MONTH:: MAY

GENRE:: CONFESSIONAL POETRY
POEM:: MY MOTHER AT SIXTY SIX – BY KAMALA DAS

1. Read the extract given below and answer the questions that follow. (4M)
I looked again at her wan, pale as a late winter's moon and felt that old familiar ache, my childhood's fear but all I said was, see you soon, Amma, all I did was smile, smile, smile...

i. The parting words of the poet, "see you soon, Amma" suggest   .
(a) Passion   (b) Ache   (c) Happiness   (d) Jealous

ii."...all that the poet did was smile and smile and smile..." Her smile is:
(a) Sudden, in responses to her mother's   (b) Meaningful and loaded with love
(c) Accompanied with tears of farewell   (d) Put on to cheer her mother

iii. Why has the mother been compared to the late winter's moon?
(a) To refer to her pale and wan appearance (b) To emphasize that the mother is inching close to death
(c) To emphasize the mother is old at the age of 66   (d) None of these

iv. What is the poetic device used in the line – "all I did was smile, smile, smile..."?
(a) Simile   (b) Metaphor   (c) Repetition   (d) Personification

2. Read the extract given below and answer the questions that follow. (4M)
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…

i. The poem "My Mother at Sixty-six" is written in a lyrical idiom. It means
(a) It captures complex subtleties of human relationships.
(b) It highlights the universal bond between mother and daughter.
(c) It expresses emotions in an imaginative and artistic style.
(d) It captures the fear of losing someone near and dear.

ii. Explain "her face ashen like that of a corpse..."
(a) The ash colour of the face   (b) The pale face of the mother
(c) The lost beauty of the mother   (d) None of these

iii. The literary device used in the line 'her face ashen like that of a corpse' is:
(a) Personification   (b) Simile   (c) Imagery   (d) Metaphor

iv. The mother beside the poet was:
(a) Eating food   (b) Looking outside the young trees and merry children
(c) Sleeping   (d) Enjoying ride

3. Read the extract given below and answer the questions that follow. (4M)

...and realised with pain put that thought away, and looked out at Young Trees sprinting, the merry children spilling out of their homes, but after the airport's security check, standing a few yards away,

i. Why does the poet use the image of 'merry children spilling out of their homes'?

(a) Because she likes to see kids play outdoors   (b) To put away the thought of losing her mother

(c) Because she remembers her own carefree childhood (d) Because her mother liked when she used to play in the courtyard

ii. What is the kind of pain and ache that the poet feels?

(a) Growing old age of her mother   (b) Corpse-like ashen face of her mother

(c) Realisation that the mother may not live long   (d) None of these

iii. Why are the young trees described as 'sprinting'?

(a) On looking out from a moving vehicle, stationary objects seeing to be moving in the opposite direction

(b) The poet compared the trees to young children, with boundless energy running past her window

(c) The trees outside the car window rushed past her as the poet drove ahead, signifying distraction of her mind from the painful sight of her mother's ashen like face.

(d) None of these

iv. Identify the figure of speech used in the phrase 'young trees sprinting'.

(a) Repetition (b) Metaphor   (c) Personification   (d) Simile

MCQ(s) - 1 mark each

1. Name the literary device used in the line 'her face ashen like that of a corpse.

(a) Metaphor   (b) Simile   (c) Alliteration   (d) Personification

2. From where were the children spilling out?

(a)Home   (b) School   (c) Neighbourhood   (d) Car

3. What does the narrative single sentence style of the poem highlight?

(a) Poet's fearful mind   (b) Poet's insecurity and fears

(c) Poet's thoughts   (d) Conscience where one thought is leading to another

4. Where was the mother sitting?

(a) In front of the poet (b) Beside the poet   (c) Behind the poet   (d) Beside the driver

5. How is the imagery of "young trees and merry children" a contrast to the mother?

(a) Hope is a way of life (b) Spring and autumn (c) Mother–ageing; trees & children–youthfulness (d) None of these

6. What was the poet's childhood fear?

(a) Flying in a plane   (b) Unable to join merry children

(c) Separation from her mother   (d) Driving in a car

7. What thought did the poet try to put away?

(a) Mother would not live for too long   (b) Mother would continue sleeping

(c) Mother would wake up   (d) None of these

8. Why does the poet look out of the window?

(a) To look out at the trees

(b) To distract herself from the painful thought of losing her mother

(c) To look at the children

(d) As she was bored

9. How does the poet distract herself from her unpleasant thoughts?

(a) Looks out of the car window   (b) Looks at her mother's face
(c) Looks at the driver's face   (d) Closes her eyes

