different from spermatogenesis with respect to growth till puberty in humans.

14. When and where do chronic villi appear in humans? State their function.

15. Draw a diagram of the structure of a human ovum surrounded by corona radiate. Label the following parts: Ovum, Plasma membrane, ZonaPellucida

16. Why are menstrual cycles absent during pregnancy?

17. Differentiate between 'ZZ' and 'XY' type of sex-determination mechanism.

18. When does a geneticist need to carry out a test cross? How is it carried out?

19. Why did T.H Morgan select Drosophila melanogaster to study sex-linked genes for his lab experiments?

20. Why is colourblindness and thalassemia categorised as Mendalian disorders? Write the symptoms of the diseases seen in people suffering from them.

21. State and explain the law of dominance proposed by Mendel.

22. With the help of one example, explain the phenomenon of co-dominance and multiple allelism in human population.

23. Define aneuploidy. How is it difficult from polyploidy? Describe the individuals having following chromosomal abnormalities:

(a) Trisomy of 21st chromosome

(b) XXY

(c) XO

24. Visit to your nearby Hospital and collect the reports of the patients suffering from genetic disorders and find out the techniques and tests by which the disorders can be diagnosed. Interview the patients and note down the symptoms and treatment by which they are going through.

25. Make an investigatory project and the Powerpoint presentation of 15 slides on the topic specified.

MATHEMATICS

1. If A = $\begin{pmatrix} 3 & -5 \\ -4 & 2 \end{pmatrix}$ Show that $A^2 - 5A - 14I = 0$ and hence find A^{-1}.

2. If A = $\begin{bmatrix} 2 & -1 \\ 3 & 4 \end{bmatrix}$, B = $\begin{bmatrix} 5 & 7 \\ 2 & 4 \end{bmatrix}$, c = $\begin{bmatrix} 2 & 5 \\ 3 & 8 \end{bmatrix}$ Find a matrix D such that CD - AB = 0.

3. If A = $\begin{bmatrix} 3 & -2 \\ 4 & -2 \end{bmatrix}$, find k so that. $A^{-1} = kA - 2I$

4. Find X and Y if. $3X - Y = \begin{bmatrix} 1 & 1 \\ -1 & 1 \end{bmatrix}$ and $X - 3Y = \begin{bmatrix} 0 & -1 \\ 1 & -1 \end{bmatrix}$

5. Find B if $\begin{bmatrix} 2 & 5 \\ -3 & 7 \end{bmatrix} B = \begin{bmatrix} 17 & -1 \\ 47 & -13 \end{bmatrix}$

6. If A = $\begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$, find a and b such that such that $A^2 + aI = bA$, where I is unit matrix of order 2.

7. Express $A = \begin{bmatrix} 6 & 1 \\ 3 & 4 \end{bmatrix}$ as a sum of a symmetric and a skew – symmetric matrix.

8. If $A = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & -3 \\ 2 & -1 & 3 \end{bmatrix}$ find A^{-1} and use it solve the system of equations:

$x+y+2z=0$
$x+2y-z=9$
$x-3y+3z=-14$

9. If $A = \begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & 1 & -1 \\ 1 & 3 & 1 \\ -1 & 1 & 3 \end{bmatrix}$ find the product AB and use this result to solve the following

system of equations:
$2x-y+z=-1$
$-x+2y-z=4$
$x-y+2z=-3$

10. If $A = \begin{pmatrix} 3 & 1 \\ -1 & 2 \end{pmatrix}$, show that $A^2 - 5A + 7I = 0$

11. If $A = \begin{pmatrix} \cos\alpha & \sin\alpha \\ -\sin\alpha & \cos\alpha \end{pmatrix}$, then verify that $A \cdot A' = I$.

12. Without expanding the determinant

(i) show that a+b+c is a factor of the determinant $\begin{vmatrix} a & b & c \\ b & c & a \\ c & a & b \end{vmatrix}$

(ii) prove that $\begin{vmatrix} x+y & x & x \\ 5x+4y & 4x & 2x \\ 10x+8y & 8x & 3x \end{vmatrix} = x^3$

(iii) prove that $\begin{vmatrix} 1/a & a^2 & bc \\ 1/b & b^2 & ca \\ 1/c & c^2 & ab \end{vmatrix} = 0$

(iv) prove that $\begin{vmatrix} b+c & c+a & a+b \\ q+r & r+p & p+q \\ y+z & z+x & x+y \end{vmatrix} = 2\begin{vmatrix} a & b & c \\ p & q & r \\ x & y & z \end{vmatrix}$

13. If $A = \begin{pmatrix} 1 \\ -5 \\ 7 \end{pmatrix}$ and $B = (3, 1-2)$, verify that $(AB)' = B'A'$.

14. Using determinants, find the area of the triangle whose vertices are (-2,4), (2,-6) and (5,4). Are the given points collinear?

15. $A = \begin{pmatrix} 1-3 & 2 \\ 2 & 0 & 2 \end{pmatrix}$ and $B = \begin{pmatrix} 2 & -1 & -1 \\ 0 & 1 & -1 \end{pmatrix}$, find a matrix C such that A + B+C is a zero matrix.

16. Construct a 2 X 3 matrix whose elements in the ith row and jth column are given by

(i) $\dfrac{3i-j}{2}$ (ii) $\dfrac{2i+3j}{2}$ (iii) $\dfrac{(i-2j)^2}{2}$

17. If f(x) = x²-4x+1, find f(A) , when $A = \begin{pmatrix} 2 & 3 \\ 1 & 2 \end{pmatrix}$.

18. Find a matrix X such that 2A+ B+ X = 0, where $A = \begin{pmatrix} -1 & 2 \\ 3 & 4 \end{pmatrix}$, and $B = \begin{pmatrix} 3 & -1 \\ 1 & 5 \end{pmatrix}$.

19. Using properties of determinants, show that:

(i) $\begin{vmatrix} a+x & y & z \\ x & a+y & z \\ x & y & a+z \end{vmatrix} = a^2(a+x+y+z)$

(ii) $\begin{vmatrix} 1 & a & bc \\ 1 & b & ca \\ 1 & c & ab \end{vmatrix} = 0$

(iii) $\begin{vmatrix} x+4 & x & x \\ x & x+4 & x \\ x & x & x+4 \end{vmatrix} = 16(3x+4)$

(iv) $\begin{vmatrix} 1 & x & x^3 \\ 1 & y & y^3 \\ 1 & z & z^3 \end{vmatrix} = (x-y)(y-z)(z-x)(x+y+z)$

v) $\begin{vmatrix} a+b+c & c & -b \\ -c & b+c+a & -a \\ -b & a & c+a+b \end{vmatrix} = 2(a+b)\,(b+c)\,(c+a)$

(vi) Prove that $\begin{vmatrix} 1+a & 1 & 1 \\ 1 & 1+b & 1 \\ 1 & 1 & 1+c \end{vmatrix} = abc\,(a+1/a+1/b+1/c)$

(vii) $\begin{vmatrix} b+c & c+a & a+b \\ c+a & a+b & b+c \\ a+b & b+c & c+a \end{vmatrix} = 2(a+b+c)(ab+bc+ca-a^2-b^2-c^2)$

20. Solve the following system of equations:

i $3x + 4y + 7z = 14$, $2x - y + 3z = 4$, $x + 2y - 3z = 0$

ii. $2x - z = 3$, $5x + y = 7$, $y + 3z = -1$

iii. $x + 2y - 3z = 6$, $3x + 2y - 2z = 3$, $2x - y+ z = 2$.

iv. $x + y + z =1$, $x - 2y + 3z =2$, $x - 3y + 5z =3$

v. $x - y + z =3$, $2x + y - z=2$, $-x - 2y + 2z= -1$.

vi. $x + y + z = 6$, $x + 2y + 3z =14$, $x + 4y + 7z =30$

vii. $x + 2y - 3z = -4$, $2x + 3y + 2z = 2$, $3x - 3y - 4z = 11$

viii. $5x + 3y + z = 16$, $2x + y + 3z = 19$, $x + 2y + 4z = 25$

ix. $2x + 6y =2$, $3x - z= -8$, $2x - y + z + 3= 0$.

x. $2/x + 3/y +10/z = 4$, $4/x – 6/y +5/z = 1$, $6/x + 9/y – 20/z = 2$

22. If $A = \begin{pmatrix} 3 & 2 \\ 1 & 1 \end{pmatrix}$, find the values of a and b such that $A^2 + Aa + b = 0$. hence find A^{-1}.

