DEWAN PUBLIC SCHOOL, HAPUR

HOLIDAY HOMEWORK

CLASS XII

SESSION: 2023 - 24

CLASS – XII

SUBJECT – PHYSICS

CHAPTER -1 (ELECTRIC CHARGES & FIELDS)

(1 Mark Questions)

1. Two point charges each of 20 μC are placed 50 cm apart in air. What is the electric field intensity at the mid point on the line joining the centre of two point charges?
   (a) 5×10^6 NC^{-1}
   (b) 18×10^6 NC^{-1}
   (c) Zero
   (d) None of these

2. **Which of the following is false about Electrostatic field lines?**

a. **Field lines start from positive charges and end at negative charges.**
b. **If there is a single positive charge, field lines will end at infinity.**
c. **Two field lines can never cross each other**
d. **Electrostatic field lines form closed loops**

3. **An electric charge enters an electric field region along the direction of the electric field. Which of the following will be the path of the particle's motion?**

a. **Parabola**
b. **Circular**
c. **Straight Line**
d. **None of the above**

4. **The SI unit of the electric field is:**

a. **Cm^{-2}**
b. **Am^{-1}**
c. **Vm^{-1}**
d. **Cm^{-1}**

5. **When a glass rod is rubbed with silk, it**

a. **gives electrons to silk.**
b. **gives protons to silk.**
c. **gains electrons from silk.**
d. **gains protons from silk.**

Directions: In each of the following questions, a statement of Assertion is given and a corresponding statement of Reason is given just below it. Of the statements, given below, mark the correct answer as:

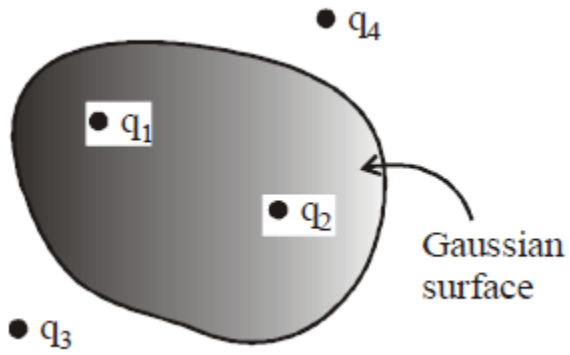
(a) Both assertion and reason are true and reason is the correct explanation of aassertion

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false .

(d) Both Assertion and Reason are false.

6. **Assertion :** Electric lines of force never cross each other.
   Reason : Electric field at a point superimpose to give one resultant electric field.
7. **Assertion :** Four point charges q1, q2, q3 and q4 are as shown in figure. The flux over the shown Gaussian surface depends only on charges q1 and q2.



   Reason : Electric field at all points on Gaussian surface depends only on charges q1 and q2.

(2 Marks Questions)

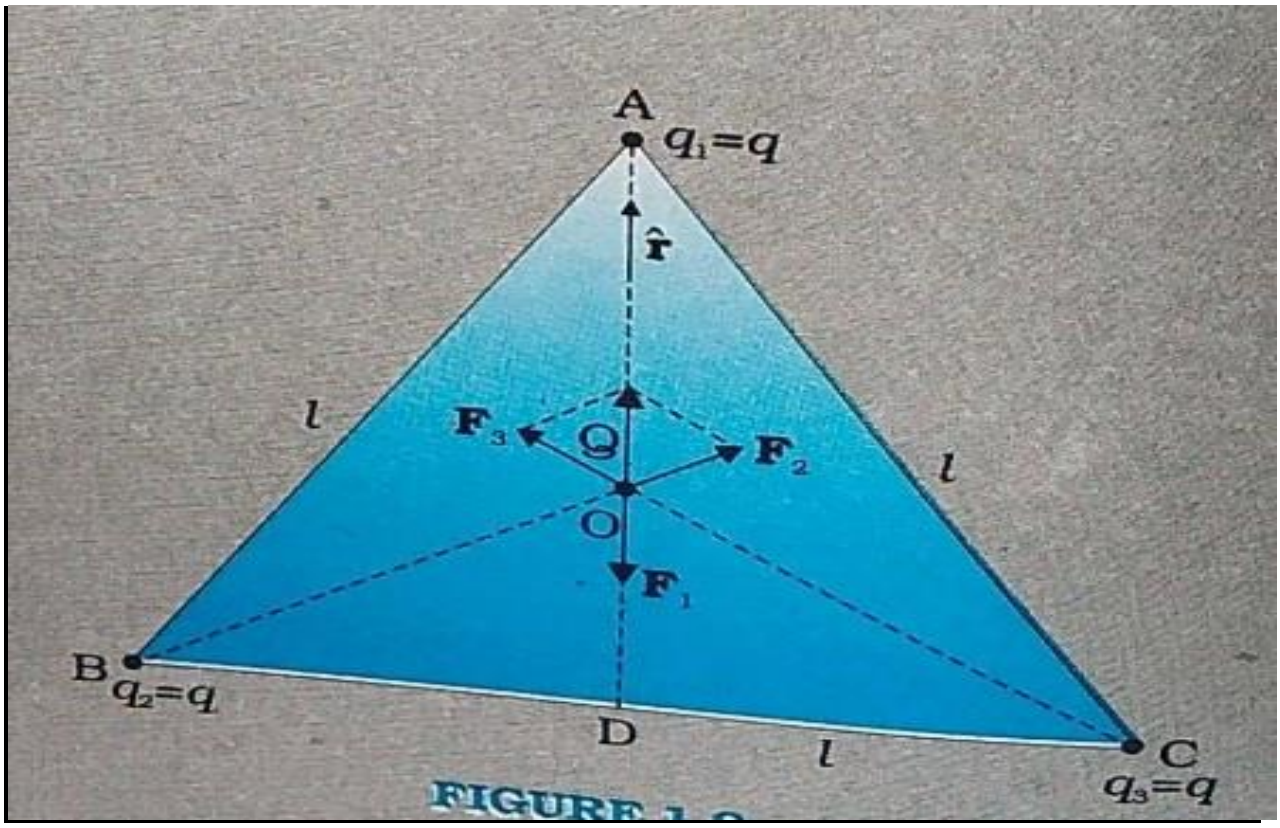
8. Sketch electric lines of force due to (i) isolated positive change (ie q>0) and (ii) isolated negative change (ie q<0)
9. Four point charges $q_A = 2\ \mu C$, $q_B = -5\ \mu C$, $q_C = 2\ \mu C$, and $q_D = -5\ \mu C$ are located at the corners of a square ABCD of side 10 cms. What is the force on a charge of $1\ \mu C$ placed at the centre of the square?
10. A system has two charges $q_A = 2.5 \times 10^{-7}$ C and $q_B = -2.5 \times 10^{-7}$ C located at points A: $(0, 0, -15\ cm)$ and B: $(0, 0, +15\ cm)$, respectively. What are the total charge and electric dipole moment of the system?

(3 Marks Questions)

11. Two large, thin metal plates are parallel and close to each other. On their inner faces, the plates have surface charge densities of opposite signs and of magnitude $17.0 \times 10^{-22}\ \mathrm{C/m^2}$. What is E: (a) in the outer region of the first plate, (b) in the outer region of the second plate, and (c) between the plates?

12. An oil drop of 12 excess electrons is held stationary under a constant electric field of $2.55 \times 10^{4}\ \mathrm{N\,C^{-1}}$ in Millikan's oil drop experiment. The density of the oil is 1.26 $g^{cm^{-3}}$. Estimate the radius of the drop. $\left(g = 9.81\ \mathrm{m\ s^{-2}}; e = 1.60 \times 10^{-19}\ \mathrm{C}\right)$.

13. Consider three charges q1,q2,q3 each equal to q at the vertices of an equilateral triangle of side l. What is the force on a charge Q (with the same sign as q) placed at the centroid of the triangle, as shown in figure?



FIGURE

(5 Marks Questions)

14. (I) Two point charges q and –q are placed at a distance 2a apart. Calculate the electric field at a point P situated at a distance r along the perpendicular bisector of the line joining the charges. What is the field when r >> a?

(II)Two point changes q and –q are placed at a distance 2a apart. Calculate the electric field at a point P situated at a distance r along the axial line joining the charges. What is the field when r >> a?

(III) Two point charges $q_A = 3\ \mu C$ and $q_B = -3\ \mu C$ are located 20 cm apart in vacuum.

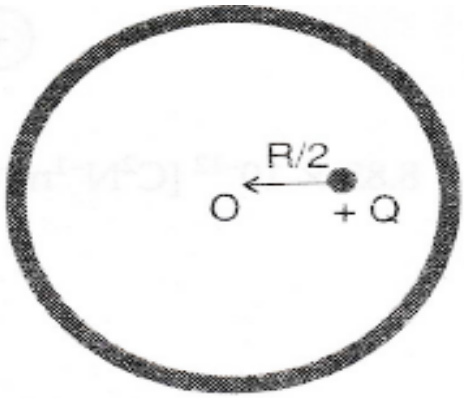
(a) What is the electric field at the midpoint O of the line AB joining the two charges?

(b) If a negative test charge of magnitude $1.5 \times 10^{-9}\ C$ is placed at this point, what is the force experienced by the test charge?

15. (i) Obtain the formula for the electric field due to a long thin wire of uniform linear charge density λ without using Gauss's law.

(ii) A particle of mass **m** and charge (– **q**) enters the region between the two charged plates initially moving along **x**-axis with speed **vx** (like particle 1 in Fig. 1.33). The length of plate is **L** and an uniform electric field **E** is maintained between the plates. Show that the vertical deflection of the particle at the far edge of the plate is $qEL^2 / (2m^{v2_x})$.

(iii) Figure shows a point charge +Q, located at a distance 2R from the centre of a spherical metal shell. Draw the electric field lines for the given system.

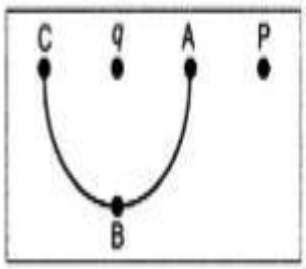


CHAPTER -2 (ELECTRIC POTENTIAL & CAPACITANCE)

(1 Mark Questions)

16. Which one is not a unit of electric potential ?
    a. Volt
    b. Joule/ Coulomb
    c. Newton/Coulomb
    d. Newton ×metre/coulomb

17. Consider the situation of figure. The work done in taking a point charge from P to A is WA, from P to B is WB and from P to C is WC. Then :



a. $W_A < W_B < W_C$
b. $W_A > W_B > W_C$
c. $W_A = W_B = W_C$
d. $W_A = W_B + W_C$

18. Which of the following statement is true?

(a) Electrostatic force is a conservative force.

(b) Potential at a point is the work done per unit charge in bringing a charge from any point to infinity.

(c) Electrostatic force is non-conservative

(d) Potential is the productof charge and work.

19. Two charged conducting spheres of radii r1 and r2 have same electric field near their surfaces. The ratio of their electric potential is :-

a. 1:1
b. $r_1 : r_2$
c. $r_2 : r_1$
d. None of the above

20. N drops of mercury each of radius r and charge q combine to form a big drop .The potential of the big drop as compared to each small drop is :

a. N times
b. $N^{2/3}$ times
c. $N^{1/3}$ times
d. $N^{-2/3}$ times

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(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false .

(d) Both Assertion and Reason are false.

21. Assertion (A) : An electron has a higher potential energy when it is at a location associated with a negative value of potential and has a lower potential energy when at a location associated with a positive potential.
Reason (R) : Electrons move from a region of higher potential to a region of lower potential.

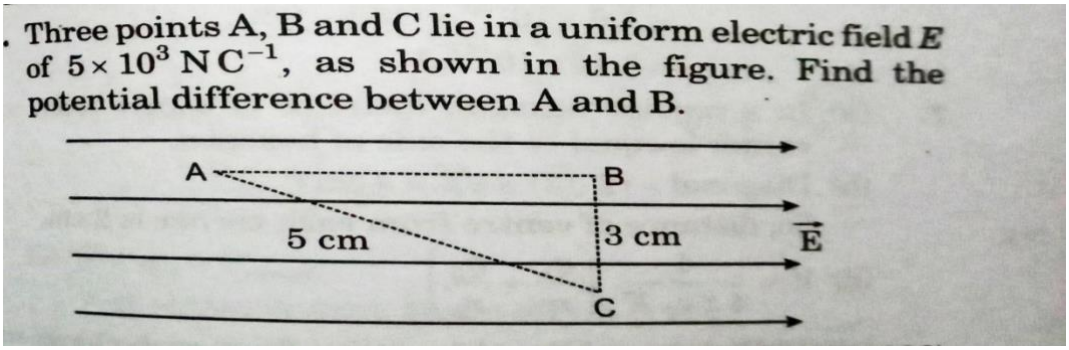
22. Assertion (A) : For a point charge concentric spheres centered at a location of the charge are equipotential surfaces .
Reason (R) : An equipotential surface is a surface over which potential has zero value .