10. Why has the mother's face been compared like that of a corpse?

(a) She is alert (b) She is active   (c) She is merry   (d) She is passive

11. What does the image of "merry children spilling out" symbolize?

(a) Sincerity   (b) Responsibility and duty   (c) Carefree attitude   (d) Passive acceptance

VERY SHORT QUESTION ANSWERS (2M)

1. Explain "wan, pale as a late winter's moon".
2. What 'familiar ache' did the poet feel?
3. Why has the poet brought in the image of the merry children 'spilling out of their homes'?
4. Why has the mother been compared to the "late winter's moon"?
5. What do the parting words of the poet and her smile signify?

SHORT ANSWER QUESTIONS (3M)

1. How does the poet describe the old age of her mother?
2. How does Kamala Das try to put away the thoughts of her ageing mother?
3. What was the poet's childhood fear?
4. What were Kamala Das, fears as a child?
5. Why do they surface when she is going to the airport?
6. What do the parting words of Kamala Das and her smile signify?
7. Why has the poet's mother been compared to the "late winter's moon"?
8. Why are the young trees described as 'sprinting'?

LONG ANSWER QUESTIONS (5M)

1. Bring out the poetic devices used in the poem.
2. Analyse the concept of losing our dear ones on account of old age in the context of the poem.
3. In today's fast life, children neglect their ageing parents. What do you think children can do to have an involved and inclusive relationship with their elderly parents?

FILL UPS (Brainstorming)

1. The poet was travelling to the airport at……………………… .
2. The mother's face looked ashen like that of a……………………. .
3. The poet looked out at young trees sprinting and…………………..
4. The poet's parting words were……………………. .
5. The mother's face was wan, pale as a………………….
6. The poetic device used in the line' wan, pale as a late winter's moon' is……………….. .
7. The trees and merry children in the poem signify…………………. .
8. The central idea of the poem 'My Mother at Sixty-six' is………………………. .
9. In order to distract herself from the painful thoughts the poet looked out of ……………………...
10. The trees were sprinting and merry children………………………………… .
11. The poet smiles and smiles in the end to hide…………………………… .
12. The mother's old age in the poem makes the poet…………………………..
13. The parting words of the poet and her smile show that…………………. .
14. The thought that she will not see her mother again makes her…………………..
15. In order to show her dullness and ill health the mother is compared to……………………

PHYSICS ASSIGNMENT

ONE MARK QUESTIONS

1. Define dipole moment of an electric dipole. Is it a scalar or a vector?
2. Charge q is placed at the centre of a cube. Find the flux passing through the two opposite faces of the cube.
3. Potential on the surface of a thin charge spherical shell is 10V.Find the potential at the centre of the shell.
4. In which orientation a dipole placed in a uniform electric field is in a) Stable, b) Unstable Equilibrium?
5. What is the electric potential due to electric dipole at an equatorial point?
6. What is the shape of equipotential surface due to a single isolated charge?
7. Name a physical quantity whose SI unit is J/C. Is it a scalar or a vector quantity?
8. A hollow metal sphere of radius 5 cm is charged such that the potential on its surface is 10V. What is the potential at the centre of the sphere?

TWO MARKS QUESTION

1. What is the work done to move a test charge q through a distance of 1 cm along the equatorial axis of dipole?
2. A 500μC charge is at the centre of square of side 10cm. Find work done in moving a charge of 10 μC between two diagonally opposite points on the square.
3. Can two equipotential surfaces intersect each other? Give reasons.
4. The given graph shows the variation of charge, q versus potential difference V for capacitors C1 and C2 . The two capacitors have same plate area of C2 is double than that C1. Which of the lines in the graph correspond to C1 and C2 and why?
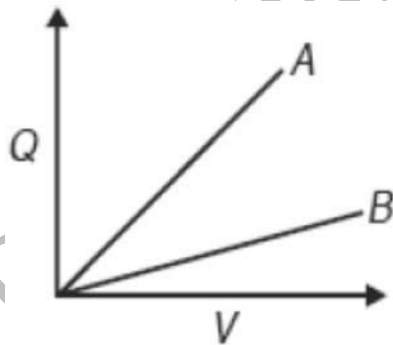
5. Depict the equipotential surfaces for a system of two identical positive point charges placed at a distance'd' apart.
6. Draw the equipotential surfaces for q>0.Are they equidistance, if not write the reason.
7. A capacitor of 4μf is charged by 200V.It is then disconnected from supply and is connected to another uncharged capacitor of 2μf.How much electrostatic energy of the first capacitor is lost in the form of heat and electromagnetic radiation?
8. If there is an arc of radius R makes an angle α at its centre having the linear charge density λ. Find the potential at the centre of arc.
9. There is an oil drop of radius R in equilibrium between the two plates of the capacitor which are having surface charge densities +σ and –σ respectively and at distance d apart. Density of oil is ρ. Find an

expression for excess number of electrons in oil drop.