23. Find value of x, (i) If matrix A is not invertible. $A= \begin{vmatrix} 4 & -3 & 1 \\ -6 & 7 & -4 \\ 1 & -2 & x \end{vmatrix}$

(ii) $\begin{bmatrix} 0 & x+2 & 2-x \\ 1-2x & 0 & 2x-1 \\ 3x-8 & x-8 & 0 \end{bmatrix}$ is a skew symmetric.

24 Make notes of formulae of Trigonometry, Conic Sections, Straight Lines, Permutation and Combinations, Three Dimensional Geometry, Limits and Derivatives on separate sheets.

25 To revise concepts learnt in previous classes and to be used in XII

(i)   Find the image of the point (3,8) with respect to the line $x + 3y = 7$ assuming the line to be plane mirror.

(ii)   Write the equation of line passing through (5,4) and parallel to the line $y = x + 1$.

(iii)   Prove
that $\cos^2 x + \cos^2 (x + \pi/3) + \cos^2 (x - \pi/3) = 3/2$

(iv)   Find the general solution of the equation $\sec^2 2x = 1 - \tan 2x$

(v)   Solve the following system of inequalities graphically:

$3x + 2y < 60$; $y \geq 2x$; $x < 15$; $y > 0$ and $x > 0$

(vi)   Show that $\dfrac{\sin x - \sin 3x}{\sin^2 x - \cos^2 x} = 2 \sin x$

(vii) Find the domain and range of the function $f(x) = [x]$ (Greatest Integer function). Also draw its graph.

(viii) Find the probability that when a hand of 6 cards is drawn from a well shuffled deck of 52 cards, it contains   (i) atleast 3 kings (ii) all kings.

(ix)   Prove
that: $\cos 20^\circ \cos 40^\circ \cos 80^\circ = 1/8$

(x)   Calculate the mean ,variance and standard deviation for the following data:

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	3	7	12	15	8	3	2

(xi)   Suppose $f(x) = \begin{cases} a + bx & ,x < 1 \\ 4 & , x = 1 \\ b - ax & ,x > 1 \end{cases}$ and if $\lim_{x \to 1} f(x) = f(1)$

What are the possible values of a and b?

(xii) Evaluate $\lim_{x \to 1} \dfrac{x^{15}-1}{x^{10}-1}$.

(xiii) Find the derivative of tan x using first principle.

(xiv) Find the derivative of   (i) $\dfrac{x^5 - \cos x}{\sin x}$ (ii) $(2 - 5x) \sin^n x$

ECONOMICS

Introduction and Central Problems of an Economy

QUESTION SET –I

Define the following concepts:

1. Micro Economics
2. Macro Economics
3. Positive Economics
4. Normative Economics
5. Economic Problems
6. Market Economy
7. Centrally Planned Economics
8. Production Possibility Curve
9. Opportunity Cost
10. Marginal Opportunity Cost

QUESTION SET-II

Defend or refute the following statements. Write 'Yes or 'No with reason.

1Increase in labour productivity shifts PPC to right.
2. PPC is also known as transformation curve.
3. An economy always produces on PP curve but not inside it.
4. PPC shifts rightward when economy achieves growth of resources.
5. Slope of PP curve indicates the marginal rate of transformation
6. Only planned economies face the central problems, not the free economies.
7. In a planned economy all central problems are solved by price mechanism.
8. Massive unemployment shifts the PPC to the left.

9. PPC shows attainable combinations of output.
10. PP curve is convex to the origin.
11. Any point below the PP curve shows the inefficient utilization of resources.
12. Marginal rate of transformation goes on increasing.

QUESTION SET-III
Write your comment on each of the following statement.
1. Macro economics is concerned with the determination of total ouput,total employment and general price level.
2. PP curve can shift as well as rotates.
3. Scarcity and choice are inseparable
4. The problems of How to Produce is basically related with the distribution of resources.
5. All positive statements are capable of empirical verification.
6. Indian economy is the mixed economy.
7. PPC slopes downward from left to right because an economy cannot increase the production of one good with production of another good
8.Each point of PPC shows the bundles of two goods that an economy can produce with the optimum use of resources and technology.
9. By increasing our resources we can solve our central problems once for all.
10. Economics is a social science not a natural science.
11. If resources are not efficiently utilized, we are outside the PP curve
12. Choice between consumer goods and capital goods refer to the problem of how to produce.

QUESTIONS SET-IV
1. Draw a PP curve with the help of imaginary data and show the following situations
(i) Fullest utilization of resources
(ii) Under utilization of resources
(iii) Growth of resources
2. Why MRT goes on increasing when we move along the PP curve?
Consumer' Equilibrium
Questions set –I
Define the following Concepts-
1. Consumer's Equilibrium
2. Utility
3. Marginal Utility
4. Cardinal Approach
5. Ordinal Approach
6. Budget line
7. Indifference curve
8. Indifference set
9. Indifference Map
10. Marginal rate of substitution.
QUESTION SET-2
Defend or refute the following statements giving reasons.
1. Indifference curve is diagrammatic presentation of Indifference set.
2. Indifference map refers to a set of indifference curves.
3. Budget line shows non attainable combinations of two goods
3. Indifference curve is based on marginal rate of transformation.
4. Budget line shifts rightward when either the prices of two goods fall or the income of the consumer rises.
5. Total utility starts declining when marginal utility becomes negative.
6. According to the law of DMU, intensity of desire for a commodity goes on falling when more units of it are consumed by the consumer continuously at a given point of time.

7. If IC is convex to the origin MRS should be diminishing.
8. Consumer reaches in the state of equilibrium at that level of consumption at which the marginal utility obtained from the last unit of commodity is exactly equal to marginal utility of money sacrificed.
9. Under ordinal approach, consumer's equilibrium strikes at that point at which the budget line and indifference curve are tangent and IC is convex to the origin.
10. Two IC's can never intersect each other.
11. In an indifference map higher IC shows higher level of satisfaction.
12. Indifference curve slopes downward because a consumer, to remain at the same level of satisfaction, has to sacrifice the consumption of one good if he increases the consumption of another good.
13. MRS along an indifference curve goes on diminishing
14.. All attainable combination of two goods are below the budget line of a consumer
15. in an indifference curve map, higher IC always points to higher level of satisfaction.