(2 Marks Questions)

23. Derive the expression for electric potential due to an electric dipole at an equitorial point .

24. Four Charges +q, -q , +q and -q are to be arranged respectively at the four corners of a square ABCD of side 'a' . Find the work required to put together this arrangement.

25.



(3 Marks Questions)

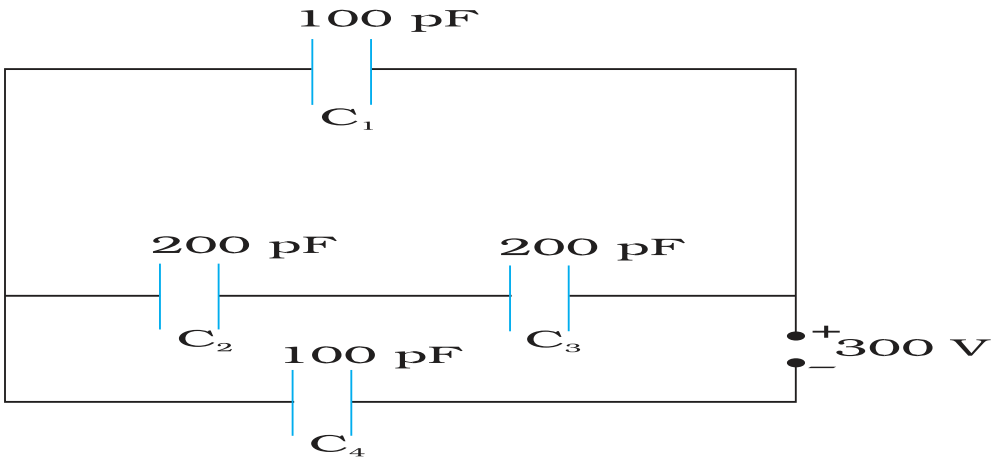
26. A dielectric slab of thickness 't' is introduced without touching between the plates of a parallel plate capacitor separated by a distance'd' (t < d) . Derive an expression for the capacitance of the capacitor .

27. A 200 μF parallel plate capacitor having plate separation of 5 mm is charged by a 100 V dc source. It remains connected to the source. Using an insulated handle, the distance between the plates is doubled and a dielectric slab of thickness 5 mm and dielectric constant 10 is introduced between the plates. Explain with reason, how the (i) capacitance, (ii) electric field between the plates, will change & also find their new values ?

28.

Obtain the equivalent capacitance of the network shown in figure. For a 300 V supply,

determine the charge on each capacitor.



(5 Marks Questions)

29.

A capacitor of capacitance C_1 is charged to a potential V_1 while another capacitor of capacitance C_2 is charged to a potential difference V_2. The capacitors are now disconnected from their respective charging batteries and connected in parallel to each other.

(i) Find the total energy stored in the two capacitors before they are connected.

(ii) Find the total energy stored in the parallel combination of the two capacitors.

(iii) Explain the reason for the difference of energy in parallel combination in comparison to the total energy before they are connected.

30. (I) Two charges $5 \times 10^{-8}8$ C and -3×10^{-8} C are located 16 cm apart. At what point(s) on the line joining the two charges is the electric potential zero? Take the potential at infinity to be zero. .
(II) A charge of 8 mC is located at theorigin. Calculate the work done in taking a small charge of -2×10^{-9} C from a point P(0,0,3 cm) to a point Q (0,4 cm, 0), via a point R (0,6 cm, 9 cm).

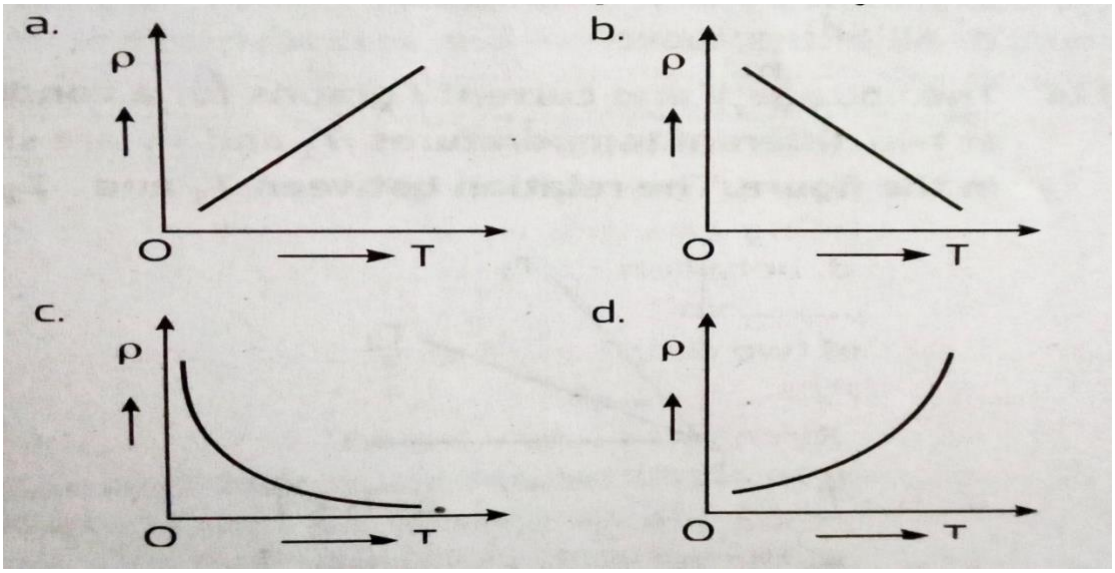
CHAPTER -3 (CURRENT ELECTRICITY)

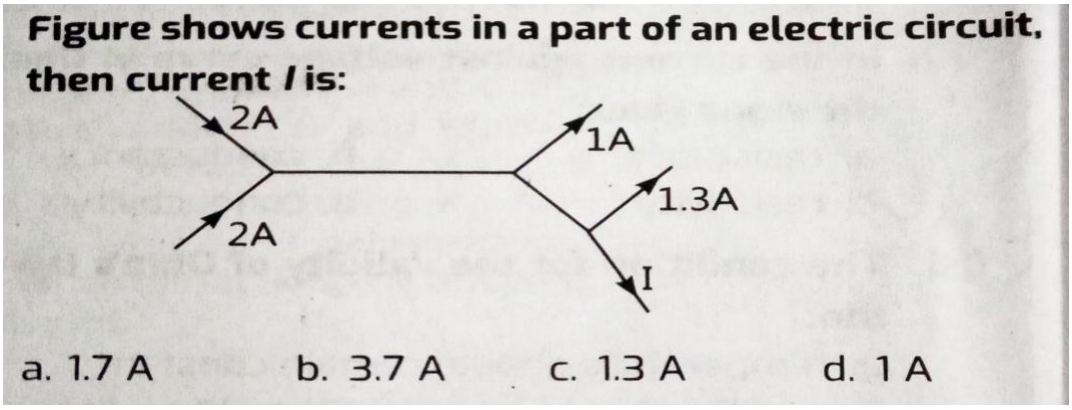
(1 Mark Questions)

31. Which of the following characteristics of electrons determines the current in a conductor ?
    a. Drift velocity alone
    b. Thermal velocity alone
    c. Both drift velocity & thermal velocity
    d. Neither drift nor thermal velocity

32. The resistance of a metal wire increases with increasing temperature on account of :-
    a. Decrease in free electron density
    b. Increase in mean free path
    c. Increase in the mass of electron
    d. Decrease in relaxation time

33. The temperature (T) dependence of Resistivity (rho) of a semiconductor is represented by :-





34.

35. Kirchhoff's first & second laws are respectively based on law of conservation of :-

a. Momentum and energy
b. Charge and energy
c. Mass and energy
d. None of the above

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(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false .

(d) Both Assertion and Reason are false .

36. Assertion (A) : Ohm's law is not valid, if current depends on voltage non-linearly .

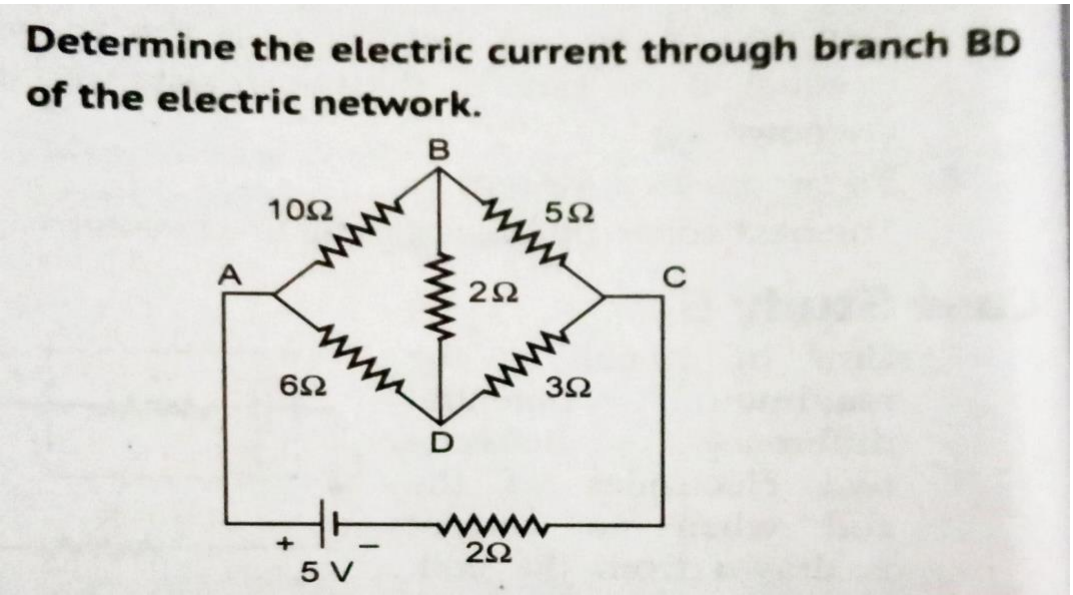
Reason (R) : Ohm's law is a fundamental law of nature .

37. Assertion (A) : Current flows in a conductor only when there is an external electric field within the conductor .

Reason (R) : The drift velocity of the electron is directly proportional to the electric field .

(2 Marks Questions)

38.



39. Derive an expression for drift velocity of free electrons in a conductor in terms of relaxation time of electron .

40. Deduce Ohm's law with the help of term drift velocity of any conductor .

(3 Marks Questions)

41. (a) Two cells of emf E1 and E2 and internal resistance r1, and r2 are connected in parallel such that they send current in same direction. Derive an expression for equivalent resistance and equivalent emf of the combination.

(b) In case the two cells are identical , each of emf E = 5V and internal resistance r= 2 Ohm , Calculate the voltage across the external resistance R = 10 Ohm .

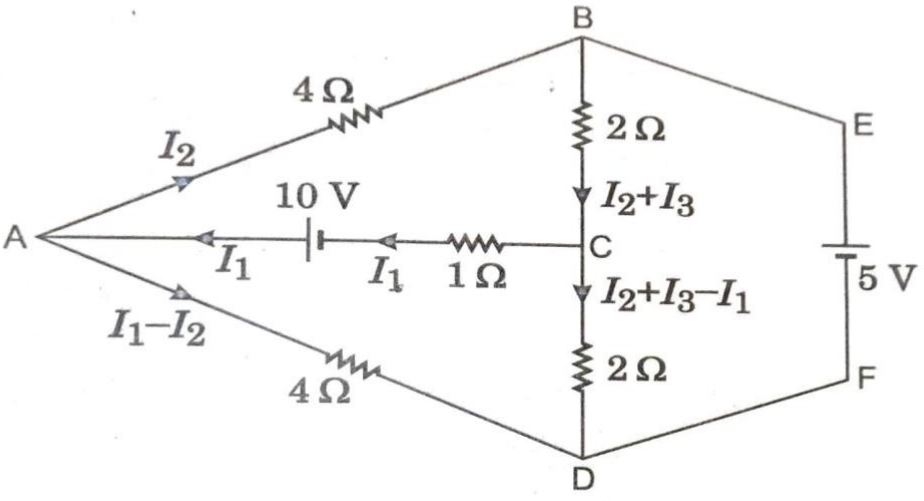
42. *(a) A heating element using nichrome connected to a 230 V supply draws an initial current of 3.2 A which settles after a few seconds to a steady value of 2.8 A. What is the steady temperature of the heating element if the room temperature is 27.0 °C? Temperature coefficient of resistance of nichrome averaged over the temperature range involved is* $1.70 \times 10^{-4}\ °C^{-1}$.

(b) The resistance of the Platinum wire of a platinum resistance thermometer at the ice point is 5 Ohm and at steam point is 5.26 Ohm . When the thermometer is inserted in a hot bath , the resistance of the Platinum wire is 5.78 Ohm . Calculate the temperature of the bath .