10. A capacitor is charged and then it is disconnected from the source and then distance between its two plates is increased to twice and then a dielectric of constant K is filled between the plates. Find the change in energy stored in the capacitor.

11. Find the frequency of oscillations of a dipole of dipole moment p and having rotational inertia I, in a uniform electric field E.

(3 MARKS & 5 MARKS QUESTIONS)

1. Derive expression for electric field at a point on the axial line of the dipole. Give the direction of electric field at the point.

2. Derive expression for electric field at a point on the equatorial line of dipole.

3. An electric dipole is held in uniform electric field

   (i) Show that no net force acts on it.

   (ii) Derive an expression for the torque acting on it

4. State Gauss Theorem. A thin charged wire of infinite length has line charge density 'λ'. Derive expression for electric field at a distance 'r'.

5. Charge q is distributed uniformly on a spherical shell of radius R. Using gauss law derive expression of electric field at a distance r from the centre when (i)r>R (ii) r=R (iii) r<R

6. Derive expression for capacitance of parallel plate capacitor.

7. Derive expression for capacitance of parallel plate capacitor with dielectric as medium between the plates.

8. Derive expression for energy stored in a capacitor.

VALUE BASED QUESTIONS (ELECTROSTATICS)

1. Mr. Bose was driving on a highway along fields. When a drizzle starts with lightning and thunder storm. He spots a few farmers walking with iron spoke top umbrellas to avoid getting wet. He stops his car and instructs his co passengers to keep sitting inside the car. He advises the farmers not to use the umbrella till the lightning subsides.

A. What are the two human qualities which Mr. Bose exhibited? Ans.: caring attitude, scientific temper, presence of mind.

B. Why did he advise the farmers not to use the type of umbrella they were using?

        C. Why did he advise his co passengers to set inside the car and not to venture out?

CLASS XII (MATHEMATICS)

Q.1   If A= $\begin{bmatrix} i & 0 \\ 0 & i \end{bmatrix}$, *write* A^2.

Q.2   If A=diag(1,-1,2) and B =diag(2,3,-1), find A+B, 3A+4B.

Q.3   If A is square matrix such that A^2=A. Show that $(I+A)^3$=7A+I

Q.4   If A is a square matrix such that A^2=I then find the value of $(A-I)^3$+$(A+I)^3$-7A

Q.5   Write a 3X3 skew symmetric matrix.

Q.6   Write the element a_{12} of the matrix A=$\left[a_{ij}\right]_{2\times2}$, whose elements a_{ij} are given by $a_{ij}=e^{2ix}\sin jx$

Q.7   Construct a 2X3matrix A, 3X2matrix B , whose elements are given by $a_{ij}=\frac{(i-2j)^2}{2}$.

Q.8   If A= $\begin{bmatrix} 2 & 2 \\ -3 & 1 \\ 4 & 0 \end{bmatrix}$ B $= \begin{bmatrix} 6 & 2 \\ 1 & 3 \\ 0 & 4 \end{bmatrix}$, find the matrix C such that A+B+C is a zero matrix.

Q.9   Find a matrix X such that 2A+B+X=0, where A= $\begin{bmatrix} -1 & 2 \\ 3 & 4 \end{bmatrix}$ B= $\begin{bmatrix} 3 & -2 \\ 1 & 5 \end{bmatrix}$

Q.10   Find the matrix C , such that $A+B + C$ is a zero matrix, where A= $\begin{bmatrix} 2 & 0 & 1 \\ 3 & -1 & 0 \end{bmatrix}$

      B= $\begin{bmatrix} 2 & 1 & -1 \\ 0 & 2 & 1 \end{bmatrix}$.