QUESTIONS SET-III
Answer the following question in sixty words.
1. What is MRS?
2. Why should MRS diminish?
3. What is the condition of consumer's equilibrium if consumer consumes more than one good with his money income?
4. Explain the determination of consumer'equilibrium under the indifference curve and budget line approach.
5. Why is IC convex to the origin?
7. Under which situation, budget line (i) shifts (ii) rotates.
8. Give any two exceptions of law of diminishing marginal utility.
9. How does a consumer decide as to how much quantity of a commodity he should consume?
10. What is equations of budget line? Explain with the help of an example.
Theory of Demand
QUESTION SET –I
Define the following concepts
1. Demand
2. Quantity Demanded
3. Substitute Goods
4. Complimentary Goods
5. Movement along with demand curve
6. Shifting of demand curve
7. Extention and Contraction of demand
8. Increase and Decrease in demand
9. Normal goods
10. Giffen Goods
11. Income effects
12. Substitution effects
13. Demand function
14. Demand curve

QUESTION SET-II
Defend or refute the following statements giving reasons
1. Demand for a commodity can exists independent of its price.
2. Rise in demand of a commodity due to fall in its price is extention of demand.
3. In case of inferior goods law of demand fails.
4. All inferior goods may not be Giffen goods but all Giffen goods are always inferior goods.
5. In case of substitute goods a fall in price of Good X causes a fall in demand of Good Y
6. In case of complimentary good a rise in price of Good X causes a rise in demand of Good Y.

7. Changes in income causes shift in the demand curve whereas change in price does not.

8. InMovement along with demand curve,demand curve either shift rightwards or leftwards from the original demand curve.

9.In case of normal good price effect is negative but income effect is positive.

10.Law of demand states the positive relationship between the price and demand of the commodity.

11. In case of inferior good law of demand fails.

ACCOUNTS

1. A presents the following Profit and Loss Appropriation Account to his partner B for the year ended 31st December, 2008:

Particulars		(Rs.)	Particulars	(Rs.)
To Salary:			By Profit & Loss A/c	40,200
A	10,000			
B	8,000	18,000		
To Interest on Capital:				
A	10,000			
B	8,000	18,000		
To Interest on A's Loan @ 12% p.a.		1,200		
To Profit transferred to Capital A/c:				
A- 3/4	12,000			
B-1/4	4,000	16,000		
		40,200		40,200

B feels that he is not fairly treated by A. There is no partnership deed. You are required to prepare Profit and Loss Appropriation Account as per the provisions of Partnership Act, 1932.

2. X, Y and Z were partners in a firm having capital of Rs. 1,00,000, Rs. 80,000 and Rs. 60,000 respectively. Their current account balances were: X—Rs. 6,000, Y—Rs. 5,000 and Z—Rs. 2,000 (Dr.). According to partnership deed, the partners were entitled to interest on capital @ 6% p.a. Z was entitled to salary of Rs. 5,000 p.a. while Y was entitled to commission amounting to Rs. 4,000 p.a. The profits were to be divided as follows:

(i) The first Rs. 24,000 in proportion of their capital.

(ii) Remaining profit to be divided equally.

(iii) They drew Rs. 1,000 p.m. each as drawings.

During the year, firm made a profit of Rs. 53,400 before charging any of the above items. Prepare the Profit & Loss Appropriation Account and Capital Accounts of partners.

3. Ram and Shyam are partners sharing profits in the ratio 2: 1 with capitals of Rs. 60,000 and Rs. 40,000 respectively. Interest on capital is agreed @ 6% p.a. Shyam is allowed an annual salary of Rs. 3,000. During 2008, profit of the year prior to calculation of interest on capital but after charging Shyam's salary amounted to Rs. 20,000. Their manager is to be allowed a commission of 10% on the profit remaining after deducting salary and interest on capital but before charging such commission.

Prepare an account showing allocation of profits and partners' capital accounts.

4. Alpha and Beta are partners with a capital Rs. 1,00,000 and Rs. 80,000 respectively. The net profit of the firm for the year ending 31st March, 2009 amounted to Rs. 1,05,625 before considering the following adjustments:

(i) Alpha advanced loan to firm amounting to Rs. 50,000 on 1st October, 2008.

(ii) Interest on capital and interest on drawings is 5% p.a.

(iii) Drawings of Alpha isRs. 20,000 and Beta is Rs. 15,000.

(iv) Alpha was allowed commission @ 3% on conducting sales Rs. 4,00,000.

(v) Beta was allowed commission @ 5% on distributable profit after charging all commission.

(vi) It was also decided to keep 10% of divisible profit to Reserve Fund.

You are required to prepare their Profit and Loss Appropriation Account.

5. A, B and C are partners with fixed capitals of Rs. 1,00,000; Rs. 2,00,000 and Rs. 3,00,000 respectively. Their partnership deed provides that:

a. A is to be allowed a monthly salary of Rs. 600 and B is to be allowed a monthly salary of Rs. 400.

b. C will be allowed a commission of 5% of the net profit after allowing salaries of A and B.

c. Interest is to be allowed on capitals @ 6%.

d. Interest will be charged on partners' annual drawings at 4%.

e. The annual drawings were: B - Rs. 10,000 and C - Rs. 15,000.

f. Interest on C's loan account of Rs. 80,000 for the whole year.

g. 1/10th of the distributable profit should be transferred to General Reserve.

The net profit for the year ending 31st March 2004 amounted to Rs. 1,72,000. Prepare Profit and Loss Appropriation Account.

6. Pooja and Archna are partners in a firm sharing profits and losses in the ratio of 3:2. Their capital accounts as on 1st January 2008 stand at Rs. 1,40,000 and Rs. 60,000 respectively. The partners are allowed interest on capital @ 10% p.a. The drawings of the partners during the year ended 31st December 2008 amounted to Rs. 9,600 and Rs. 7,200 respectively. Interest is charged on drawings at the rate of 10% p.a.

Pooja has given a loan to firm as on 1st August 2008 of Rs. 20,000.

The profit of the firm before above adjustments was Rs. 1,60,000. 10% of distributable profit is to be kept in a Reserve Account.

Current Account balances on 1st January 2008 were: PoojaRs. 5,000 (Cr); ArchnaRs. 23,000 (Dr.).

Prepare Profit and Loss Appropriation Account and Partners' Current Accounts.

7. Compute interest on drawings of Sumit @ 12% p.a. in the following cases for the year ending 2008:

CASE I. He withdrew Rs. 60,000 during the year.

CASE II. If he withdrew Rs. 5,000 p.m. during the year.

CASE III. If he withdrew Rs. 5,000 p.m. for first six months in the beginning of each month and Rs. 5,000 p.m. for next six months at the end of each month.

CASE IV. If he withdrew Rs. 15,000 on quarterly basis at the beginning of each quarter.

8. X, Y and Z are partners in a form sharing profits and losses in the ratio 2: 2: 1. Their capitals were Rs. 80,000, Rs. 80,000 and Rs. 50,000 respectively. They agreed to allow interest on capital @ 10% p.a. and interest on drawing be charged at 10% p.a. Their drawings for the year were Rs. 15,000, Rs. 12,000 and 10,000 respectively.

Z was very active getting a salary of Rs. 5,000 per quarter and guaranteed that firms profit would not be less than Rs. 70,000 before charging or allowing interest and salary payable to Z. Actual, profit for the year 2008 was Rs. 64,000.

Prepare Profit and Loss Appropriation Account.

9. Sanjay and Kapil are equal partners in a firm. They admit Rajat into partnership on the following conditions:

a. That Rajat will be given 1/3rd share of profits.

b. That Sanjay guarantees that Rajat's share of profit shall be Rs. 7,000 after charging interest on loan given by partners to the firm.

Sanjay's loan amounts to Rs. 20,000 and Kapil's loan amounts to Rs. 10,000. The profits for the year ended 31st March 2004 amounted to Rs. 19,800 before charging interest on partner's loan. Prepare Profit and Loss Appropriation Account at the end of the year.