43. What is Wheatstone's Bridge ? Explain its construction. State and proof the balancing condition for this bridge .

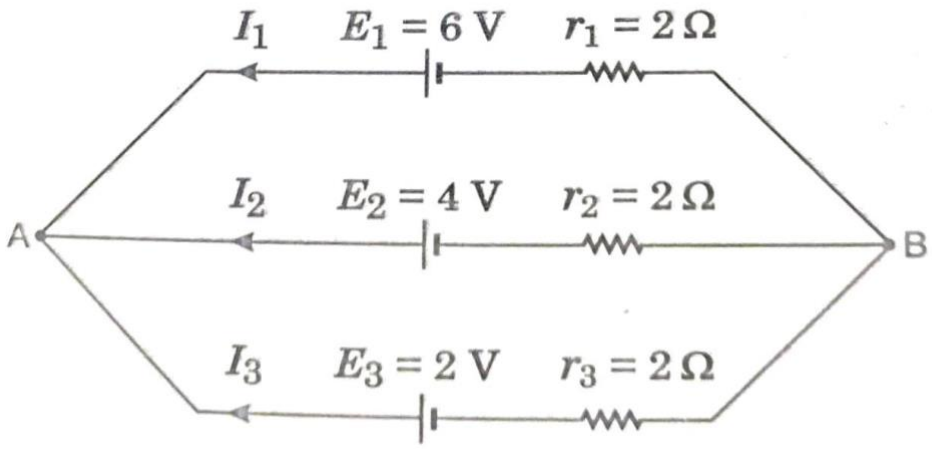
(5 Marks Questions)

44. Find the current through each branch in the following diagram :-



45.

Find the current flowing through each cell in the circuit shown in figure. Also calculate the potential difference across the terminals of each cell.



Holiday Homework
CLASS XII

Matrices and Determinants

1. If a matrix A = $[a_{ij}]$ of order 2 where $a_{ij} = 1\ if\ i \neq j$ and $a_{ij} = 0\ if\ i = j$, then matrix A^4 is equal to
   (a) A (b) I (c) –A (d) None
2. If A is a square matrix such that A^2 = I, then the value of $(A - I)^3 + (A + I)^3 - 7A$
   (a) A (b) I (c) –A (d) None
3. If A = $\begin{bmatrix} 3 & -3 \\ -3 & 3 \end{bmatrix}$ and A^2 = kA, then find the value of k.
   (a) 3 (b) 9 (c) 6 (d) -6
4. If A and B are two matrices of order $3 \times m$ and $3 \times n$ respectively and $m = n$, then the order of matrix 5A – 6B is
   (a) $3 \times m$ (b) 3×3 (c) $n \times m$ (d) None
5. If A = $\begin{bmatrix} 0 & i \\ i & 1 \end{bmatrix}$ and B = $\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$, then the value of $|A| + |B|$ is
   (a) 1 (b) -1 (c) 0 (d) None
6. If A is a skew symmetric matrix of order 3, then the value of $|A|$ is
   (a) 1 (b) -1 (c) 0 (d) None
7. If A = $\begin{bmatrix} 1 & -3 & 5 \\ 6 & 0 & 4 \\ 1 & 5 & -7 \end{bmatrix}$, then the value of $a_{11}A_{11} + a_{12}A_{12} + a_{13}A_{13}$ is
   (a) 6 (b) -8 (c) 8 (d) None
8. If A is a square matrix of order 3 and $|5A|$= k$|A|$, then the value of k is
   (a) 125 (b) 25 (c) -125 (d) None
9. If A and B are two matrices of order 3 and $|A|$ = 5 and $|B|$ = 3 then $|5AB|$ is equal to:
   (a) 1675 (b) 1775 (c) 1875 (d) None
10. If A is a square matrix of order 2 with $|A|$ = 5, then $|2adjA|$ is equal to:
    (a)25 (b) -20 (c) 20 (d) None
11. For what values of x, the matrix A = $\begin{bmatrix} 5 - x & x + 1 \\ 2 & 4 \end{bmatrix}$
    (i) singular or A^{-1} does not exist.
    (ii) non singular or A^{-1} exists.
12. If A = $\begin{bmatrix} -2 & 0 & 0 \\ 0 & -2 & 0 \\ 0 & 0 & -2 \end{bmatrix}$, then value of $|adjA|$ and $|A.adjA|$.
13. If A is a matrix of order 3×3 where A = $[a_{ij}]$, then find matrix if

$$[a_{ij}] = \begin{cases} i + j\ if\ i < j \\ i - j\ if\ i = j \\ \frac{i}{j} \quad if\ i > j \end{cases}$$

14. If a matrix A is both symmetric and skew symmetric, then find the value of $|A|$.
15. If A is an invertible matrix of order 2×2 and $|A|$ = 7, then find the value of $|A^{-1}|$ and $|-A^{-1}|$.
16. If A is non singular matrix of order 3 and $|A|$=5, then find the value of $|AA^{-1}|$.
17. Find the value of $x + 2y - z$ from the following equations by using matrix method:
    $x + y + z = 9$
    $x + z = 5$
    $y + z = 7$

18. Find matrix A if $\begin{bmatrix} 2 & -1 \\ 1 & 0 \\ -3 & 4 \end{bmatrix}$ A = $\begin{bmatrix} -1 & -8 \\ 1 & -2 \\ 9 & 22 \end{bmatrix}$.

19. If A = $\begin{bmatrix} 1 & -1 & 2 \\ 3 & 4 & -5 \\ 2 & -1 & 3 \end{bmatrix}$, find A^{-1} and solve the following equations by using A^{-1}:
$x - y + 2z = 7$, $3x + 4y - 5z = -5$, $2x - y + 3z = 12$.

20. Solve the following equations using matrix method:
$\frac{1}{x} - \frac{1}{y} + \frac{2}{z} = 7$
$\frac{3}{x} + \frac{4}{y} - \frac{5}{z} = -5$
$\frac{2}{x} - \frac{1}{y} + \frac{3}{z} = 12$

21. If A = $\begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$ and B = $\begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$, find the product AB and use the product to solve the following equations:
$y + 2z = 7$
$x - y = 3$
$2x + 3y + 4z = 17$

22. If A^{-1} = $\begin{bmatrix} 3 & -1 & 1 \\ -15 & 6 & -5 \\ 5 & -2 & 2 \end{bmatrix}$ and B = $\begin{bmatrix} 1 & 2 & -2 \\ -1 & 3 & 0 \\ 0 & -2 & 1 \end{bmatrix}$, find $(AB)^{-1}$.

23. If A= $\begin{bmatrix} -3 & -2 & -4 \\ 2 & 1 & 2 \\ 2 & 1 & 3 \end{bmatrix}$ and B = $\begin{bmatrix} 1 & 2 & 0 \\ -2 & -1 & -2 \\ 0 & -1 & 1 \end{bmatrix}$, then find AB and use it to solve the following equations:
$x - 2y = 3$
$2x - y - z = 2$
$-2y + z = 3$

24. If (a, b), (c, d) and (e, f) are the vertices of ΔABC and Δ denotes the area of ΔABC, then $\begin{vmatrix} a & c & e \\ b & d & f \\ 1 & 1 & 1 \end{vmatrix}^2$ is equal to:

25. If $\begin{bmatrix} 2 & 0 \\ 5 & 4 \end{bmatrix}$ = P + Q, where P is a symmetric and Q is a skew symmetric matrix, then P and Q equal to:

26. If $|A| = |kA|$, where A is a square matrix of order 2, then find the sum of all possible values of k.

27. If $f(\alpha) = \begin{bmatrix} cos\alpha & -sin\alpha & 0 \\ sin\alpha & cos\alpha & 0 \\ 0 & 0 & 1 \end{bmatrix}$, prove that $f(\alpha).f(-\beta) = f(\alpha - \beta)$.

28. If A = $\begin{bmatrix} cos\alpha & -sin\alpha \\ sin\alpha & cos\alpha \end{bmatrix}$ and $A + A' = I$, then find the value of α.

29. If A is a matrix of order 3 with each entry 0 or 1, then find
i) Number of such matrices.
ii) Number of such symmetric matrices.
iii) Number of such skew symmetric matrices.
iv) Number of such matrices which are neither symmetric nor skew symmetric.

30. If A is a matrix of order 3 with each entry 1 or -1, then find

i) Number of such matrices.
ii) Number of such symmetric matrices.
iii) Number of such skew symmetric matrices.
iv) Number of such matrices which are neither symmetric nor skew symmetric.

Vectors and 3-Dimensional Geometry

1. Find a vector whose magnitude is 7 units in the direction of vector $\vec{a} = \hat{\imath} - 2\hat{\jmath}$.
   (a) $\frac{1}{\sqrt{5}}(7\hat{\imath} - 14\hat{\jmath})$ (b) $(7\hat{\imath} - 14\hat{\jmath})$ (c) $\frac{-1}{\sqrt{5}}(7\hat{\imath} - 14\hat{\jmath})$ (d) None
2. Find the direction cosine of the vector $\vec{a} = \hat{\imath} + \hat{\jmath} + \hat{k}$.
   (a) (1, 1, 1) (b) $\left(\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}\right)$ (c) $\pm\left(\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}\right)$ (d) None
3. If point P and Q with position vectors $\overrightarrow{OP} = 3\vec{a} - 2\vec{b}$ and $\overrightarrow{OQ} = \vec{a} + \vec{b}$, then find the position vector of R which divides the line joining P and Q in the ratio 2 :1 internally.
   (a) $\frac{\vec{a}}{3}$ (b) $\frac{2\vec{a}}{3}$ (c) $\frac{5\vec{a}}{3}$ (d) None
4. Find the projection of the vector $\vec{a} = 2\hat{\imath} + 3\hat{\jmath} + 2\hat{k}$ on the vector $\vec{b} = \hat{\imath} + 2\hat{\jmath} + \hat{k}$.
   (a) $5\sqrt{6}$ (b) $3\sqrt{6}$ (c) $\sqrt{6}$ (d) None
5. If two vectors $\vec{a}$ and $\vec{b}$ are such that $|\vec{a}| = 2$, $|\vec{b}| = 3$ and $\vec{a}.\vec{b} = 4$, then find $|a - b|$.
   (a) $\sqrt{3}$ (b) $\sqrt{5}$ (c) 5 (d) None
6. If $|\vec{a}| = \sqrt{3}$, $|\vec{b}| = 2$ and $\vec{a}.\vec{b} = \sqrt{6}$, then find the angle between $\vec{a}$ and $\vec{b}$.
7. Let $\vec{a}$ and $\vec{b}$ be two unit vectors and θ be the angle between them. If $\vec{a} + \vec{b}$ is a unit vector then find angle θ.
8. If a line makes angle 90^0, 60^0 and 30^0 with positive direction of x, y and z axis then find direction cosine of that line.
9. Find the value of p for which the vector $3\hat{\imath} + 2\hat{\jmath} + 9\hat{k}$ and $\hat{\imath} - 2\hat{\jmath} + 3\hat{k}$ are parrellel.
10. Find the shortest distance of the lines whose vectors equations are $\vec{r} = (\hat{\imath} + \hat{\jmath}) + \lambda(2\hat{\imath} - \hat{\jmath} + \hat{k})$ and $\vec{r} = (2\hat{\imath} - \hat{\jmath} + \hat{k}) + \mu(3\hat{\imath} - 5\hat{\jmath} + 2\hat{k})$
11. Find the vector equation of the line passing through the point (1, 2, -4) and perpendicular to the lines $\frac{x-8}{3} = \frac{y+19}{-16} = \frac{z-10}{7}$ and $\frac{x-15}{3} = \frac{y-29}{8} = \frac{z-5}{-5}$
12. Show that the lines $\frac{x+1}{3} = \frac{y+3}{5} = \frac{z+5}{7}$ and $\frac{x-2}{1} = \frac{y-4}{3} = \frac{z-6}{5}$ intersect. Also find the intersection point.
13. Find the image of the point P(1, 6, 3) on the line $\frac{x}{1} = \frac{y-1}{2} = \frac{z-2}{3}$. Also find the distance of foot and point P.
14. The Cartesian equation of line is $6x - 2 = 3y + 1 = 2z - 2$, then find direction ratio of parallel vector $\vec{b}$ and also find the equation of line parallel to this line and passing through the point (2, -1, -1).
15. If $\hat{a}, \hat{b}, \hat{c}$ are mutually perpendicular unit vectors then find the value of $|2\hat{a} + \hat{b} + \hat{c}|$.
16. Write a unit vector perpendicular to both the vectors $\vec{a} = \hat{\imath} + \hat{\jmath} + \hat{k}$ and $\vec{b} = \hat{\imath} + \hat{\jmath}$.
17. If $\vec{r} = x\hat{\imath} + y\hat{\jmath} + z\hat{k}$, then find $(\vec{r} \times \hat{\imath}).(\vec{r} \times \hat{\jmath}) + xy$.
18. Find value of p for which the vectors $3\hat{\imath} + 2\hat{\jmath} + 9\hat{k}$ and $\hat{\imath} - 2p\hat{\jmath} + 3\hat{k}$ are parallel.
19. Vectors $\vec{a}$, $\vec{b}$ and $\vec{c}$ are such that $\vec{a} + \vec{b} + \vec{c} = 0$ and $|\vec{a}| = 3, |\vec{b}| = 5, |\vec{c}| = 7$, then find the angle between $\vec{a}$ and $\vec{b}$.
20. Let $\vec{a} = \hat{\imath} + 4\hat{\jmath} + 2\hat{k}, \vec{b} = 3\hat{\imath} - 2\hat{\jmath} + 7\hat{k}$ and $\vec{c} = 2\hat{\imath} - \hat{\jmath} + 4\hat{k}$ are three vectors. Find a vector $\vec{p}$ which is perpendicular to both $\vec{a}$ and $\vec{b}$ and $\vec{p}.\vec{c} = 18$.