Q.11   Find the Matrix X ,If 2A+3X= 5B, where A= $\begin{bmatrix} 2 & -2 \\ 4 & 2 \\ -5 & 1 \end{bmatrix}$, B= $\begin{bmatrix} 8 & 0 \\ 4 & -2 \\ 3 & 6 \end{bmatrix}$

Q.12   Find non-zero values x satisfying the matrix equation:

$$x\begin{bmatrix} 2x & 2 \\ 3 & x \end{bmatrix} + 2\begin{bmatrix} 8 & 5x \\ 4 & 4x \end{bmatrix} = 2\begin{bmatrix} x^2 + 8 & 24 \\ 10 & 6x \end{bmatrix}$$

Q.13   If $\begin{bmatrix} \cos 3x & \sin 3y \\ \sin 3y & \cos 3x \end{bmatrix}$ is an identity matrix, find the value of x and y.

Q.14   Simplify $\tan x \begin{bmatrix} \sec x & \tan x \\ \tan x & -\sec x \end{bmatrix} + \sec x \begin{bmatrix} -\tan x & -\sec x \\ -\sec x & \tan x \end{bmatrix}$

Q.15   If A= $\begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$, $find\ x\ and\ y\ such\ that$ A²+xI=yA.

Q.16   From the following equation, find the values of x and y :

$$\begin{bmatrix} x + 10 & y^2 + 2y \\ 0 & -4 \end{bmatrix} = \begin{bmatrix} 3x + 4 & 3 \\ 0 & y^2 - 5y \end{bmatrix}$$

Q.16   If A= $\begin{bmatrix} 0 & -x \\ x & 0 \end{bmatrix}, B = \begin{bmatrix} 0 & 1 \\ 0 & 1 \end{bmatrix}$ and $x^2 = -1\ then\ show\ that\ (A + B)^2 = A^2 + B^2$.

Q.17   Find the values of a and b for which the following holds $\begin{bmatrix} a & b \\ -a & 2b \end{bmatrix} \begin{bmatrix} 2 \\ -1 \end{bmatrix} = \begin{bmatrix} 5 \\ 4 \end{bmatrix}$

Q.18   Find the value of x for which the matrix product

$$\begin{bmatrix} 2 & 0 & 7 \\ 0 & 1 & 0 \\ 1 & -2 & 1 \end{bmatrix}\begin{bmatrix} -X & 14X & 7X \\ 0 & 1 & 0 \\ X & -4X & -2X \end{bmatrix}\ equal\ an\ identity\ matrix.$$

Q.19   On using elementary row operation R₁→R₁-3R₂ in the following matrix equation $\begin{bmatrix} 4 & 2 \\ 3 & 3 \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ 0 & 3 \end{bmatrix}\begin{bmatrix} 2 & 0 \\ 1 & 1 \end{bmatrix}$

Q.20   If $[2x\ \ 3] \begin{bmatrix} 1 & 2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} x \\ 8 \end{bmatrix} = 0, find\ the\ value\ of\ x.$

Q.21   If A= $\begin{bmatrix} \cos x & \sin x \\ -\sin x & \cos x \end{bmatrix}$ and Show that $A^{-1} = A'$.

Q.22   If A= $\begin{bmatrix} \cos x & \sin x \\ -\sin x & \cos x \end{bmatrix}, then\ show\ that\ A^2 = \begin{bmatrix} \cos 2x & \sin 2x \\ -\sin 2x & \cos 2x \end{bmatrix}.$

Q.23   For what value of x, is the matrix A = $\begin{bmatrix} 0 & 1 & -2 \\ -1 & 0 & 3 \\ x & -3 & 0 \end{bmatrix}$ a skew symmetric matrix.

Q.24   Matrix A= $\begin{bmatrix} 0 & 2b & -2 \\ 3 & 1 & 3 \\ 3a & 3 & -1 \end{bmatrix}$ is given to be symmetric, find the values of a and b.

Q.25   If the matrix $\begin{bmatrix} -5 & x - y & 6 \\ 2 & 0 & 4 \\ x + y & 2 & 1 \end{bmatrix}$ is symmetric, find 3x+y-5

Q.26   Show that A'A and AA' are both symmetric matrices for any matrix A.

Q.27   Show that all the diagonals elements of the skew symmetric matrix are zero.

Q.28   If A is skew- symmetric matrix, then A² is a symmetric matrix.

Q.29 If each of the three matrices of the same order are symmetric, then prove that their sum is also a symmetric matrix.

Q.30 If A and B are symmetric matrices, show that AB is symmetric, if AB=BA.