10. X and Y were partners sharing profits in ratio 2:1. Their respective fixed capitals were Rs. 5,00,000 and Rs. 3,00,000. The partnership deed provided the followings:

(i) Interest on Capital @ 6% p.a.

(ii) Interest on Drawings @ 12% p.a.

During the year ended 31st December, 2008, drawings of X were Rs. 1,000 p.m. drawn at the beginning of every month and Y's were Rs. 1,000 p.m. drawn at the middle of every month.

After the preparation of final accounts for the year, it was discovered that interest on capitals and interest on drawings of partners were omitted.

Give the rectifying journal entry.

11. X, Y and Z are partners in a firm sharing profits in the ratio of 3:2:1. They decided that Z's share would be 1/3 in future. For this purpose, goodwill of the firm is valued Rs. 60,000.

Pass necessary journal entry to give effect to the change.

(**Ans.**_New ratio 6:4:5, Sacrifice of X 3/30 and Y 2/30, Z's gain 5/30; Debit Z's Capital A/c Rs. 10,000 and credit X Rs. 6,000 and Y Rs. 4,000_)

12. P, Q and R are partners in a firm sharing profits in the ratio of 4:3:2. They later decided to share in future in 2:2:1. Pass journal entry in the following cases:

(i) Profit & Loss A/c   Rs. 31,500

(ii) Advertisement Expense A/c   Rs. 9,000

Pass necessary adjustment entry.

13. Following is the Balance Sheet of A, B and C as on 1st April, 2008.

Liabilities		Rs.	Assets	Rs.
Creditors		30,000	Fixed Assets	1,40,000
General Reserve		1,20,000	Stock	30,000
			Bank	1,00,000
Capitals:				
A	50,000			
B	40,000			
C	30,000	1,20,000		
		2,70,000		2,70,000

Partners share profits and losses in the ratio of 3:2:1. They decided to share in the ratio of 2:2:1 in future.

They decided to withdraw Rs. 60,000 in their old profit sharing ratio. General Reserve is to appear in the balance sheet at Rs. 60,000.

Prepare partner's capital accounts to give effect to the change and redraft the balance sheet.

14. X and Y were partners in a firm sharing profits in the ratio of 3:2. On 01-04-2009, they admitted Z as a new partner in the firm. The new profit sharing ratio will be 5:5:3. Z contributed following assets towards his capital and for his share of goodwill (premium):

Stock Rs. 30,000; Debtors Rs. 50,000, Land Rs. 80,000 and Plant & Machinery Rs. 90,000. On the date of admission of Z, the goodwill of the firm was valued at Rs. 3,90,000, which is not to appear in the books. Pass necessary journal entries in the books of the firm on Z's admission. Show your calculation clearly.

15. A and B are partners in a firm sharing profits in the ratio $\frac{3}{5}:\frac{2}{5}$. They admit C as a new partner, giving him 1/4 share which he acquires 2/12 share from A and 1/12 share from B. Goodwill share of C is valued Rs. 12,000. Pass entries if:

(i) C is unable to bring his share of goodwill in cash.

(ii) C brings his share of goodwill in cash.

16. A, B and C are partners in a firm who share profits and losses in the ratio of 3:2:2. The total capital of the firm is Rs. 7,00,000 which is maintained in profit sharing ratio. They admitted D as a new partner for 1/5 share which he acquired from A, B and C in 2:2:1. D brings Rs. 2,00,000 as his share of capital. The general reserve shows a balance of Rs. 70,000 as on date of admission. Find the new profit sharing ratio and value of goodwill of the firm. Also pass necessary journal entries on C's admission for the above mentioned transactions.

17. A and B share profits and losses in the ratio 3:2. They admitted C as partner for 1/4 share of profit. He contributed Rs. 3,00,000 as capital and Rs. 2,00,000 for goodwill share. The balance sheet of A and B as on 31st December,2008 was as follows:

Liabilities	Rs.	Assets	Rs.
Creditors	2,40,000	Cash	70,000
Bill Payable	70,000	Stock	4,60,000
General Reserve	1,00,000	Sundry Debtors 2,50,000	
		Less : Provision 20,000	2,30,000
Capital Accounts:		Furniture	1,00,000
A	5,60,000	Plant	1,80,000
B	3,70,000	Building	3,00,000
	13,40,000		13,40,000

The assets and liabilities of the firm were revalued as under:

(a) Stock at Rs. 4,00,000 and Plant at Rs. 1,50,000.

(b) Building was undervalued by Rs. 60,000 and furniture was overvalued by Rs. 20,000.

(c) Provision for Doubtful Debts is to be maintained at 10% of the Debtors.

(d) A liability of Rs. 10,000 included in creditors was not likely to be claimed.

Pass journal entries and prepare Revaluation Account, Partners' Capital Accounts and Balance Sheet of reconstituted firm.

18. X and Y share profits in the ratio of 5:3. Their balance sheet as on 31st Dec. 2009 was as follows:

Liabilities	Rs.	Assets		Rs.
Workmen's Compensation Fund	5,800	Cash at bank		5,000
Creditors	15,000	Debtors	20,000	
Provident Fund	10,000	Less: Provision	600	19,400
X's Capital	70,000	Stock		25,000
Z's Capital	31,000	Fixed Assets		80,000
		Profit & Loss Account		2,400
	1,31,800			1,31,800

They admit Z into partnership with 1/8th share in profits. Z brings Rs. 20,000 as his capital and Rs. 12,000 for goodwill in cash. Z acquires his share entirely from X. Following revaluations are also made:

a. Provident fund is to be increased by Rs. 5,000.

b. Debtors are all good. Therefore no provision is required on debtors.

c. Stock includes Rs. 3,000 for obsolete items. Fixed Assets are to be revalued at Rs. 70,000.

d. Creditors are to be paid Rs. 1,000 more.

e. Accrued income of Rs. 1,500 does not appear in the books and Rs. 2,000 is outstanding for repairs.

Prepare journal entries, necessary accounts and new balance sheet. Also calculate the new profit sharing ratio.

19. Usha and Asha are partners in a firm sharing profit in the ratio of 2:1. Their Balance Sheet on 31st March, 2009 was as follows:

Liabilities		Rs.	Assets		Rs.
Creditors		22,000	Cash		14,000
Bill Payable		5,500	Debtors	48,000	
			Less: Provision	3,000	45,000
General Reserve		18,000			
Capital Accounts:	Rs.		Stock		32,000
Usha	40,000		Patents		9,000
Asha	25,000	65,000	Goodwill		10,500
		1,10,500			1,10,500

Neelam is admitted into partnership giving her 1/5th share in the profit. Neelam is to bring in Rs. 20,000 as her capital and her share of goodwill in cash subject to following terms:

(a) Goodwill of the firm to be valued at Rs. 45,000.