21. Prove that $\left|\vec{a} \times \vec{b}\right|^2 = \begin{vmatrix} \vec{a}.\vec{a} & \vec{a}.\vec{b} \\ \vec{a}.\vec{b} & \vec{b}.\vec{b} \end{vmatrix}$.

22. If $\hat{a}$ and $\hat{b}$ are unit vectors and θ be the angle between them, then prove that $sin\frac{\theta}{2} = \frac{1}{2}\left|\hat{a} - \hat{b}\right|$.

23. If $\vec{a}, \vec{b}$ and $\vec{c}$ are three non zero unequal vectors such that $\vec{a}.\vec{b} = \vec{a}.\vec{c}$, then find the angle between $\vec{a}$ and $\vec{b} - \vec{c}$.

24. Find the equation of the diagonals of the parallelogram PQRS whose vertices are P(4, 2, -6) , Q(5, -3, 1), R(12, 4, 5) and S(11,9, -2). Use these equations to find the point of intersection of diagonals.

25. A line l passes through point (-1, 3, -2) and is perpendicular to both the lines $\frac{x}{1} = \frac{y}{2} = \frac{z}{3}$ and $\frac{x+2}{-3} = \frac{y-1}{2} = \frac{z+1}{5}$. Find the vector equation of the line l. Hence obtain its distance from origin.

<u>Note:-</u> Write all the trigonometric formulas of Class XI in your class notebook and also learn them.

HOLIDAY HOMEWORK ASSIGNMENT

CHAPTER: SOLUTIONS

1.**Read the passage given below and answer the following questions** :

Most of the gases are soluble in water to some extent. The solubility of gas in water generally depends upon nature of the gas, temperature and pressure. In general, the gases which are easily liquefiable are more soluble in water. The dissolution of gas in water is exothermic process. Hence, the solubility of gas decreases with rise in temperature. The effect of pressure on the solubility of a gas is given by Henry's Law which states that mass of the gas dissolved per unit volume of a liquid at particular temperature is directly proportional to the pressure of the gas above liquid at equilibrium.

(i) The solubility of gas in water depends upon:

(a) Nature of the gas (b) Temperature

(c) Pressure (d) All of the above

(ii) The dissolution of gas in water is:

(a)endothermic process

(b)Exothermic process

(c)Both (a) and (b)

(d) none of these

(iii)The solubility ofgas with rise in temperature:

(a) Increases

(b) Decreases

(c)Remains some

(d)first increases and then decreases

(Iv)he effect of pressure on the solubility of a gas given by:

(a) Raoult's Law

(b)Henry's Law

(c)Boyle's Law

(d)Charle's Law

.**The following questions (No. 2 to 5) are Multiple Choice Questions carrying 1 mark each.**

2.Which of the following is not correct for an ideal solution?

(a)It should obey Raoult's Law

(b)AHmix = 0

(c)AHmix # 0

(d)AVmix = 0

3.Select the non-ideal solution showing positive deviation from Raoult's Law.

(a)$CHCl_3 + C_6H_6$

(b) $(CH_3)_2CO + C_6H_5NH_2$

(c) $H_2O + HCl$

(d) $H_2O + C_2H_5OH$

4.Which of the following is a colligative property?

(a)Osmotic pressure

(b)Boiling point

(c)Vapour pressure

(d(Electrical conductivity

5..The number of moles of solute present in 1000 g of the solvent is known as

(a)Molarity (b) Molality

(c) Normality (d) Mole fraction

In the following questions (no. 6 & 7), a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices.

(a) Assertion and reason both are correct statements and reason is correct explanation for assertion.

(**b)Assertion and reason both are correct statements but reason is not the correct explanation for assertion.**

(**c)Assertion is correct statement but reason is wrong statement.**

(d)Assertion is wrong statement but reason is correct statement.

6.Assertion : Cooking time is reducedinpressure cooker.

Reason : Boiling point of water inside the pressure cooker is elevated.

7.Assertion : Two solution having same osmotic pressures are called isotonic solutions.

Reason : Lowering of vapour pressure is not a colligative property.

The following questions (No. 8 & 9), are Short Answer Type-I and carry 2 marks each.

8.10 g glucose is dissolved in 90 g of water then what will be the mass % of glucose?

9.The freezing point of solution of 0.1 g week monatomic acid dissolved in 22g water in 272.817 k. Calculate molar mass of acid. (Kf = 1.86 k kg mol-1)

The following questions (No. 10 & 11) are Short Answer Type-II carrying 3 marks each.

10. 10.8 g sucrose is dissolved in 100 g of water. At which temperature, this solution will boil at 1.013 bar pressure? The value of KL for water is 0.52 k kg mol-1

11. A substance X (molecular mass = 94) associates as 2X = X2 when dissolved in CC14- If 10g of X is dissolved in 2 kg of ccl4, the freezing point is lowered by 1.08?C, K, for ccl4 is31.8kkg mol-1. Calculate the degree of dissociation of X.

Q.No 12 is a Long Answer Type Question carrying 5 marks each.

Q.12. (i) Define the following terms :

(a) Molarity

(b)Molal elevation constant (Kb)

(ii) A solution containing 15 g urea (molar mass = 60 g mol 1) per litre of solution in water has the same osmotic pressure (isotonic) as a solution of glucose. (molar mass = 180 g mol"1) in water. Calculate the mass of glucose present in one litre of its solution.

OR

(a)What will be the value of van't Hoff factor for dilute solution of Al2(SO4)3 in water?

(b)among 1 m glucose, 1m KCI and 1 m K2SO4, which will have minimum freezing point and why?

(c) A solution ofglycerol (C3H8O3) is formed by dissolving some glycerol in 500 g water. The boiling point of this solution is 100.42?C. How much quantity of glycerol was dissolved to form this solution? (For water, Kb = 0.512 k kg mol-1)

ELECTROCHEMISTRY

Question 1.
What is meant by ‘limiting molar conductivity’?

Question 2.
Express the relation between conductivity and molar conductivity of a solution held in a cell.
Question 3.
What is the effect of catalyst on:
(i) Gibbs energy (ΔG) and
(ii) activation energy of a reaction?

Question 4.
What is the effect of adding a catalyst on
(a) Activation energy (Ea), and
(b) Gibbs energy (AG) of a reaction?

Question 5.
Two half cell reactions of an electrochemical cell are given below :
$MnO^-_4(aq) + 8H^+ (aq) + 5e^- \rightarrow Mn^{2+} (aq) + 4H_2O (l)$, $E° = + 1.51$ V
$Sn^{2+} (aq) \rightarrow 4\ Sn^{4+} (aq) + 2e^-$, $E° = + 0.15$ V
Construct the redox equation from the two half cell reactions and predict if this reaction favours formation of reactants or product shown in the equation.
Question 6.
Express the relation among the cell constant, the resistance of the solution in the cell and the conductivity of the solution. How is the conductivity of a solution related to its molar conductivity?
Question 7.
Given that the standard electrode potentials (E°) of metals are :
$K^+/K = -2.93$ V, $Ag^+/Ag = 0.80$ V, $Cu^{2+}/Cu = 0.34$ V,
$Mg^{2+}/Mg = -2.37$ V, $Cr^{3+}/Cr = -0.74$ V, $Fe^{2+}/Fe = -0.44$ V.
Arrange these metals in increasing order of their reducing power.

Question 8
The chemistry of corrosion of iron is essentially an electrochemical phenomenon. Explain the reactions occurring during the corrosion of iron in the atmosphere.

Question 9
Determine the values of equilibrium constant (K_c) and ΔG° for the following reaction :
$Ni(s) + 2Ag^+ (aq) \rightarrow Ni^{2+} (aq) + 2Ag(s)$,
$E° = 1.05$ V
($1F = 96500$ C mol^{-1})

Question 10.
The molar conductivity of a 1.5 M solution of an electrolyte is found to be 138.9 S cm2 mol-1. Calculate the conductivity of this solution.

Question 11.
A zinc rod is dipped in 0.1 M solution of $ZnSO_4$. The salt is 95% dissociated at this dilution at 298 K. Calculate the electrode potential.
[$E°_{Zn^{2+}/Zn}$ = – 0.76 V]

Question 11.
Write the reactions taking place at cathode and anode in lead storage battery when the battery is in use. What happens on charging the battery ?

Question 12.
The conductivity of 0.20 M solution of KCl at 298 K is 0.025 S cm^{-1}. Calculate its molar conductivity.
Question 13.
The standard electrode potential (E°) for Daniel cell is +1.1 V. Calculate the ΔG° for the reaction
$Zn(s) + Cu^{2+}(aq) \rightarrow Zn^{2+}(aq) + Cu(s)$
(1 F = 96500 C mol^{-1}).

Question 14.
The conductivity of 0.001 M acetic acid is 4×10^{-5} S/cm. Calculate the dissociation constant of acetic acid, if molar conductivity at infinite dilution for acetic acid is 390 S cm^2/mol.

MULTIPLE CHOICE QUESTIONS

Choose the correct answer:

1. The root cell of a wheat plant has 42 chromosomes. What would be the number of chromosomes in the synergid cell?

(a) 7 (b) 14 (c) 21(d) 28.

2.In Banana edible part is:

(a) Fleshy epicarp (b) Rudimentary mesocarp and fleshy endocarp

(c) Pericarp (d) Rudimentary endocarp and fleshy mesocarp

3 Egg apparatus consists of

(a)Egg (b) Egg and polar nuclei (c) Egg and synergids (d) Egg and antipodal cells.

4. Endosperm of flowering plants develops from:

(a) Haploid nucleus (b) Diploid nucleus (c) Triploid nucleus (d) Tetraploid nucleus.

5. Persistent nucellus in black pepper is called

(a) Pericarp (b) Perisperm(c) Primary endospermic nucleus

(d) Endosperm

6. In a monocot, endosperm cells have24 chromosomes. What shall be the chromosome number in embryo:

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

7. Secondary nucleus present in the middle of embryo sac is:

(a) Tetraploid (b) Triploid (c) Diploid (d) Haploid.

8.In nature cleistogamous flowers are:

(a) Wind pollinated (b) Bird pollinated (c) Self-pollinated (d) Insect pollinated

9.Triploid tissue in angiosperms is:

(a) Nucellus (b) Endosperm (c) Endothecium (d) Tapetum.

10. The outermost layer of maize endosperm is known as:

(a) Perisperm (b) Aleurone (c) Tapetum Endothecium

11. Through which cell of the embryo sac, does the pollen tube enter the embryo sac?

(a) Egg cell (b) Central cell (c) Persistent synergid (d) degenerated synergid.

12. Double fertilisation involves:

(a) Syngamy + triple fusion (b) Double fertilisation (c) Development of antipodal cell (d) None of the above.

ASSERTION TYPE QUESTIONS

These questions consist of two statements each, printed as Assertion and Reason. While answering these questions, you are requested to choose any one of the following four responses.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
B. If both Assertion and Reason are true but reason is not the correct explanation of Assertion.
C. If Assertion is true but Reason is false.
D. If both Assertion and Reason are false.

1. Assertion: Megaspore mother cell undergoes meiosis to produce four megaspores.
   Reason: Megaspore mother cell and megaspores both are haploid.
2. Assertion: Insects visit flowers to gather honey.
   Reason: Attraction of flowers prevents the insects from damaging the parts.
3. Assertion: 7-celled 8- nucleate and monosporic embryo sac is called polygonum type of embryo sac.
   Reason: It was discovered by Hofmeister for the first time in Polygonum.
4. Assertion: Seed disposal by wind is called as anemochory.
   Reason: The seeds are light, minute and may be winged.
5. Assertion: Ovule after fertilisation forms the fruit.
   Reason: The fruit contains diploid endosperm.
6. Assertion: Continued self-pollination generation after generation results in pure line formation.
   Reason: By continued self-pollination, plants become pure or homozygous for its characters.
7. Assertion: Cross pollination in true genetic sense within species is called xenogamy.
   Reason: When there is cross pollination, resultant hybrid is a combination of characters of two plants.
8. Assertion: The first part of the dicot embryo to appear above ground is the leaf.
   Reason: Leaves increase the size of plants.
9. Assertion: If an endosperm cell of angiosperm contains 24 chromosomes, the number of chromosomes in the cell of root will be 16.
   Reason: As the endosperm is triploid and root cells are diploid, the chromosome number in each of root cell will be 16.
10. Assertion: Some fruits are seedless or contain empty or non-viable seeds.
    Reason: They are produced without fertilisation.
11. Assertion: Red colour of flowers attracts butterflies and wasps, but not bees.
    Reason: Bees are colour-blind to red.
12. Assertion: Seeds fail to germinate at very low and high temperatures.
    Reason: Seed sown deep into the soil fails to germinate.