Q.31 A matrix which is both symmetric as well as skew symmetric is a null matrix.

Q.32 If $A=\begin{bmatrix} 1 & 2 \\ 1 & 2 \end{bmatrix}$, $f(x)=x^2-2x-3I$, Find $f(A)$

Q.33 Show that $\begin{bmatrix} 2 & -1 & 3 \\ -5 & 3 & 1 \\ -3 & 2 & 3 \end{bmatrix}$ is the inverse of the matrix $\begin{bmatrix} -7 & -9 & 10 \\ -12 & -15 & 17 \\ 1 & 1 & -1 \end{bmatrix}$

Q.34 If $A=\begin{bmatrix} 3 & -5 \\ -4 & 2 \end{bmatrix}$, then find $A^2 - 5A - 14I$. Hence obtain A^3.

Q.35 Let $A=\begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$ then show that $A^2-4A+7I = 0$. using this result Calculate A^5 also.

Q.36 If $A=\begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$, find x and y such that $A^2+xI=yA$. Hence find A^{-1}.

Q.37 If $A=\begin{bmatrix} 0 & 2 \\ 0 & 0 \end{bmatrix}$ and $f(x) = I+x+x^2+x^4+x^8+x^{16}$, find $f(A)$.

Q.38 If $A=\begin{bmatrix} 0 & 1 \\ -1 & 1 \end{bmatrix}$, find the values of p and q such that $(pI + qA)^2=A$.

Q.39 If $A=\begin{bmatrix} 1 & -1 & 1 \\ 2 & -1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$, show that $A^{-1}=A^2$.

Q.40 Find x , y and z if $A=\begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ x & -y & z \end{bmatrix}$ satisfies $A^T=A^{-1}$.

Q.41 If $A=\begin{bmatrix} 3 & -4 \\ -1 & 2 \end{bmatrix}$, find a matrix B such that $AB = I$

Q.42 Show that $X=\begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$ is a root of the equation $x^3-4x^2+x=0$

BIOLOGY ASSIGNMENT

VERY SHORT ANSWER TYPE QUESTIONS
1. Mention two inherent characteristics of Amoeba and yeast that enable them to reproduce asexually.
2. Why do we refer to offspring formed by asexual method of reproduction as clones?
3. Although potato tuber is an underground part, it is considered as a stem. Give two reasons.
4. Between an annual and a perennial plant, which one has a shorter juvenile phase? Give one reason.
5. Rearrange the following events of sexual reproduction in the sequence in which they occur in a flowering plant: embryogenesis, fertilisation, gametogenesis, pollination.
6. The probability of fruit set in a self-pollinated bisexual flower of a plant is far greater than a dioecious plant. Explain.
7. Is the presence of large number of chromosomes in an organism a hindrance to sexual reproduction? Justify your answer by giving suitable reasons.
8. Is there a relationship between the size of an organism and its life span? Give two examples in support of your answer.

SHORT ANSWER TYPE QUESTIONS
9. What is agamospermy?
10. Can snails pollinate the flowers? What do you call such a pollination?
11. In some species of Asteraceae and grasses, seeds are formed without fusion of gametes. Give the scientific term for such type of reproduction.
12. How are pollen stored in a pollen bank?

13. Hypanthodium is a special type of inflorescence. Then what is hypanthium?
14. In the embryos of a typical dicot and a grass, which are the true homologous structures?
15. How many haploid cells are present in a mature female gametophyte of a flowering plant? Name them.
16. Why banana is considered a good example of parthenocarphy?
17. Differentiate between perisperm and endosperm giving one example each.
18. Explain the function of each of the following
(i) Coleorhizae
(ii) germ pores
19. Can an unfertilised, apomictic embryo sac give rise to a diploid embryo? If yes, then how?
20. If the chromosome number of a plant species is 20, what would be the chromosome number in its: (i) Pollen grains (ii) Endosperm cells?
21. Write the name of structure only through pollen tube enters within the embryo sac.
22. Write the name of condition in which pollen grains mature prior to stigma in bisexual reproduction.