(b) Stock to be reduced by 10% and provision for bad debts be reduced by Rs. 1,000.
(c) Patents are valueless.
(d) A bill for Rs. 800 for expenses due has been omitted to be recorded.
(e) There was a claim against the firm for damages amounted to Rs. 3,000. It was accepted.
Prepare Revaluation Account, Partners' Capital Accounts and the Balance Sheet of new firm.
20. A and B are partners sharing profits and losses in the ratio of 5:3 respectively. Their Balance Sheet as on 31st December, 2009 is as follows:

Liabilities		Rs.	Assets	Rs.
Creditors		29,000	Bank Balance	8,000
Provident Fund		16,000	Sundry Debtors	34,000
Provision for Bad Debts		1,000	Stock	40,000
Workmen's Compensation Fund		10,000	Fixed Assets	1,00,000
Capital:	(Rs.)		Profit & Loss Account	4,000
A	80,000			
B	50,000	1,30,000		
		1,86,000		1,86,000

They agree to admit C into partnership with 1/8th share of profit. C brought Rs. 30,000 as capital and Rs. 16,000 for goodwill in cash. Following terms were agreed upon:
(i) Creditors are to be paid Rs. 1,000 more.
(ii) Debtors are all good.
(iii) Fixed assets are to be revalued at Rs. 1,10,000.
(iv) Provident Fund is to be increased by Rs. 2,000.
(v) Stock will be reduced by Rs. 3,000.
(vi) Claim on account of workmen's compensation is Rs. 4,000.
Prepare Revaluation Account, Partners' Capital Accounts and the Opening Balance Sheet of new firm.

BUSINESS STUDIES

Solve the following problems:
1. In ABC Ltd. the purchase department purchased 15 tonnes of raw material for the production department. However, the production department required only 10 tonnes. Due to this reason, goods were over – produced and were not accepted by sales department. As a result, some goods remained unsold. Which aspect of management is lacking in this case?

2. Pramod Ltd. is a highly reputed company. Different functions are performed by different people in this company, who are bound together in a hierarchy of relationships. Each person in the hierarchy is responsible for successful completion of a particular task. Mr. Gurpreet is responsible for the welfare and survival to the orgainsation. He formulates overall organisational goals and strategies for their achievement. Mr. Rahul ensures that quality of output is maintained, wastage of materials is minimised and safety standards are maintained. Mr. Savinder assigns necessary duties and responsibilities to the personnel and motivates them to achieve desired objectives.
At what levels of management are Mr. Gurpreet Mr. Rahul and Mr. Savinder working in Pramod Ltd.? Justify you answer.
3. The management of Kavita Ltd. strongly believes that the members of an organisation should work towards fulfilling the common organisational goals. This requires team work and integration of efforts of all individuals, departments and specialists. This is because all the individuals and departments depend on each other for information and resources to perform their respective activities. Managers need to reconcile differences in approach, timing, effort or interest. At the same time it should enable all its members to grow and develop. Thus, there is a need to harmonise individual goals and organisational goals.
(a) Which concept of management is highlighted in the above description.
(b) State any three features of the concept identified in (a).

(c)   Identify and explain the characteristic of management which is reflected from from the above description.

4. Sunaina is the branch manager of United Handicraft Pvt. Ltd. The company's objective is to promote the sales of Indian handloom and handicraft products. Its sells fabrics, furnishings, readymade and household items are made out of traditional Indian fabrics. Sunaina decides quantities, variety, colour and texture of all the above items and then allocates resources for their purchase from different suppliers. She appoints a team of designers and crafts people in the company, who developed some prints for bed covers in bright colours of silk. Although they looked very impressive, they where more expensive than they had plan to sell. Average customer could not afford to buy it. Praising their effort, Sunaina suggested that they should keep the silk bed covers for special occasions like Diwali and Christmas and offer the cotton bed covers on a regular basis to keep costs under control.

Identify the functions of management which Sunaina performs by quoting the lines from the above case.

5. Select a business enterprise with which you are familiar. From your recollection of current events (events you may have read about in newspaper or magazines or have heard about on television or radio) identify some of the important environmental force, which have had impact on this enterprise.

6. A company wants to modernize its product. What functions or decisions should be taken by each level to carry on this task?

7. From business magazine, annual reports, newspaper or internet find out what changes are taking place in companies relating to corporate governance, production practices etc. prepare a scrapbook. Prepare a report of the same.

8. Visit a factory. Find about their production system and method of wage payment. Prepare a report.

9. Visit a business organization and study its administration. Prepare a report on Principles of Management and write the comments whether the organization is following the Principles of Management or not.

10. Draw a diagram depicting the divisional structure of your school.

11. The Court passed an order to ban polythene bags as

(i)   The bags are creating many environmental problems which affect the life of people in general.

(ii) Society in general is more concerned about quality of life.

       The Government decided to give subsidy to jute industry to promote this business:

       Innovative   techniques   are   being   developed   to   manufacture   jute   bags   at   low   rates. Incomes are rising and people can afford to buy these bags.

       Identify the different dimensions of Business Environment by quoting the lines from the above particulars.

12. Navya is the marketing manager of a company selling mobile phones. She plans the target sale of 2000 mobile phones per month. She allocates necessary resources to execute the plan. She has six salesmen working under her. She works with them, guiding and motivating them to achieve the target sales. At the end of the month, after comparison of actual sales with the target sales she found that actual sales exceeded the target sales. She rewards the efficient employees to motivate them.

(a)   How does Navya prove the importance of management ?

(b)   Also state any two values which she wants to communicate to the society be her behaviour.

13. Divya, a Class – XII commerce student, just attended her first lecture of business studies wherein she was taught, "all the managers working together in an organization constitute management." She goes through her book and find a point that 'management is an intangible force.

            After considering this point she is of the view that the word 'in' is wrongly included as managers can be seen. So, according to her, management is a tangible force. Do you support her view? Give reason.

 14. The production manager of garment manufacturing asked the foreman to achieve a target production of 100 shirts per day. But he did not give him the authority to requisition tools and materials from the stores

department. Can the production manager blame the foreman if he is not able to achieve the desired target? Explain briefly the principle relating to the situation.

15. A manager should have the right to punish a subordinate for willfully not obeying a legitimate order but only after sufficient opportunity has been given to his or her case. Name the management principle highlighted here.

16. In the marketing department of ABC Electronics Limited, the members of the sales team, get guidance from sales supervisor as under –
     (a)   For prices, discounts, etc. form Supervisor – A
     (b)   For quality of different brands from Supervisor – B
     (c)   For the details of different distributors from Supervisor – C
     On the basis of the above details, mention the name of the principle of management and technique of scientific management which have been followed or violated and how?

17. The purchase manager of XYZ Ltd. gave order to supply raw material @ Rs. 1,200 per quintal to his relative while same quality raw material is available @ Rs. 1,000 per quintal by another supplier. Which principle of management is being violated in the given case?

18. The production manager of Anuj Ltd. instructs a salesman to go slow in selling the product, while the marketing manager is insisting on fast selling to reach the target. Which principle of management is being violated here?

19. Premier Publications a book publishing company, identifies 'CBSE new design of question paper' and an opportunity early and publishers it book as per that changed CBSE pattern much before its competitors. Which environment awareness is being identified by Premier Publications?

20. The government encouraged foreign company to invest in some sectors of retailing. The argument is:
(a) Customer can purchase a product of these companies as their incomes are rising.
(b) It will be increase innovations which will provide new way of reducing goods. This will ultimately improve the quality of life.
Identify the 'Business Environment' under four different dimensions coaching the line from the above description.

COMPUTER SCIENCE

Instructions:
1.   Do this work in ruled notebook (same size as your school notebook minimum 100 pages).
2.   Sequence of the pages should be as follows
i)   First page should contains 'School name', 'Subject name', 'Students name', 'roll no.' , 'class/section'
ii)   Second page contains Table of contents (this page contains chapter/topic name and its page number)
iii)   Further pages contains the Holiday Home Work in sequence as per the Question Nos.
----

1.   What is the significance of classes in OOP ? Write a menu driven program to illustrate the arithmetic operations.

2.   What is constructor? Write a C++ program to add two timesto illustrate default or argumentedconstructor.

3.   Difference between formal parameters and actual parameters. Also give a suitable C++code to illustrate both.

5.   What do you mean by Function Overloading ? Write a program to add numbers of different data types and arguments using function overloading.