SHORT ANSWER QUESTIONS.

1. Gynoecium of a flower may be apocarpous or syncarpous. Explain with the help of an Example each.
2. Mention the ploidy of the different types of cells present in the female gametophyte of an Angiosperm.

3. Name all the haploid cells present in an unfertilised mature embryo sac of a flowering plant. Write the total number of cells in it.

4. Mention one advantage and a disadvantage of a cleistogamous flower.

5. Explain the mechanism of pollination in marine /seagrass like Zostera.

6. Write the cellular contents carried by the pollen tube. How does the pollen tube gain its entry into the embryo sac?

7. Name the product of fertilisation that forms the kernel of coconut. How does the kernel differ from coconut water?

8. You are given caster and bean seeds. Which one of the two, would you select to observe the endosperm?

9. Name the type of fruit, apple is categorised under and why? Mention two other examples, which belong to the same category as apple.

10. It is said apomixes is a type of asexual reproduction. Justify.

11. If you squeeze a seed of orange, you might observe many embryos of different sizes. How is it possible? Explain.

12.Name and explain the mechanism by which the seeds from hybrid plants are developed that are able to retain the desired hybrid characters in the progeny.

THREE MARK QUESTIONS

1. Where are the following structures present in a male gametophyte of angiosperms? Mention the function of each of them.
2. Do all pollen grains remain viable for the same length of time? Support your answer with two suitable examples.
3. Explain the different modes of pollination that can occur in a chasmogamous flower.
4. Write the differences between wind-pollinated and insect pollinated flowers. Give examples of each type.
5. Majority of angiosperms have hermaphrodite flowers, but self-pollination is discouraged by them. Explain any three outbreeding devices that they have developed to achieve it.
6. In plant breeding experiments, pistillate flowers are not emasculated, but are still bagged. Explain.
7. Differentiate between parthenocarpy and parthenogenesis. Give one example of each.
8. State what apomixis is. Comment on its significance. How can it be commercially used?
9. Apomixis resembles asexual reproduction as well as mimics sexual reproduction in plants. Explain the help of a suitable example.
10. Parthenocarpy and apomixis have been observed in some plants. Give an example of each. State a similarity and a difference observed between the two processes.

LONG ANSWER TYPE QUESTION 5 MARKS

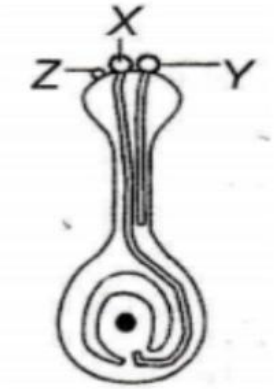
1. (a) Describe any two devices in a flowering plant, which prevent both autogamy and geitonogamy.
   (b)Explain the events up to fertilisation after the pollen tube enters one of the synergids in an ovule of an angiosperm

2. (a) when a seed of an orange is squeezed, many embryos, instead of one, are observed. Explain how it is possible.

(b) Are these embryos genetically similar or different? Comment.

DIAGRAM BASED QUESTION

1. Read the following and answer any four questions from (1) to (v) given below:
   Cross pollination is the transfer of pollen grains from one flower to the stigma of a genetically different flower. It is performed with the help of an external agency which may be abiotic (Eg., wind, water) or biotic (eg.; insects, birds, bats, snails). The diagram shows the carpel of an insect pollinated flower.



i. The given diagram shows the carpel of an insect pollinated flower. What is the most likely reason for the non-germination of pollen grain Z?

(a) Pollen grains X and Y were brought to the stigma earlier, therefore, their germination inhibited the germination of pollen grain Z.

(b) Pollen grain Z was brought to the flower by wind, while pollen grains X and Y were brought to the flower by insects.

(c) Pollen grain Z lacks protrusions that allow it to adhere properly onto the stigma surface.

(d) Pollen grain Z comes from a flower of an incompatible species.

ii. Pollination by insect is called

a. entomophily

b. chiropterophily

c. anemophily

d. ornithophily

iii. Out of the following characters which one is not applicable for wind pollination

a. Stamen hang out of the flowers exposing the anthers to the wind

b. the pollen grains are tiny and light

c. the flowers are nectar less

d. the petals are brightly coloured

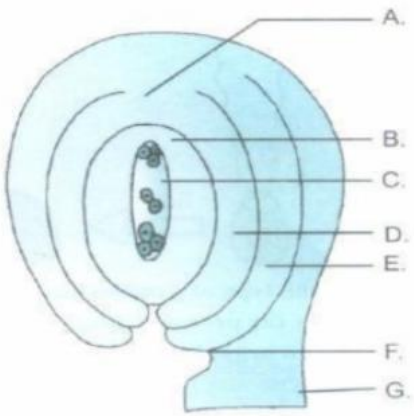
iv. How many of the above characteristics are of insect pollinated flower

a. 1 b.2 c. 3 d. 4

v. Pollen kit is generally found in

a. anemophilous flowers b. Entomophilous flowers c. ornithophilous flowers d. malacophilous flowers

2.



The diagram of an angiosperm ovule is presented above.

(a) Give the technical term for ovule.

(b) Identify and name the part that
(i) attaches the ovule to the placenta
(ii) remains as perisperm in some seeds.
(iii) forms the testa of seed.
(iv) represents the basal part of the ovule.
(v) represents the female gametophyte.

ANSWER KEY

MULTIPLE CHOICE QUESTION –ANSWERS

1. (D) 2. (D) 3. (C) 4. (C) 5. (C) 6. (B) 7. (C) 8. (C) 9. (B) 10. (B) 11. (D) 12. (A).

ASSERTION –REASON TYPE QUESTIONS--ANSWERS

1.C 2.C 3.C 4.A 5. D 6.A 7.A 8.C 9.C 10.A 11.A 12.B.

SHORT ANSWER TYPE TWO MARKS QUESTIONS –ANSWERS.

1. Apocarpous pistil:
When the carpels of a multicarpellary pistil are free, it is called an apocarpous pistil.

Eg. Michelia.

Syncarpous pistil:

When the carpels of a multicarpellary pistil are fused together, it is called a syncarpous pistil.

Eg. Papaver, brinjal.

2. (1). Antipodal cell—Haploid.
(2) Central cell—Diploid (when the two polar nuclei fuse to form a secondary nucleus)

(3). Female gamete (egg cell)—Haploid.

(4) Synergids- Haploid.

3. One female gamete, two synergids, and three antipodal cells are the haploid cells.

MCQ

Question 1.

Ovulation in the human female normally takes place during the menstrual cycle

(a) at the mid secretory phase

(b) just before the end of the secretory phase

(c) at the beginning of the proliferative phase

(d) at the end of the proliferative phase.

Question 2.

After ovulation Graafian follicle regresses into

(a) corpus atresia

(b) corpus callosum

(c) corpus luteum

(d) corpus albicans

Question 3.

Immediately after ovulation, the mammalian egg is covered by a membrane known as

(a) chorion

(b) zona pellucida

(c) corona radiata

(d) vitelline membrane.

Question 4.

Which part of the sperm plays an important role in penetrating the egg membrane?

(a) Allosome

(b) Tail

(c) Autosome

(d) Acrosome

Question 5.

Which among the following has 23 chromosomes?

(a) Spermatogonia

(b) Zygote

(c) Secondary oocyte

(d) Oogonia

Question 6.

Which of the following hormones is not secreted by human placenta?

(a) hCG

(b) Estrogens

(c) Progesterone

(d) LH

Question 7.

The nutritive cells found in seminiferous tubules are

(a) Leydig's cells

(b) atretic follicular cells

(c) Sertoli cells

(d) chromaffin cells.

Question 8.

Sertoli cells are regulated by the pituitary hormone known as

(a) LH

(b) FSH

(c) GH

(d) prolactin.

Question 9.

In human adult females oxytocin

(a) stimulates pituitary to secrete vasopressin

(b) causes strong uterine contractions during parturition

(c) is secreted by anterior pituitary

(d) stimulates growth of mammary glands.

Question 10.

At what stage of life is oogenesis initiated in a human female?

(a) At puberty

(b) During menarche

(c) During menopause

(d) During embryonic development

Question 11.

Delivery of developed foetus is scientifically called

(a) parturition

(b) oviposition

(c) abortion

(d) ovulation.

ASSERTION-REASON QUESTIONS

In the following questions a statement of assertion and reason is correct explanation for assertion correct answer out of the following choices.

a. Both assertion and reason are true, and reason is the correct explanation of assertion

b. Both assertion and reason are true, but reason is not the correct explanation of assertion

c. Assertion is true but reason is false

d. Both assertion and reason are false.

1. Assertion-The uterus is shaped like an inverted pear.

   Reason- The inner glandular layer lining the uterine cavity is called as myometrium.

2. Assertion-The middle piece of the sperm is called is powerhouse.

   Reason- Numerous mitochondria in the middle piece produce energy for the movement of the tail.

3. Assertion-All sperms released at a time do not fertilise the ovum.

   Reason-Fertilisation occur only when ovum and sperm fuse at the ampullary-isthmic junction.

4. Assertion-The embryo with 8 to 16 blastomeres is called a morula.

   Reason-The morula continuously divides to transform into trophoblast.

5. Assertion-The endometrium undergoes cyclic changes during the menstrual cycle.

   Reason- Perimetrium contracts strongly during delivery of the baby.

6. Assertion- Signals for parturition originate from placenta and the developed foetus.

   Reason- Relaxin is released by the placenta.

7. Assertion-the female gamete is produced at the time of puberty.

   Reason- gonadotropin releasing hormone controls the process of oogenesis.

8. Assertion- the fertilized egg contains 23 pairs of chromosomes

   Reason-zygote is formed by the fusion of egg and the sperm.

9. Assertion-Colostrum produced in first 2-3 days after parturition is rich in nutrients.

Reason-placenta induces the signals for expulsion of the fully developed.

Short Answer type (2 or 3 marks)

1. At what stage of life is oogenesis initiated in a human female? When does the oocyte complete oogenesis?
2. Give a scientific term for the following:
   a) Layer of follicle cells that envelops the egg outside the zona pellucida.
   b) The finger-like projection appearing on the trophoblast after implantation.
3. a) How many lobules are found in each testis?
   b) What is the function of Bulbourethral glands?
4. What is pregnancy hormone? Why is it so called? Name two sources of this hormone in a human female.
5. Name the hormone which stimulates the secretion of ovarian hormones. What would happen if the blood concentration of ovarian hormones increases?
6. Explain the formation of placenta after implantation in a human female.
7. What is the role of following hormones in the female reproductive cycle:
   1) FSH
   2) LH
   3) Progesterone
8. a) In which part of the human female reproductive system do the following events take place.
   I. Release of 1st polar body
   II. Release of 2nd polar body
   III. Fertilization
   IV. Implantation
   b) From where do the signals for parturition originate and what does maternal pituitary release for stimulating uterine contractions for childbirth.
9. Define spermatogenesis. Where does it occur?
10. Write the location and functions of Sertoli cells in humans?
11. Differentiate between spermiogenesis and spermiation.
12. How does colostrum provide initial protection against diseases to new born infants? Give one reason.
13. State the fate of the trophoblast of a human blastocyst at the time of implantation and that of the inner cell mass immediately after implantation.
14. What is ovulation? What happens to the Graafian follicle after ovulation?

Long Answer (5marks)

1. What is spermatogenesis? Briefly describe the process of spermatogenesis.

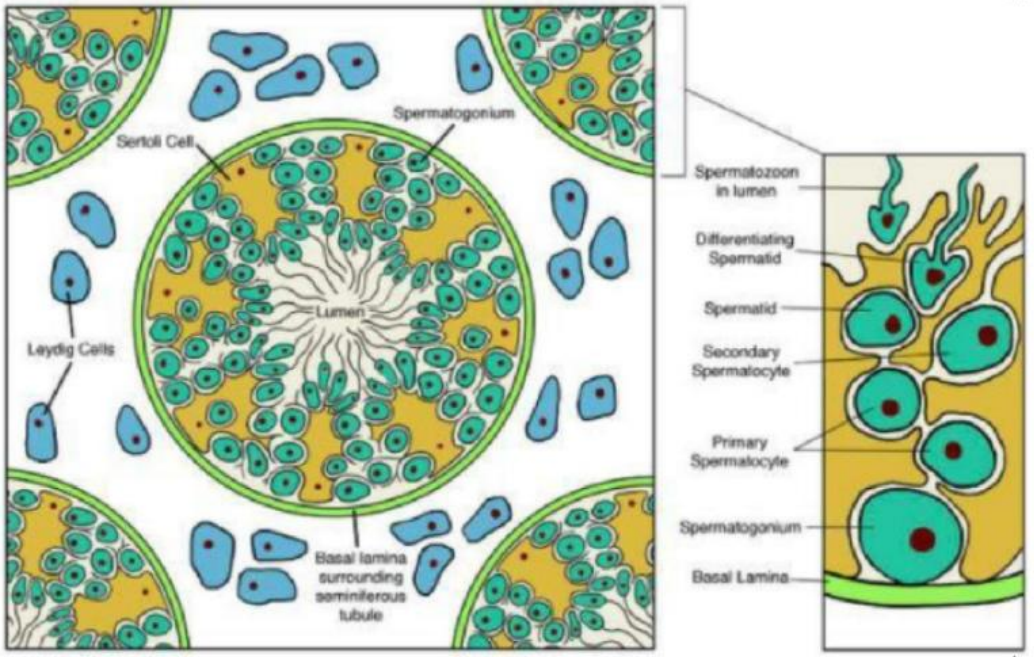
2. Briefly describe the process of oogenesis.