LONG ANSWER TYPE QUESTIONS

23. Why is fertilization in angiosperm referred to as double fertilization? mention the ploidy of the cell involved.
24. Draw a neatly labeled sketch of L.S of an endospermous monocot seed.
25. Name the type of flower which favours cross pollination. Explain this process.
26. Why is bagging of the emasculated flower essential during hybridization experiments?
27. Fertilization is essential for production of seed, but in some angiosperms seeds develop without fertilization.
28. Give an example of angiosperm that produces seeds without fertilization.name the process.
29. Explain two ways by which seeds develop without fertilization.
30. Trace the development of embryo after syngamy in a dicot plant.
31. Endosperm development precedes embryo development. Explain.
32. Draw a diagram of a mature dicot embryo and label cotyledons, plumule, radical and hypocotyls in it.
33. Give reasons why:
(i) most zygotes in angiosperms divide only after certain amount of endosperm is formed.
(ii) groundnut seeds are exalbuminous and castor seeds are albuminous
(iii) micropyle remains as a small pore in the seed cat of a seed
(iv) integuments of an ovule harden and the water content is highly redused, as the seed matures.
(v) apple and cashew are not called true fruits.
34. How does the pollen mother cell develop into a mature pollen grain? Illustrate the stages with labeled diagrams.
35. Trace the development of megaspore mother cell up to the formation of a mature embryo-sac in flowering plant.
36. Draw a labeled diagram of the structure of mature dicot embryo. Pea flowers produce assured seed sets. Give a reason.
37. Mention any four strategies adopted b flowering plants to prevent self pollination.
38. Why is geitonogamy also referred to as genetical autogamy?
39. What is apomixes and what is its importance?
40. Describe the structure of pollen grain and the process of its germination.
41. With a neat diagram explain the 7-celled, 8-nucleate nature of the female gametophyte.
42. What develops into a microspore mother cell in a flower? Trace the development of this cell into a pollen grain which is ready for germination. Draw a labelled figure by a mature pollen grain.
43. Identify the types of flower shown in A and B. Which out of the two will produce an assured seedset.

CHEMISTRY ASSIGNMENT

1. Why does zinc oxide exhibit enhanced electrical conductivity on heating?

2. The electrical conductivity of a metal decreases with rise in temperature while that of a semi- conductor increase. Explain?

3. Write the difference between Schottky and Frenkel defect.

4. Analysis show that ferric oxide has formula $Fe_{0.96}O$. What fraction of the iron exist as Fe^{2+} and Fe^{3+}.

5. Ferric oxide crystallizes in hexagonal closed packed array of oxide ion with 2 out of every three octahedral holes occupied by ferric ions. Derive the formula of the ferric oxide.

6. If the radius of the octahedral void is r and the radius of the atom in the close packing is R, derive relationship between r and R.

7. if NaCl is doped with 10^{-3} mol% $SrCl_2$, what is the concentration of cation vacancies.

8. What is ferromagnetism.

9. Classify each of the following as being either a p- type or n- type semiconductor:-

a) Ge doped with In   b) B doped with Si

10. Niobium crystalline in a BCC structure. if the density is 8.55 gm/cm^3, calculate atomic radius of Niobium given that its atomic mass is 93u.

11. Components of a binary mixture of a two liquids A and B were being separated by distillation. After some time, separation of components stopped and composition of vapour phase became same as that of liquid phase. Both the components started coming in the distillate. Explain why this happened.

12. Explain why on addition of 1 mole of NaCl to 1 litre of water, the boiling point of water increases, while addition of 1 mole of methyl alchohalto one litre of water decreases its boiling point.

13. Explain the solubility rule "*like dissolves like*" in terms of intermolecular forces that exist in solutions.

14. Why are aquatic species more comfortable in cold water in comparison to warm water ?

15. Define the following modes of expressing the concentration of a solution. Which of these modes are independent of temperature and why ?
(i) w/w (mass percentage)   (v) x (mole fraction)
(ii) V/V (volume percentage)   (vi) M (molarity)

(iii) w/V (mass by volume percentage) (vii) m (molarity)
(iv) ppm. (parts per million)

15. Using Raoult's law, explain how the total vapour pressure over the solution is related to mole fraction of components in the following solutions.
(i) $CHCl_3$ (l) and CH_2Cl_2(l) (ii) NaCl(s) and H_2O(l)

16. Explain the terms ideal and non-ideal solutions in the light of forces of interactions operating between molecules in liquid solutions.

17. When kept in water, raisin swells in size. Name and explain the phenomenon involved with the help of a diagram. Give three applications of the phenomenon.

18. Discuss biological and industrial importance of osmosis.

19. Why is the mass determined by measuring a colligative property in case of some solutes is abnormal? Discuss it with the help of Van't Hoff factor.