6.   Define a class HOTEL IN C++ with the following description:
     Private Members
- Rno   //Data member to store Room No
- Name   //Data member to store customer name

- Tariff   //Data member to store per day charges
- NOD   //Data member to store number of days of stay
- CALC( )   //A function to calculate and return Amount as NOD*Tariff and if
//the value of NOD*Tariff is more than 10000 then as 1.05*NOD*Tariff
    Public Members
- Checkin ( )   //A function to enter the content Rno, Name, Tariff and NOD.
- Checkout( )   //A function to display Rno, Name, Tariff, NOD and Amount (Amount to be
  displayed by calling function CALC())

7.   Define a class RESORT in C++ with following description:
      Private Members
              Rno   //Data member to store Room No
              Name   //Data member to store customer name
              Charges   //Data member to store per day charges
              Days   //Data member to store number of days of stay
              COMPUTE( ) //A function to calculate and return Amout as Days*Charges and if the
                               //value of Days*Charges is more than 11000 then as 1.02*Days*Chages
      Public Members
              Getinfo ( )   //A function to enter the content Rno, Name, Charges and Days
              Dispinfo ( )   //A function to display Rno, Name, Charges, Days and Amount
//(Amount to be displayed by calling function COMPUTE ( ))
8.   Define the class TRAIN with the following members :
      Private:
      Trainno   -   int
      Destination   -   String
      Distance   -   float
      Fuel   -   float
      A member function calfuel() as per the following criteria:

Distance	Fuel
<=1500	250
>1500 &<=3000	1000
>3000	2000

      Public member:
      1. feedinfo() to accept train no, destination, distance and invoke calfuel();
      2. showinfo() to display all the details for a train.

9.   Answer the questions (i) and (ii) after going through the following program:
      class Job
      {   intJobId; char JobType;
            public:
      ~Job ( )   // Function 1
            {   cout<< "Resigned"<<endl; }
      Job ( )   // Function 2

```
            { JobId=10; JobType="T"; }
    Void TellMe( )                        // Function 3
            {       cout<<JobId<< ":"<<JobType<<endl; }
    Job (Job &J)                          // Function 4
            {       JobId=J.JobId+10;
            JobType=J.JobType+1;
            }
    };
```

(i)   Which member function out of Function 1, Function 2, Function 3 and Function 4 shown in the above definition of class Job is called automatically, when the scope of an object gets over ? Is it known as Constructor OR Destructor OR Overloaded Function OR Copy Constructor ?

(ii)   Job P;   //Line 1
        Job Q(P);   //Line 2

Which member function out of Function 1, Function 2, Function 3 and Function 4 shown in the above definition of class Job will be called on execution of statement written as Line 2? What is this function specifically known as out of Destructor or Copy Constructor or Default Constructor ?

10.   Answer the questions (i) to (iv) based on the following:

```
    class Regular
    {       char SchoolCode[10];
    public:
            void InRegular( );
            void OutRegular( );
    };
    class Distance
    {       char StudyCentreCode[5];
    Pblic:
            void inDistance( );
            void outDistance( );
    };
    Class Course:public Regular, private Distance
    {
            char Code[5];
            float Fees;
            int Duration;
    public:
            void InCourse( );
            void OutCourse( );
    };
```

(i)   Which type of Inheritance is shown in the above example ?
(ii)   Write names of all the member function accessible from OutCourse function of class Course.
(iii)   Write name of all the members accessible through an object of class Course.
(iv)   Is the function InRegular( ) accessible inside the function InDistance( )? Justify your answer.

11. Answer the questions (i) and (ii) after going through the following class:
    class Seminar
    {   int Time;
    Public:
            Seminar ( )
            {   Time=30; cout<< "Seminar starts now"<<endl; }
            Void Lecture ( )
            {   cout<< "Lecture in the seminar on"<<endl; }
            Seminar(int Duration)
            {   Time=Duration;cout<< "Seminar starts now"<<endl;   }
            ~ Seminar ( )
            {   cout<<"Vote<< "Vote of thanks"<<endl;   }
    };
(i)   In Object Oriented Programming, what is Function 4 referred as and when does it get invoked/called?
(ii)   In Object Oriented Programming, which concept is illustrated by Function 1 and Function 3 together?
Write an example illustrating the calls for these functions.

12. Answer the questions (i) to (iv) based on the following:
    class FaceToFace
    {   char CenterCode[10];
    public:
            void Input( );
            void Output( );
    };
    class Online
    {   char Website[50];
    public:
            void SiteIn( );
            void SiteOut( );
    };
    class Training: public FaceToFace, private Online
    {   long Tcode;
            float Charge;
            int Period;
    public:
            void Register ( );
            void Show( );
    };
(i)   Which type of Inheritance is shown in the above example?
(ii)   Write names of all the member functions accessible from Show( )function of class Training.
(iii) Write name of all the members accessible through an object of class Training.
(iv)   Is the function Output( ) accessible inside the function SiteOut( )? Justify your answer.

13. Write a function SORTSCORE( ) in C++ to sort an array of structure s Examinee in ascending order of Score using Selection Sort.

Note: Assume the following definition of structure Examinee

        struct Examinee
        {   long RollNo;
                Char Name[20];
                Float Score;

        }

Sample content of the array (before sorting)

RollNo	Name	Score
1001	RavyankKapur	300
1005	Farida Khan	289
1002	Anika Jain	345
1003	George Peter	297

Sample content of the array (after sorting)

RollNo	Name	Score
1005	Farida Khan	289
1003	George Peter	297
1001	RavyankKapur	300
1002	Anika Jain	345

14. An array T[50][20] is stored in the memory along the column with each of the element occupying 4 bytes. Find out the base address and address of element T[30][15], if an element T[25][10] is stored at the memory location 9800.

15. Define a function SWAPARR( ) in C++ to swap (interchange) the first row elements with the last row elements, for a two dimensional integer array passed as the argument of the function.

Example: If the two dimensional array contains and last row:

5	6	3	2
1	2	4	9
2	5	8	1
9	7	5	8

After swapping of the content of first row and last row:

9	7	5	8
1	2	4	9
2	5	8	1
5	6	3	2

16. Find the output of the following program:

```
#include<iostream.h>
Void main( )
{       int X= [ ] {10, 25, 30, 55, 110};
        Int *p = X;
        While ( *p < 110)
        {       if (*p%3 != 0)
                        *p=*p+1;
                else
                        *p = *p+2;
                P++;
        }
        for(int l = 4 ; l>=1; l - - )
        {       cout<< X [ l ]<< "*";
                If ( l%3 == 0 ) cout<<endl;
```

```cpp
        }
        cout<<X [ 0 ] * 3<<endl;
}
```

17.   Find the output of the following program:
```cpp
#include<iostream.h>
Void main ( )
{      int A[ ] = { 10, 15, 20, 25, 30 }
       int *p = A:
       while ( *p < 30 )
       {      if(*p%3!=0)
                      *p = *p + 2 ;
              else
                      *p = *p + 1;
              p++;
       }
for (int J=0; J<=4; J++)
{      cout<<A[J] << "*";
       if(J%3==0) cout<<endl;
}
       cout<<A[4]*3<<endl;
}
```