3. Describe the roles of pituitary and ovarian hormones during the menstrual cycle in a human female.

4. Explain in detail the various developmental stages of the zygote until implantation with suitable diagrams.

Diagram based/case based/passage-based questions

Q1
.



Study the figure given and answer the questions that follows: (answer any four) 1x4

i) The function of Sertoli cell is:

a) Nutrition to the sperms

b) Nutrition to the Leydig cell

c) Nutrition to the basal lamina

d) Excretion from sperm

ii) Cross section of testes shows:

a) Seminiferous tubules with different stages of development of sperm

b) Development of Sertoli cells

c) Many testicular lobules

d) Many spermatogonia

iii) Pick out and name the cells that undergo spermiogenesis.

a) Spermatogonia undergo spermiogenesis

b) Spermatids undergo spermiogenesis

c) Secondary spermatocytes undergo spermiogenesis

d) Primary spermatocytes undergo spermiogenesis.

iv) How many sperms will be produced from 50 primary spermatocytes?

a) 400 sperms

b) 1000 sperms

c) 200sperms

d) 100sperms

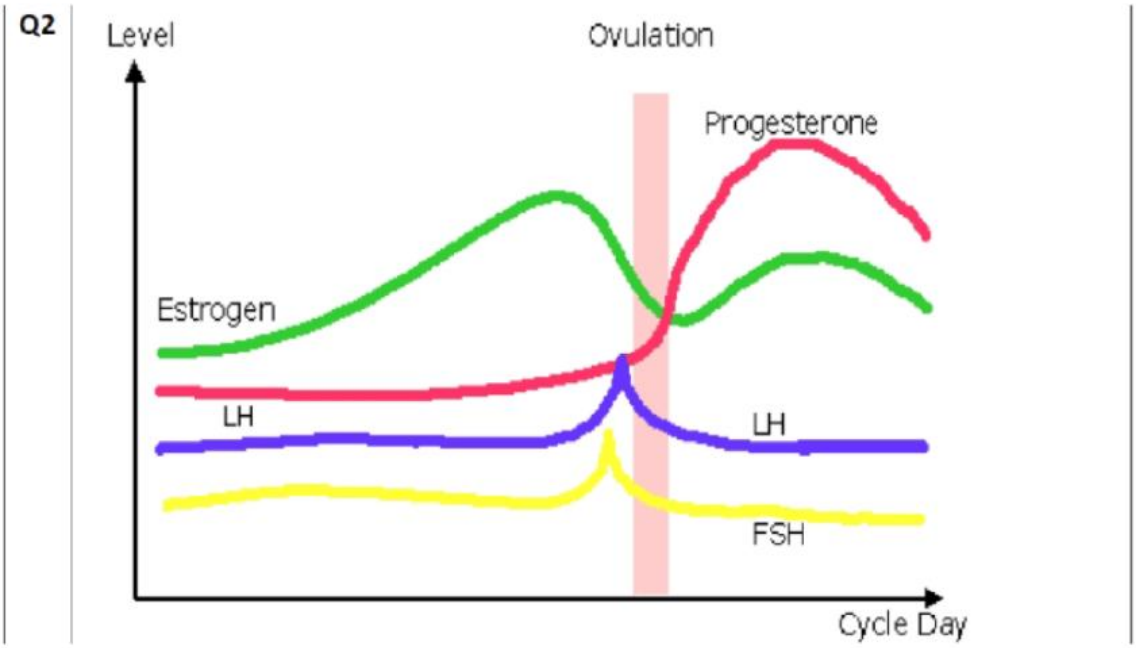
v) Testosterone is secreted which cell:

a) Sertoli cell

b) Spermatids

c) Leydig cells

d) Spermatogonia



Study the graph given and answer any four questions:1x4

i) Name the ovarian and pituitary hormones that are responsible for development of follicles.

a) Estrogen and LH

b) Estrogen and progesterone

c) FSH and LH

d) Progesterone and FSH

ii) In which phase of menstrual cycle corpus luteum is formed and names the hormone it secretes.

a) Ovulatory phase and progesterone

b) Luteal phase and progesterone

c) Follicular phase and progesterone

d) Menstrual phase and progesterone

iii) What are the three phases of oogenesis?

a) Multiplication phase, growth phase and reproductive phase

b) Multiplication phase, growth phase and maturation phase

c) Growth phase, maturation phase and secretory phase

d) Secretory phase, growth phase and maturation phase

iv) The phase in woman's life when ovulation and menstruation stops is called:

a) Menarche

b) Puberty

c) Menopause

d) Reproduction

v) Withdrawing of which hormone causes menstruation?

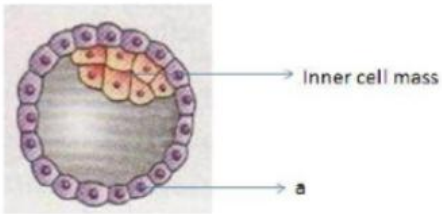
a) Estrogen

b) Progesterone

c) FSH

d) LH

Q3 Study the diagram and answer any four questions:1x4



i) Name the stage of human embryo the figure represents.

a) Gastrula

b) Blastocyst

c) Oocyte

d) Primary oocyte

ii) Where are the stem cells located in this embryo?

a) Inner cell mass

b) Blastocoel

c) Blastomeres

d) Blastocyst

iii) Write the name of "a"

a) Blastomere

b) Trophoblast

c) Morula

d) Gastrula

iv) Which layer gets attached to the cells of endometrium and names the part which develops into embryo?

a) Trophoblast and inner cell mass

b) Trophoblast and ectoderm

c) Ectoderm and endoderm

d) Trophoblast and mesoderm

v) How is the placenta connected to the embryo?

a) By chorionic villi

b) By umbilical cord

c) By inner layer

d) By trophoblast

MCQs

Q.1. Tubectomy is a method of sterilization in which

(a) one fallopian tube is removed

(b) both fallopian tubes are removed

(c) small part of fallopian tube is removed

(d) small part of vas deferens is removed

Q.2. Following statements are given regarding MTP.

(i) MTPs are generally advised during first trimester

(ii) MTPs are used as a contraceptive method

(iii) MTPs are always surgical

(iv) MTPs require the assistance of qualified medical personnel

Choose the correct option.

(a) (ii) and (iii)

(b) (i) and (iii)

(c) (i) and (iv)

(d) (i) and (ii)

Q.3. The method of directly injecting a sperm into ovum in Assisted Reproductive Technology is called

(a) GIFT

(b) ZIFT

(c) ICSI

(d) ET

Q.4. Increased IMR and decreased MMR in a population will

(a) cause rapid increase in growth rate

(b) result in decline in growth rate

(c) not cause significant change in growth rate

(d) result in an explosive population

Q.5. In-vitro fertilization involves transfer of ____ into the fallopian tube.

(a) embryo up to eight cell stage

(b) embryo of thirty-two cell stage

(c) zygote

(d) either zygote or embryo up to eight cell stage

Q.6. Intensely lactating mothers do not generally conceive due to the

(a) suppression of gonadotropins

(b) hyper secretion of gonadotropins

(c) suppression of gametic transport

(d) suppression of fertilisation

Q.7. Sterilisation techniques are generally fool proof methods of contraception with least side effects. Yet, this is the last option for the couples because

(i) it is almost irreversible

(ii) of the misconception that it will reduce sexual urge

(iii) it is a surgical procedure

(iv) of lack of sufficient facilities in many parts of the country

Choose the correct option.

(a) (i) and (iii)

(b) (ii) and (iii)

(c) (ii) and (iv)

(d) (i), (ii), (iii) and (iv)

Q.8. Which of the following STDs are caused by bacteria?

(a) AIDS and Genital Herpes

(b) Syphilis and gonorrhoea

(c) Trichomoniasis and scabies

(d) All of these

Q.9. Which of the followings is example of hormone releasing IUDs?

(a) CuT and Multilobed 375

(b) LNG-20 and Progestasert

(c) Lippe's loop

(d) Both (b) and (c)

Q10.A national level approach to build up a reproductively healthy society was taken up in our country in

(a) 1950s

(b) 1960s

(c) 1980s

(d) 1990s

Q.11. Emergency contraceptives are effective if used within

(a) 72 hrs of coitus

(b) 72 hrs of ovulation

(c) 72 hrs of menstruation

(d) 72 hrs of implantation

Q.12. Choose the right one among the statements given below.

(a) IUDs are generally inserted by the user herself

(b) IUDs increase phagocytosis reaction in the uterus

(c) IUDs suppress gametogenesis

(d) IUDs once inserted need not be replaced

Q.13. IUDs release copper ions to

(a) prevent ovulation

(b) suppress mortality

(c) increase phagocytosis of sperm

(d) make the uterus unsuitable for implantation.

Q.14. From the sexually transmitted diseases mentioned below, identify the one which does not specifically affect the sex organs.

(a) Syphilis
(b) AIDS
(c) Gonorrhoea
(d) Genital warts

Q.15. Condoms are one of the most popular contraceptives because of the following reasons.

(a) These are effective barriers for insemination

(b) They do not interfere with coital act

(c) These help in reducing the risk of STDs

(d) All of the above

Q.16. Which of the following is/are barrier method of contraception?

(a) Rhythm method/Periodic abstinence

(b) Lactational amenorrhea

(c) Withdrawal method

(d) None of these

Q.17. Which of the following is not a cause of population explosion in India?

(a) Better health care

(b) Increased IMR

(c) Decline MMR

(d) Increased population of reproductive age

Q.18. Choose the correct statement regarding the ZIFT procedure.

(a) Ova collected from a female donor are transferred to the fallopian tube to facilitate zygote formation.

(b) Zygote is collected from a female donor and transferred to the fallopian tube

(c) Zygote is collected from a female donor and transferred to the uterus

(d) Ova collected from a female donor and transferred to the uterus

Q.19. The correct surgical procedure as a contraceptive method is

(a) ovariectomy

(b) hysterectomy

(c) vasectomy

(d) castration

Q.20. Diaphragms are contraceptive devices used by females. Choose the correct option from the statements given below:

(i) They are introduced into the uterus

(ii) They are placed to cover the cervical region

(iii) They act as physical barriers for sperm entry

(iv) They act as spermicidal agents

Choose the correct option:

(a) (i) and (ii)

(b) (i) and (iii)

(c) (ii) and (iii)

(d) (iii) and (iv)

Q.21. Lactational amenorrhoea means

(a) absence of menstruation during pregnancy

(b) absence of menstruation during lactation

(c) excessive bleeding during menstruation

(d) no production and secretion of milk

Q.22. Medical Termination of Pregnancy is safe up to

(a) 8 weeks of pregnancy

(b) 12 weeks of pregnancy

(c) 18 weeks of pregnancy

(d) 24 weeks of pregnancy

ASSERTION-REASON QUESTIONS

Directions: In the following questions, a statement of assertion is followed by a statement of reason.

Mark the correct choice as:

(a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

(c) If Assertion is true but Reason is false.

(d) If both Assertion and Reason are false.

1. Assertion: Amniocentesis is often misused

   Reason: Amniocentesis is meant for determining the genetic disorders in the foetus, but it is being used to determine the sex of the foetus, leading to the death of the normal female foetus.

2. Assertion: Cu-T and Cu-7 do not suppress sperm-motility.

   Reason: Hormones released by them do not affect sperm motility.

3. Assertion: Pills are very effective contraceptive methods with lesser side effects.

   Reason: Pills inhibit ovulation and implantation as well as retard entry of sperms.

4. Assertion: In zygote intra fallopian transfer the zygote is transferred to the fallopian tubes of the female.

   Reason: ZIFT is an in vivo fertilisation method.

5. Assertion: Artificial insemination is the method of introduction of semen inside the female.

   Reason: This technique is used in those cases where males have low sperm count.

6. Assertion: IUT is the transfer of embryo with more than 8 blastomeres into the fallopian tubes.

   Reason: This is a very popular method of forming embryos in-vivo.