20. Prove that relative lowering of vapour pressure of a solution containing non-volatile solute is equal to its mole fraction.

21. What will be the value of Van't Hoff factor (i) for benzoic acid if it dimerises in solution? How will the experimental molecular weight vary as compared to the normal molecular weight?

22. Write two differences between ideal and non-ideal solutions.

23. Which of the following solutions has higher freezing point? Justify your answer.

24. Define negative and positive deviation? Give two example for each.

25. A solution containing 15gm urea (molar mass=60gm) per litre of solution in water has same osmotic pressure (isotonic) as a solution of glucose (molar mass= 180gm) in water. Calculate the mass of glucose present in 1lire of its solution.

PHYSICAL EDU. XII ASSIGMENT

A. Objective Type/Multiple Choice Questions (MCQs)

1. State whether the following statements are True or False.

 Q.1 Planning is necessary for success in sports events.

 Q.2 Intramural competitions are within an institution.

Q.3 Community walk is a competitive event.

Q.4 Organising Committee is headed by a Chairman.

 Q.5 Knockout tournaments do not eliminate the losing team.

2. Fill in the blanks.

 Q.6 League tournament is also known as _____.

Q.7 _____ is the process of allowing a team to go to the next level in a tournament without playing.

Q.8 _____ committee handles the budget of a tournament.

Q.9 In single league tournament, each team plays the other team _____.

Q.10 Community bonding occurs in _____ tournaments.

3. Tick (✓) the correct option.

Q.11 A 5-km community walk is a type of .

    (i) Intramural competition   (ii) Extramural competition

    (iii) Specific sports programme   (iv) National tournament

Q.12 Round Robin tournaments are of ... types.

    (i) Three   (ii) Two

    (iii) Four   (iv) Six

Q.13 Knockout tournament is also known as ... .

    (i) Elimination tournament   (ii) Challenge tournament

    (iii) Round robin tournament   (iv) Consolation tournament

Q.14 Planning in sports leads to ... .

    (i) Increased expenditure   (ii) Increased mistakes

    (iii) Better coordination   (iv) Favouritism

Q.15 Pre-tournament committees include.

    (i) Organisation committee   (ii) Medical committee

    (iii) Awards committee   (iv) Transport committee

B. Short Answer Questions carrying 3 marks each (80-90 words)

Q.21 Discuss the pre-games responsibilities of officials of various committees.

Q.22 Explain the staircase method of league tournaments.

Q.23 Explain the seeding method and special seeding in knockout tournaments.

Q.24 Distinguish between intramural and extramural programmes.

Q.25 Discuss the objectives of planning in sports.

Q.26 What is the importance of tournaments? Discuss any three points.

Q.27 List the steps to form various committees for tournaments.

Q.28 Explain the different steps to be followed for organising a health run in your school.

C. Long Answer Questions carrying 5 marks each (150-200 words)..

Q.29 What are knockout tournaments? Draw a fixture of 21 teams on knockout basis.

Q.30 What are specific sports programmes? Explain any three.

Q.31 What is a league tournament? Explain the types, merits and demerits of league tournaments.

Q.32 Describe in detail the difference between intramural and extramural tournament.

ASSIGNMENT: COMPUTER SCIENCE WITH PYTHON

CHAPTER: PYTHON REVISION TOUR-I

1. What do you understand by Dynamic Typing feature of Python?

2. What are variables? How are they important for a program?

3. What are tokens in Python?

4. What are loops?

5. What is the use of break and continue in a program?

6. What is the difference between Interactive mode and Script Mode in Python?

7. Write a program to find whether the number is even or odd.

8. Write a program to calculate the area of a rectangle. The program should get the length and breadth;values from the user and print the area.

9. Write a program to check whether the number is positive number or negative number.

10. Write a program to convert the value in feet into inches.

11. What problem occurs with the following code

X=40

while X< 50 :

print(X)

Q12.Write a program to show the use of following functions of math module

a)   Ceil   b) Sqrt   c) sin   d) pow   e) floor

Q13. Write a program to calculate area and perimeter of a parallelogram.

Q14. Write a program to convert temperature value in Celsius into Fahrenheit and Kelvin.

Q15. Write a program to show arithmetic operations.

Q16.Write a program that counts the following type of characters in the string entered.

   a) The number of alphabets
   b) The number of digits
   c) The number of lower case letters
   d) The number of upper case letters.