18.   Study the following program and select the possible output from it:
```cpp
#include<iostream.h>
#include<stdlib.h>
constint LIMIT =  4;
void main ( )
{      randomize ( );
       int Points;
       Points = 100 + random(LIMIT);
       for (int P=Points; P>=100; P - -)
              cout<<P<<"#";
       cout<<endl;
}
```
i)   103#102#101#100#
ii)   100#101#102#103#
iii)   100#101#102#103#104#
iv)   104#103#102#101#100#

19.   Find the output of the following program :
```cpp
#include<iostream.h>
void main()
int Array[ ]={ 4,6,10.12 };
```

```cpp
        int *pointer = Array;
        for(int l=1; i<=3; i++)
        {
                cout<<*pointer<<"#";
                pointer ++;
        }
        cout<<endl;
        for(i=1; i<=4; i++)
        {
                (*pointer)*=3;
                --pointer;
        }
        for(i=1; i<=5; i++)
        {
                cout<<Array[l-1]<<"@";
                cout<<endl;
        }
```

20.   Observe the following program and find out which output(s) out of (a) to (d) will not be expected from program ? What will be the minimum and maximum value assigned to the variables Chance ?

```cpp
        #include<iostream.h>
        #include<stdlib.h>
        void main()
        {
                randomize();
                intArr[]={9,6}; N;
                int Chance = random(2) + 10;
                for( int c=0; c<2; c++ )
                {
                        N=random(2);
                        Cout<<Arr[N];
                }
        }
```

(a)   9#6#   b) 19#17#   c) 19#16#   (d) 20#16#

21.   Make a good quality colored chart (most preferably 3 D charts) on any one of the following topic:
▪   Cloud Computing.
▪   4G Technology
▪   Famous IT Personalities
▪   Latest discoveries in IT Field
▪   Name of few Interesting software and their uses
▪   FOSS (concept, examples and effect)
▪   Robotics
▪   Collage of famous and relevant quotes related to IT, Computer or technology

INFORMATICS PRACTICES

Q1. Finalize topic of your class XII Board Project which should be very unique and innovative. Do complete case study of your selected topic and make data flow diagrams and screen shots on your notebook. Analyze and finalize database (collection of tables) related to your project. Decide about the constraints also which should be implemented on the tables of your chosen project.

Q2. See articles in IT section in newspaper/IT magazines regularly and cut the relevant articles related to IT Field and make a collage on a chart paper.

Q3. Make a good quality colored chart (most preferably 3 D charts) on any one of the following topic:

- Cloud Computing (XII S1)
- 4G Technology (XII S2)
- Famous IT Personalities (XII H2)
- Latest discoveries in IT Field (XII C2)
- Name of few Interesting software and their uses (XII C1)
- FOSS (concept, examples and effect) (XII S6)
- Robotics (XII S3)
- Collage of famous and relevant quotes related to IT, Computer or technology (XII H1)

Q4. Compare OSS, FOSS and Proprietary software with example.

Q5. Explain Primary key, Candidate key and Alternate key with suitable example.

Q6. Compare LAN, WAN, MAN and PAN with suitable example.

Q7. Write any two main advantages and two main disadvantages of Twisted pair, Co-axial and Optical fiber cable.

Q8. Differentiate between entry controlled and exit controlled loop with suitable example.

Q9. Write code to check the following and display suitable message:

a)   Entered number is even or odd

b)   Entered number is positive, negative or zero

Q10. Write code for the following:

a)   To display table of any number entered by the user.

b)   To calculate factorial of any entered number.

c)   To check whether entered number is prime or not

d)   To display the reverse of any entered number.

Q11. Comment on case sensitivity of Java and MySQL.

Q12. Differentiate between the following with suitable example:

a)   Alter Table and Update command

b)   Delete and drop command

Q13 Based on the table named "Employee" having records as shown below, write query:

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800		20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	19-APR-87	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10

7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	23-MAY-87	1100	20	
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300	10	

C) Write the queries for the following questions based on the above table:

1) Display all the records (all the columns).
2) Display EMPNO, ENAME of all the employees.
3) Display ENAME, SAL, SAL added with COMM.
4) Display ENAME joined with job with heading "EMPLOYEE", SAL*12 as "TOTAL SALARY".
5) Display distinct SAL of employees.
6) Show the structure of above table.
7) Display ENAME, SAL of employees whose salary is greater than or equal to 3000 from above table.
8) Display ENAME, SAL, DEPTNO who are not getting commission.
9) Display EMPNO, ENAME, SAL, SAL*12 as "ANNUAL SALARY" whose commission is NOT NULL.
10) Display ENAME, SAL of those employee who don't have their salary in the range of 1500 to 2000.
11) Display ENAME, JOB, SAL, HIREDATE who are hired between February 20, 1981 and May 1, 1981. Order the query in ascending order of the HIREDATE.
12) Display the name of employees whose name contains 'A' as third alphabet.
13) Display the name of employees whose name contains 'M' as first alphabet, 'L' as third alphabet.
14) Display the name of employees who is having 'L' as any of the alphabet of name.
15) Write a query to display the name and hire date of all employees who were hired in 1982.
16) Write a query to display the name, job title and salary of employee who do not have manager.
17) Write a query to display the name of employee whose name contains "T" as the last alphabet.
18) Write a query to display the current system date.
19) Write a query to display employee number, name, salary, salary increases by 15% expressed as a whole number, label the column as new salary.
20) Write a query which displays the employee name with the first letter capitalized and all other letters lower case and length of their name string.
21) Create a query that produces display in the following format:
      <employee name> Earns $ <salary> Monthly and working as <Job>

POLITICAL SCIENCE

READING TASK -
1.Read newspapers especially the Editorial page every day.
 2. Revise chapter 1 –2 (book : Indian politics).
3. Revise chapter 1-2 (book: contemporary world).
4. Collect newspaper cuttings relevant to your syllabus.
5. Read the novel The Alchemist.
DOCUMENTARY REVIEWS-
Write the reviews of the following;
1.   Watch and review the documentary ' Pradhanmantri' (Episode number- 1,2,3,4,5,11,12,13).
2.   Watch and review documentary movies on partition of India and Pakistan.
https://www.youtube.com/watch?v=2s24C-BTa-Q
3.   Watch and review documentary movie on emergency.
https://www.youtube.com/watch?v=WMd6bis74dM&t=122s
4.   Watch and review documentary on the formation of Bangladesh.
https://www.youtube.com/watch?v=7s5sybmma5U
WRITING TASK –
1. What were the challenges before India at the time of independence?
2. Who was PottiSriramulu?

3. What was the SRC? who were its members and when did it come into existence?
4. On the map of India, mark:- 1.Junagadh 2. Manipur 3. Hyderabad 4. Mysore
5. What were the main concerns/ challenges of partition?
6. Name the parent states and year of formation for 1. Nagaland 2.Gujarat 3. Arunachal Pradesh 4. Jharkhand.
7.Read the following passage and answer the questions below:
―In the history of nation-building only the Soviet experiment bears comparison with the Indian. There too, a sense of unity had to be forged between many diverse ethnic groups, religious, linguistic communities and social classes. The scale – geographic as well as demographic was comparably massive. The raw material the state had to work with was equally unpropitious: a people divided by faith and driven by debt and disease: ― RAMACHANDRA GUHA
(a)List the commonalities that the author mentions between India and Soviet Union and give one example for each of these from India.
(b) The author does not talk about dissimilarities between the two
Experiments. Can you mention dissimilarity?
(c) In retrospect which of these two experiment worked better.
(d)What has India in her foreign relations followed from the Soviet Union? How have their relations developed in the last decade?
8.Who founded the BJS? Was it a powerful force in Indian politics?
9. Was Opposition needed in the years after independence?
10. Describe the nature of Party system in India between 1947-67
11. Who was SukumarSen?
12. Who was Shyama Prasad Mukherjee?
13. Did the prevalence of a _one party dominant system‗ affect adversely the democratic nature of Indian politics? Give reasons for your answer.
14. Bring out three differences each between :-
(i) Socialist parties and the Communist party and;
(ii) betweenBharatiya Jana Sangh and Swatantra Party.
15. Which country Inspired India towards the concept of planning?
16. What was the Bombay Plan?
17. State 2 advantages of planning.
18. What is a plan holiday ? When did India go through this phase?
19. What were the key thrust in the first 5 year plan?
20. Write a short note on the 2nd five year plan.
21. Explain the food crisis in Bihar.
22. What were the early initiatives of planning?
23.Point out the two major controversies in planning.
24. Discuss the impact of planning on a country like India.
25. Discuss the significant features of the first plan and the second plan. How were   they different ?