7. Assertion: Saheli, the new oral contraceptive for the females, contains a steroidal preparation.

   Reason: It is "once in a day" pill with very few side effects.

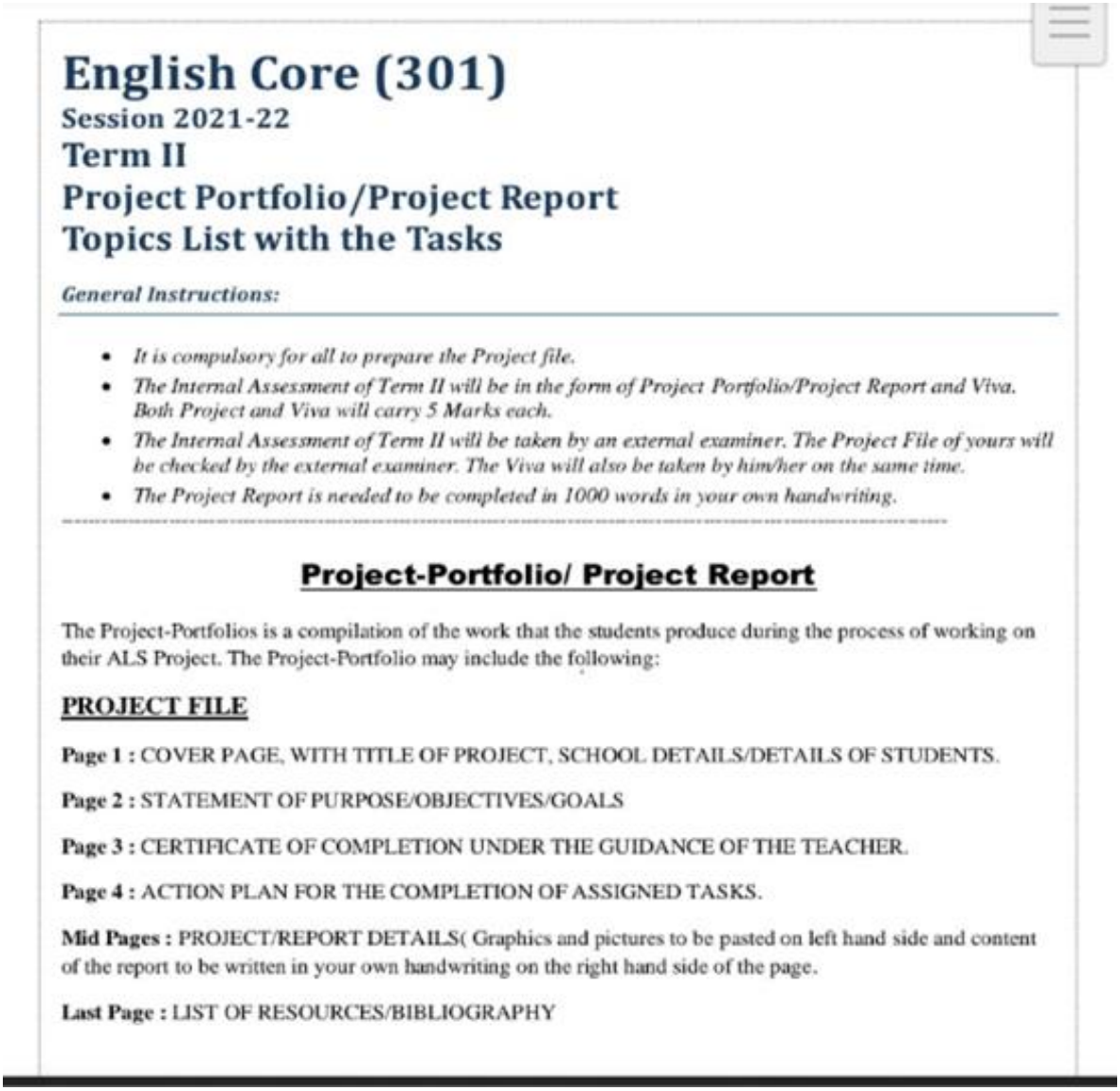
SHORT ANSWER TYPE QUESTIONS

1. Lactational Amenorrhea is a method of contraception. Justify. What is the maximum effectiveness of this method in terms of period/duration?
2. How are Copper releasing IUDs different from Hormone releasing IUDs?
3. Give another name for sexually transmitted diseases. Name two sexually transmitted diseases which are curable and two diseases which are not curable.
4. Differentiate between Vasectomy and Tubectomy.
5. Mention the various precautions one has to take in order to protect himself/herself from STDs.
6. When is the medical termination of pregnancy advised by the doctors?
7. What are the important features of an ideal contraceptive?
8. Justify the statement, "All reproductive tract infections are sexually transmitted diseases, but all sexually transmitted diseases are not reproductive tract infections."
9. Justify the ban on amniocentesis in our country?
10. Name the hormone composition of oral contraceptives used by a human female. Explain how it act as a contraceptive?

LONG ANSWER TYPE QUESTIONS

11. Why should sex education be introduced to school-going children? List any five reasons.
12. Suggest some methods to assist infertile couples to have children.
13. List the objectives of Reproductive and Child Health Care Programmes (RCH

HOLIDAY HOMEWORK
CLASS XII
ENGLISH



English Core (301)

Session 2021-22

Term II

Project Portfolio/Project Report

Topics List with the Tasks

General Instructions:

- *It is compulsory for all to prepare the Project file.*
- *The Internal Assessment of Term II will be in the form of Project Portfolio/Project Report and Viva. Both Project and Viva will carry 5 Marks each.*
- *The Internal Assessment of Term II will be taken by an external examiner. The Project File of yours will be checked by the external examiner. The Viva will also be taken by him/her on the same time.*
- *The Project Report is needed to be completed in 1000 words in your own handwriting.*

Project-Portfolio/ Project Report

The Project-Portfolios is a compilation of the work that the students produce during the process of working on their ALS Project. The Project-Portfolio may include the following:

PROJECT FILE

Page 1 : COVER PAGE, WITH TITLE OF PROJECT, SCHOOL DETAILS/DETAILS OF STUDENTS.

Page 2 : STATEMENT OF PURPOSE/OBJECTIVES/GOALS

Page 3 : CERTIFICATE OF COMPLETION UNDER THE GUIDANCE OF THE TEACHER.

Page 4 : ACTION PLAN FOR THE COMPLETION OF ASSIGNED TASKS.

Mid Pages : PROJECT/REPORT DETAILS(Graphics and pictures to be pasted on left hand side and content of the report to be written in your own handwriting on the right hand side of the page.

Last Page : LIST OF RESOURCES/BIBLIOGRAPHY

NOTE: Prepare project on any one of the following topics under the guidance of your respective english teacher.

PROJECT TOPICS

You have to make pictorial as well as graphical presentation on left hand side of the file. All data should be collected authentically and hand written essay of 1000 words on right side.
TOPIC 1 -

The Last Lesson • Elaborate the theme of Linguistic Chauvinism and Procrastination and importance of Time Management.
• Collect data about countries where people have these tendencies.
• How do they give importance to their mother tongue?

TOPIC 2 -

The Lost Spring • Collect data about various slums in our country and living conditions there. Also elaborate whether children have access of education there.
• How children are engaged in various kinds of

TOPIC 3-
My Mother At Sixty-six • Explain the importance of parents in the family.
• On the context of the poem how do you love and care your mother?
• Collect data about condition of old age homes in our country, living condition there, number of old age homes

TOPIC 4 - Keeping Quiet • Collect reasons of environmental degradation.
• How far is man harming the Earth?
• Focus on relevance of meditation and introspection.

TOPIC 5- The Third Level • Why 'hurry and worry' are trademarks of modern men?
• How far today life is insecure? Why do modern men want to escape?
• Interview your school principal or the counselor to know the problems (stress, fear, anxiety etc.) faced by the students in the virtual platform

TOPIC 6 - • Collect all about different kinds of freedom movements of our country.
• What was the importance of Champaran Movement?
• You can write about autobiography of any freedom fighter

NOTE: Prepare any four of the following topics for listening activity (ASL).
TOPIC 7. Prepare the following topics for ASL.
(a) Corruption in India
(b) Digital India
(c) Make in India
(d) India Of My Dreams
(e) Indian Tourism
(f) India : The Land of Great Personalities
(g) Poverty in India
(h) My Favourite Book
(i) Impact of Smart Phones
(j) Online Learning

HOME SCIENCE

Project work:

1. Market survey of any five processed food, their packaging and label information.
2. Write the merits and demerits of all the packaging material used.

Note: Learn all the work done in the class.

PAINTING

Painting:

- Hand made Rangoli
- Lippan Art on Card Board

HIND. MUSIC VOCAL

Project File:

1. Introduction of RaagBhairav
2. Notation of DrutKhayal of RaagBhairav
3. Introduction of Jhaptaal
4. Leykari of Jhaptaal (Thah(Ekgun),Dogun,Tigun,Chaugun).
5. Introduction of RoopakTaal
6. Leykari of RoopakTaal (Thah(Ekgun),Dogun,Tigun,Chaugun)

PHYSICAL EDUCATION HOLIDAY HOMEWORK

[CLASS XII]

SESSION : 2023-24

CHAPTER :1 (MANAGEMENT OF SPORTING EVENTS)

Fill in the blanks.

1. The second bye is given to the …… team of the upper half in a knock-out tournament.

2. Tabular method is used for fixtures in a ……. tournament.

3. Number of byes in a single knock-out tournament for 29 teams will be ……. .

4. If 25 teams are participating in a single knock-out tournament,…… teams will be kept in Ist Quarter.

5. The fourth bye is given to the……..team of the upper half in knock-out tournament.

Choose the correct answer

1. How many byes will be given if 19 teams are participating in a knock -out tournament ?

a) 12

b) 13

c) 14

d) 15

2. How many methods can be used for preparing fixtures in a league tournament?

a) 2
b) 4
c) 3
d) 5

3. How many teams will be placed in IIIrd quarter if 31 teams are participating in a knock-out tournament ?

a) 6
b) 7
c) 8
d) None

4. Which one of the following methods is not used for preparing fixtures in league or round robin tournament?

a) Staircase method
b) Cyclic method
c) Combination method
d) Tabular method

5. Match the List-A with B and select the correct answer from the code given below.

	List-A		List-B
a)	Cyclic	i)	Resolve Dispute
b)	Technical committee	ii)	Fixtures are made like a ladder
c)	Staircase	iii)	To meet directly in quarter final
d)	Special Seeding	iv)	League Tournament

	Code
1)	d-III , c-II , b-I , a-IV
2)	d- II , c-III , b-I , a- IV
3)	d-III , c- II , a-I , b- IV
4)	d-IV , b-III, c-II , a-I

6. Given below are the two statements labelled Assertion (A) and Reason (R).

A. Assertion (A): Planning is the foremost function in sports.

B. Reason (R): Planning gives a view of future course of action.

In the context of the above statements, which one of the following is correct?
(a) Both (A) and (R) are true, (R) is the correct explanation of (A).

(b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

(c) (A) is true, but (R) is false.

(d) (A) is false, but (R) is true.

7. Which one of the following functions works as a roadmap in attaining the organizational goals?

(a) Directing

(b) Planning

(c) Controlling

(d) Staffing

8. which one of the following functions is related to the process of inspiring, guiding and instructing all the individuals of sports organization ?

a) Controlling
b) Planning
c) Directing
d) Organizing

Value Based Question

1. Once upon a time, during an athletic meet in stadium, 8 girls were on the starting line, ready for the race. With the sound of pistol, all the 8 girls started running. Hardly they had covered 10 to 15 metres, when accidentally one girl slipped and fell. Due to pain the girl started crying. As soon as the other 7 girls heard her cry; all of them stopped running. stood for a while, turned back, and ran towards her. Suddenly, the girls returned, pacified her, joined their hands together, lifted her, walked together and reached the finishing line. The officials were shocked to see such scene and unity. Quite a many eyes were filled with tears.

Based on the above passage, answer the following questions:

1. What values do they teach?

2. What quality the girls have shown by running together?

3. What was so special about the race?

Long Answer Questions

1. Draw the fixture of 21 teams on Knock-out basis.

2. Enlist the committees for organizing sports events and explain any eight committees in detail.

3. Draw a fixture of 9 teams using round robin method.

4. Elucidate the pre, during and post game responsibilities of officials of various committees for organising a sports tournament smoothly.

5. Draw a fixture of nine (9) teams on the basis of league tournament using cycle method. Explain British method to declare the winner.

Chapter : 2 (CHILDREN AND WOMEN IN SPORTS)

Give one word answers

1. Name the eating disorder in which a female athlete eats excessive amount of food and then vomits it in order not to gain weight.

2. In which disorder, the female athletes think only about food, dieting and body weight all the time ?

3. Which postural deformity is opposite to knock- knees?

4. What is the other name of Genu Varum ?

5. Which postural deformity may be found in a ‘s’ shape ?

Choose the correct answer.