Q17. Write programs to print patterns:

   a) Square of stars
   b) Right angled triangle of stars
   c) Square having 4times 1 in first row,4times 2 in sec row upto 4 times 4 in fourth row.
   d) Square having"1234" in 4 rows

Q18. WAP in Python to find and display the sum of all the values which are ending with 3 from a list.

Q19. WAP in Python to display those strings which are string with 'A' of given list.

Q20. WAP to accept a string and display whether it is a palindrome.

CHAPTER: PYTHON REVISION TOUR-II

Q1. What do you understand by immutable types?

Q2.Can we create an empty tuple? If yes how?

Q3. Write code to convert a tuple into a list?

Q4.What are the membership operators?

Q5.Define the term mapping related to dictionary.

Q6. Write any two methods of list and explain using code.

Q7.Write a program to count the number

of times a character appears in a given string.

Q8.Why is dictionary termed as an unordered collection of objects?

Q9. Define Bubble Sort.

Q10. Define Insertion Sort.

Q11. Write a program to input n numbers from the user. Store these numbers in a tuple. Print the maximum and minimum number from this tuple.

Q12. Write a program that returns the largest even number in the list of integers. If there is no even number in the input, print "No even number in the list".

Q13. Write a program to enter names of employees and their salaries as input and store them in a dictionary.

Q14. Write a program to show Bubble Sorting.

Q15. Write a program to show Insertion Sorting.

Case study based questions:

Q16.write the most appropriate list method to perform the following tasks:

   a) Delete a given element from the list
   b) Delete a third element from the list.
   c) Delete an element from the end of the list.
   d) Add an element at the beginning of the list

Q17. Create a dictionary 'ODD' of odd numbers between 1 and 10, where the key is the decimal number and the value is the corresponding number in words. Perform the following operations on this dictionary:

(a) Display the keys

(b) Display the values

(c) Display the items

(d) Find the length of the dictionary

(e) Check if 7 is present or not

(f) Check if 2 is present or not

(g) Retrieve the value corresponding to the key 9

(h) Delete the item from the dictionary corresponding to the key 9

Q18. Write to accept values from a user and create a tuple.

Q19. Write a program to input total number of sections and stream name

in 11th class and display all information on the output screen.

Q20. Write a program to perform various list operations after displaying menu options like Add, Delete, Modify, Delete List and Display list.

CHAPTER: FILE HANDLING

Q.1 Write a python program to read last 2 lines of a text file.

Q.2 Write a python program to count number of lines in a text file.

Q.3 Write a python program to print from line 2 to line 5 (assuming the file has more than 5 lines)

Q.4 Write a python program to insert a new line at the beginning of the file

Q.5 Write a python program to move the contents of a file to an list

Q.6 Write a python program to check given IP address is present in a file

Q.7 What Will Be the Output of the Following Code Snippet?

```
fo = open("myfile.txt", "w+")

print ("File name is : ", fo.name)

seq="File handling is easy in python"

fo.writelines(seq)

fo.seek(0,0)

for line in fo:

print (line)

fo.close()
```

Q8. Write a Python Program that Reads a Text File and Counts the Number of Times a Certain Letter

appears in the Text File

Q.9 Write a Python Program to Read a Text File and Print all the Numbers Present in the Text File

Q.10 Write a Python Program to Count the Number of Blank Spaces in a Text File.

Q.11 Write a Python Program to Read a File and Capitalize the First Letter of Every Word in the File.

Q.12 Write a Python Program to Read the Contents of a File in Reverse order.

Q13. Name the File-related modules in Python?

Q.14. Which command is used to open a file "c:\temp.txt" in read-mode

Q15. Write a program to read and write in a binary file.

Case study based questions:

16. Write a program that reads a text file and creates another file that is identical except that every sequence of consecutive blank spaces is replaced by a single space.

17. A file sports.dat contains information in following format :

Event ~ Participant

Write a function that would read contents from file sports.dat and creates a file named Atheletic.dat copying only those records from sports.dat where the event name is " Atheletics ".

18. A file contains a list of telephone numbers in the following form:

Arvind 7258031

Sachin 7259197 .

The names contain only one word the names and telephone numbers are separated by white spaces Write program to read a file and display its contents in two columns.

19. Write a method/function DISPLAYWORDS() in python to read lines from a text file STORY.TXT, and display those words, which are less than 4 characters.

20. Write a program that reads characters from the keyboard one by one. All lower case characters get stored inside the file LOWER, all upper case characters get stored inside the file UPPER and all other characters get stored inside file OTHERS.