HISTORY

READING AND REVIEWS
1.   Write the review of the novel Meluhha by Amish tripathi in context of harappan civilization.
2.   Collect different types of coins in circulation in India? Prepare a report comparing these coins with the coins of Kushanas and Gupta kings.
3.   Read newspapers regularly and collect the topics related to historical events.
4.   Visit a monument near the city you reside at. Observe the architecture and write a report describing it?
5.   Prepare a report by comparing the household items used by Harappans and the household items you use today.
6.   Prepare a report comparing the city of Harappan civilization and the present city of India. Also trace the similarities between the two.

7.   Search the names of head of archeological survey of India. Write and make a list of the names of director general of ASI from independence to 2018.

MAP WORK:

8.   On the map of India mark 16 mahajanpadas?

9.   Ashokan pillar inscriptions tell us about the boundaries of Mauryan Empire. With the help of map mark the Ashokan rock and pillar inscriptions?

10.   On the given map of world mark the trade relations of Harappans with other countries.

11.   On the map of India mark the following Harappan civilization sites.

a.   Harappa
b.   Mohenjo-Daro
c.   Rakhigarhi
d.   Banawali
e.   Kalibangan
f.   Lothal
g.   Rangpur
h.   Chanhudaro
i.   KotDiji
j.   Sutkagendor

WRITING TASK:

1.   Discuss the town planning of Harappan civilization?

2.   Explain ganas or sangas with an example?

3.   Explain AshokanDhamma policy?

4.   Define the terms patriliny and matriliny. What kind of family is yours? Trace your father's and mother's lineage and write the names of your grandfathers and forefathers.

5.   What was the influence of Buddhism in south East Asia?

6.   Describe the central teachings of Jainism?

7.   What were the rules of marriage in the ancient Indian society? Describe eight forms of marriage given in Manusmriti?

8.   There are different characters in Mahabharata, imagine yourself as one of the character and write Mahabharata from your perspective.

9.   Imagine that you are an author of Mahabharata. Rewrite the story of Ekalavya from your perspective?

10.   Imagine yourself as a person living in 600 BCE. Write a story depicting the forests, environment, palace, kings, rivers etc.

11.   Write the detailed description about the Ashokan pillars.

NOTE: 1) Make a separate fileor notebook for the holiday homework.
         2) The work should be neat and clean.
         3) Paste pictures wherever required.

HOME SCIENCE

 Specific Guidelines :

1.   Kindly adhere to the word limit of the answers while writing the answers to the theoretical questions.

2.   Use A-4 size white or coloured ruled / plane sheets whichever necessary to complete the assignments.

3.   For practical exposure to the subject , kindly visit the desired centres as asked and record the observations according to the survey done.

4.   Try to make the given practical work more interesting and appealing.

5.   Assignments will be marked after submission.

Answer the following questions :

(The questions must be done in an assignment form .)

Q1.Define the following terms :
Adolescence,growth,development,egocentrism,anorexianervosa,menarche

Q2.What do you understand by the terms ' growth spurt' and ' puberty' ? Write any three differences between the physical changes occuring in girls and boys during adolescence ?

Q3. Explain three responsibilities of adults during Young Adulthood and state the ways to cope with them.

Q4. Explain the two eating disorders suffered by adolescents . List any three consequences each of both the eating disorders on the health of adolescents .

Q5. Specify the impact of early and late maturers on adolescent boys and girls .

Q6. What are the other areas where adolescents can experience stress ? Suggest ways to tackle these problems.

Q7. Anger is one emotion that can break relationships. Suggest ways you can take if you want to avoid this to happen.

Q8. Namita is an adolescent girl ,who tries to vomit every time after eating her meals . What do you think is the reason for this ? If she continues to this , what could be it's two possible health hazards ? Suggest to her two ways to come out of this condition . Also mention the role of family in dealing with the problem.

Q9. Adolescence is a period of storm and stress. Elaborate.

Q10.State the advantages and drawbacks of living in an old age home.

Q11.Suggest some activities to a person who is angry which can help him diffuse his anger.

Q12.Write short notes on :
Imaginary Audience, Abstract Thinking, Hypothetical deductive reasoning

Q13.Plan a recovery for adolescents suffering from obesity.

Q14.During adolescence,friends often pressurize each other to get involved in anti-social activities. In what four ways can the adolescents be trained to resist this pressure.

Note : Students can take the help of Home Science book to construct the language of the answers and can also frame the answers on their own by presenting and combining their theoretical knowledge as per the discussion held in class.

VISITS AND SURVEYS :

1.   Spend a day with an aged person either in your own house or in any nearby old age home (Name of NGO's working for senior citizens in India AISCCON, Shree ManavSevaSangh, JeevanAdharSevaSanstha,Silver innings foundation etc.) Observe and record his / her needs and problems . Write a report.

2.   Visit any one place (home/restaurant/school/business centre) and observe its measures for general conditions of hygiene . Prepare a checklist for the same.

3.   Observe the developmental milestones of any of your known , cousin or child (0-2 years) residing in your locality for the course of your summer vacations every alternate day of the week and record them in the form of a table.

PROJECT WORK :

1.   Inspect a food label and evaluate if it has necessary information for the awareness of the consumer before purchase such as nutritional facts, relevant standard mark, MRP, weight, expiry date, guarantee period, ingredients used etc. specified by Bureau of Indian Standards and FSSAI along with the significance of characteristics on a label.

2.   Collect few interesting recipes with the help of internet or magazines or any other medium and jot them along with the ingredients to be used and the procedure.(Recommended dietary allowances of nutrients is given in the Home Science book). Prepare the same at home to value your leisure time.

3.   Prepare the labels of the stated food products bearing the following standardization marks:

a)   FPO – Jams/squashes/fruit products

b)   ISI – Drinking water/salt/electrical appliances

c)   Agmark- Cereals such as corn, rice, wheat etc./Any other agricultural products.

COMMERCIAL ARTS

Draw and colour ten posters with 2 or 4 colours.

PHYSICAL EDUCATION

Select any two games from following

Athletics, Basketball, Football, Volleyball, Hockey, Table Tennis, Judo, Tennis.

Draw a neat diagram of the field/cort

1. Detail the History of game.
2. Explain the Fundamental Skill of the game.
3. Describe the Rules and Regulations of the game.
4. Write down the Sports Personalities of the game.
   a. International Player (3)
   b. National Player (3)
5. Sports Awards.
   a. Arjun Award
   b. Dronarcharya Award
   c. Rajiv Gandhi Khel Ratan award
6. 5 Major injuries of the game.
7. Write benefits of the Asanas along with figure,
8. Learrn chapter – 1 and 2.