1. Lateral curve in your spine is known as :

a) Kyphosis
b) Scoliosis
c) Lordosis
d) Knock – Knee

2. Lordosis is known as:

a) Lateral curvature of the spine
b) Inward curvature of the spine
c) Round upper back
d) None of these

3. Which one of the following is an eating disorder

a) Osteoporosis
b) Bulimia Nervosa
c) Amenorrhoea
d) None of these

4. Which one of the following corrective exercises is beneficial for correction of knock -knees?

a) Rope skipping
b) Horse riding
c) Walking on the toes
d) All of the above

5. In bow legs, there is / are:

a) Wide gap between the knees
b) Plain foot sole
c) Kness colliding with each other
d) Both legs curving inwards

6. In which postural deformity , the gap between the ankles goes on increasing?

a) Bow legs
b) Knock-knees
c) Flat foot
d) None of these

Short Answer Questions:

1. Suggest four corrective measures for flatfoot.

2. Mention the corrective measures related to kyphosis.

3. Discuss the causes and remedies of round shoulders.

4. Write a short note on eating disorders.

Long Answer Questions:

1. What is osteoporosis? Explain various factors which usually lead to osteoporosis among women athletes.

2. What is amenorrhoea? Elucidate its types and factors which may inspire the chances of amenorrhoea.

Chapter : 3 (YOGA AS PREVENTIVE MEASURE FOR LIFESTYLE DISEASE)

State True or False:

1. Tadasana is performed in sitting position .
2. Shavasana is performed in supine position.
3. Tadasana is performed in supine position.
4. Sheetli pranayama is used to reduce the heat of the body .
5. A person suffering from joint pain should perform vajrasana.

Choose the correct answer:

1. Which one of the following asanas is not performed in standing position?
   (a) Tadasana
   (b) Ardhchakrasana
   (c) Sukhasana
   (d) Katichakrasana
2. Which asana is like a "plough"?
   (a) Vajrasana
   (b) Trikonasana
   (c) Bhujangasana
   (d) Halasana
3. Which one of the following asanas is performed in sitting position?
   (a) Chakrasana
   (b) Sukhasana
   (c) Bhujangasana
   (d) Tadasana

4. What should be the normal blood pressure of an adult?

(a) 110/70mm Hg

(b) 140/90 mm Hg

(c) 120/80 mm Hg

(d) 140/95 mm Hg

5. In which type of lifestyle diseases our airways become blocked or narrowed causing difficulty in breathing?

(a) Obesity

(b) Asthma

(c) Diabetes

(d) Back Pain

6. The other name of Bhujangasana is:

(a) Eagle pose

(b) Cobra pose

(c) Fish pose

(d) Tree pose

7. Asthma is caused by:

(a) Smoke

(b) genetic

(c) Allergy

(d) All the above

8. According to WHO criteria, the normal BMI of an individual should be

(a) 18.5-22.5

(b) 18.5-22.9

(c) 18.5-23.9

(d) 18.5-24.9

9. Match the following diseases with the related cause:

1.	Diabetes	(a)	Accumulation of fat
2.	Hypertension	(b)	Insulin
3.	Asthma	(c)	Blood pressure
4.	Obesity	(d)	Respiratory tract

10. The following are the two statements which are labelled Assertion (A) and Reason(R).

A. Assertion (A): Diabetes is really a very dangerous lifestyle disease.

B. Reason (R): Diabetes can lead to renal failure, loss of vision, amputation of limbs and cardiovascular diseases if it is not controlled.

In the context of the above two statements, which one of the following is correct?

(a) Both (A) and (R) are true and (R) is the correct explanation of (A).

(b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

(c) (A) is true, but (R) is false.

(d) (A) is false, but (R) is true.

11. Which one of the following asana is called as “frog po

(a) Mandukasana

(b) Ardha halasana

(c) Ustrasana

(d) Yogmudrasana

Short Answer Questions:

1.Discuss the procedure of Pawanmuktasana.

2. Explain about asthma.

Long Answer Question:

1. What do you mean by diabetes. Elaborate any two asanas which are helpful in preventing and curing diabetes.

Subject:- Computer Science

Chapter-1 (Revision of Python Class XI)

Q1. Find the invalid identifier from the following

a) MyName
b) True
c) 2ndName
d) My_Name

Q2. Given the lists L=[1,3,6,82,5,7,11,92] , write the output of print(L[2:5])

Q3. Identify the valid arithmetic operator in Python from the following.

a) ?
b) <
c) **
d) and

Q4. Suppose a tuple T is declared as T = (10, 12, 43, 39), which of the following is incorrect?

a) print(T[1])
b) T[2] = -29
c) print(max(T))
d) print(len(T))

Q5. Write a statement in Python to declare a dictionary whose keys are 1, 2, 3 and values are Monday, Tuesday and Wednesday respectively

Q6. A tuple is declared as T = (2,5,6,9,8) What will be the value of sum(T)?

Q7. Name the built-in mathematical function / method that is used to return an absolute value of a number.

Q8. Identify the valid declaration of L:

L = [‘Mon’, ‘23’, ‘hello’, ’60.5’]

a) dictionary
b) string
c) tuple
d) list

Q9. If the following code is executed, what will be the output of the following code?

```
name="ComputerSciencewithPython"
print(name[3:10])
```

Q10. Given a Tuple tup1= (10, 20, 30, 40, 50, 60, 70, 80, 90).

What will be the output of print (tup1 [3:7:2])?

a) (40,50,60,70,80)

b) (40,50,60,70)
c) [40,60]
d) (40,60)

Q11. The return type of the input() function is

a) string
b) integer
c) list
d) tuple

Q12. Given the following dictionaries

```
dict_exam={"Exam":"AISSCE", "Year":2023}
dict_result={"Total":500, "Pass_Marks":165}
```

Which statement will merge the contents of both dictionaries?

a) dict_exam.update(dict_result)
b) dict_exam + dict_result
c) dict_exam.add(dict_result)
d) dict_exam.merge(dict_result)

Q13. Select the correct output of the code:

```
a = "Year 2022 at All the best"
a = a.split('2')
b = a[0] + ". " + a[1] + ". " + a[3]
print (b)
```

(a) Year . 0. at All the best
(b) Year 0. at All the best
(c) Year . 022. at All the best
(d) Year . 0. at all the best

Q14. Which of the following statement(s) would give an error after executing the following code?

```
S="Welcome to class XII"          # Statement 1
print(S)                          # Statement 2
S="Thank you"                     # Statement 3
S[0]= '@'                         # Statement 4
S=S+"Thank you"                   # Statement 5
```

(a) Statement 3
(b) Statement 4
(c) Statement 5
(d) Statement 4 and 5

Q15. What will the following expression be evaluated to in Python?

```
print(15.0 / 4 + (8 + 3.0))
```

a) 14.75

b)14.0

c) 15

d) 15.5

Q16. Neeraj has written a code to input a number and check whether it is prime or not. His code is having errors. Rewrite the correct code and underline the corrections made.

```
def prime():
    n=int(input("Enter number to check :: ")
    for i in range (2, n//2):
        ifn%i=0:
            print("Number is not prime \n")
        break
        else:
            print("Number is prime \n’)
```

Q17. (a) Given is a Python string declaration:

```
myexam="@@CBSE Examination 2022@@"
Write the output of: print(myexam[::-2])
```

(b) Write the output of the code given below:

```
my_dict = {"name": "Aman", "age": 26}
my_dict['age'] = 27
my_dict['address'] = "Delhi"
print(my_dict.items())
```

Q18. What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables **FROM** and **TO**.

```
import random
AR=[20,30,40,50,60,70];
FROM=random.randint(1,3)
TO=random.randint(2,4)
for K in range(FROM,TO+1):
    print (AR[K],end=”#“)
```

a) 10#40#70#

b) 30#40#50#

c) 50#60#70#

d) 40#50#70#

Q19. Identify the output of the following Python statements.

```
lst1 = [10, 15, 20, 25, 30]
lst1.insert( 3, 4)
lst1.insert( 2, 3)
```

print (lst1[-5])

a) 2

b) 3

c) 4

d) 20

Q20. Which of the following operator cannot be used with string data type?

a) +

b) in

c) *

d) /

Q21.is ASSERTION AND REASONING based questions. Mark the correct choice as

(a) Both A and R are true and R is the correct explanation for A

(b) Both A and R are true and R is not the correct explanation for A

(c) A is True but R is False

(d) A is false but R is True

Q21. **Assertion(A)**: List is an immutable data type

Reasoning(R): When an attempt is made to update the value of an immutable variable, the old variable is destroyed and a new variable is created by the same name in memory.

Chapter-2,3 (Functions in Python & Using Python Libraries)

Q22. Which of the following components are part of a function header in Python?

a) Function Name

b) Return Statement

c) Parameter List

d) Both a and c

Q23. Which of the following function header is correct?

a) defcal_si(p=100, r, t=2)

b) defcal_si(p=100, r=8, t)

c) defcal_si(p, r=8, t)

d) defcal_si(p, r=8, t=2)

Q24. Which of the following is the correct way to call a function?

a) my_func()

b) defmy_func()

c) returnmy_func

d) callmy_func()

Q25. What will be the output of the following Python code?

def add (num1, num2):

```
sum = num1 + num2
sum = add(20,30)
print(sum)
```

a) 50
b) 0
c) Null
d) None

Q26. What will be the output of the following code?

```
defmy_func(var1=100, var2=200):
    var1+=10
    var2 = var2 - 10
    return var1+var2
print(my_func(50),my_func())
```

a) 100 200
b) 150 300
c) 250 75
d) 250 300

Q27. What will be the output of the following code?

```
value = 50

def display(N):

    global value

    value = 25

    if N%7==0:

        value = value + N

    else:

        value = value - N

print(value, end="#")

display(20)

print(value)
```

a) 50#50

b) 50#5

c) 50#30

d) 5#50#

Q28 and 29 are ASSERTION AND REASONING based questions. Mark the correct choice as

(b) Both A and R are true and R is the correct explanation for A

(b) Both A and R are true and R is not the correct explanation for A

(c) A is True but R is False

(d) A is false but R is True

Q28:- **Assertion (A)**:- If the arguments in function call statement match the number and order of arguments as defined in the function definition, such arguments are called positional arguments.

Reasoning (R):- During a function call, the argument list first contains default argument(s) followed by positional argument(s).

Q29:- **Assertion(A)**: Python standard library consists of number of modules.

Reasoning(R): A function in a module is used to simplify the code and avoids repetition.

Q30. Differentiate between parameter(s) and argument(s) with a suitable example for each.

Q31. Find and write the output of the following python code:

```
a=10
def call():
    global a
    a=15
    b=20
    print(a)
call()
```

Q32. What will be the output of the following code?

```
x = 3
defmyfunc():
    global x
    x+=2
    print(x, end=' ')
```

```
    print(x, end=' ')
    myfunc()
    print(x, end=' ')
```

a) 3 3 3

b) 3 4 5

c) 3 3 5

d) 3 5 5

Chapter-4 (Data File Handling)

Q33. A text file **student.txt** is stored in the storage device. Identify the correct option out of the following options to open the file in read mode.

```
i. myfile = open('student.txt','rb')
ii. myfile = open('student.txt','w')
iii. myfile = open('student.txt','r')
iv. myfile = open('student.txt')
```

a) only i

b) both i and iv

c) both iii and iv

d) both i and iii

Q34. Suppose content of 'Myfile.txt' is

```
Humpty Dumpty sat on a wall
Humpty Dumpty had a great fall
All the king's horses and all the king's men
Couldn't put Humpty together again
```

What will be the output of the following code?

```
myfile = open("Myfile.txt")
data = myfile.read()
record=data.split()
```

```
print(len(record))
myfile.close()
```

a) 24

b) 25

c) 26

d) 27

Q35. Suppose content of 'Myfile.txt' is

```
Honesty is the best policy.
```

What will be the output of the following code?

```
myfile = open("Myfile.txt")
x = myfile.read()
print(len(x))
myfile.close()
```

a) 5

b) 25

c) 26

d) 27

Q36. Suppose content of 'Myfile.txt' is

```
Culture is the widening of the mind and of the spirit.
```

What will be the output of the following code?

```
myfile = open("Myfile.txt")
x = myfile.read()
y = x.count('the')
print(y)
myfile.close()
```

a) 2

b) 3

c) 4

d) 5

Q37. Suppose content of 'Myfile.txt' is

```
Ek Bharat Shreshtha Bharat
```

What will be the output of the following code?

```
myfile = open("Myfile.txt")
vlist = list("aeiouAEIOU")
vc=0
x = myfile.read()
for y in x:
    if(y in vlist):
    vc+=1
print(vc)
myfile.close()
```

a) 6
b) 7
c) 8
d) 9

Q38. Write a program in python to create a text file**"Myfile.txt"** and writer the below information:

"Honesty is the best policy"

Q39.Write a function in python to count the number of lines in a text file **'STORY.TXT'** which is starting with an alphabet**'A'**.

Q40. Write a program in python that will create a binary file **"MyInfo.dat"**, store the information of student such assrno, name, address,date of birth.