SHARDA VIDYALAYA RISALI SECTOR, BHILAI
VACATION HOME WORK

CLASS 12 **SUBJECT: ENGLISH CORE**

1. Why was Franz afraid to go to school?
(a) He had not completed his homework (b) He was afraid of punishment from M. Hamel
(c) There was a test on participles (d) He did not like school
Ans:- _____

2. What unusual thing did Franz notice on his way to school?
(a) No students were going to school (b) The bulletin board was empty
(c) Soldiers were marching near the school (d) The school was closed
Ans:- _____

3. What announcement was put up on the bulletin board?
(a) New teacher appointment (b). Holiday notice
(c) Order to teach only German in schools (d) Exam schedule
Ans:- _____

4. How was the classroom atmosphere different that day?
(a) It was noisy and chaotic (b) It was unusually quiet and serious
(c) Students were celebrating (d) No one had come to school
Ans:- _____

5. Who were sitting on the back benches that day?
(a) Parents of students (b) Village elders (c) Government officers (d) Soldiers
Ans:- _____

6. Why had the villagers come to the classroom?
(a) To protest against the order (b) To attend the last French lesson
(c) To complain about the teacher (d) To take admission
Ans:- _____

7. What did M. Hamel announce at the beginning of the class?
(a) He was leaving the school (b) It was their last French lesson
(c) There would be an exam (d) School would be closed
Ans:- _____

8. How did Franz feel after hearing the announcement?
(a). Happy (b) Indifferent (c). Regretful and ashamed (d) Angry
Ans:- _____

9. What did M. Hamel blame for the neglect of learning French?
(a) Students only (b) Teachers only (c) Parents, students, and himself (d) Government only
Ans:- _____

10. What did M. Hamel say about the French language?
(a) It is easy to learn (b) It is not useful
(c) It is the most beautiful and logical language (d) It is outdated
Ans:- _____

11. What did Franz notice about M. Hamel's dress?
(a) He wore casual clothes (b) He wore his special green coat and frilled shirt
(c) He wore a uniform (d) He wore old clothes

Ans:- _____

12. Assertion (A): The announcement from Berlin changed the atmosphere of the classroom.
Reason (R): It declared that only German would be taught in schools of Alsace and Lorraine.
(a) Both A and R are true, and R explains A (b) Both A and R are true, but R does not explain A
(c) A is true, R is false (d) A is false, R is true
Ans:- _____

13. What did Franz realize about his books?
(a) They were useless (b) They were too difficult
(c) They seemed like old friends (d) He wanted to throw them away
Ans:- _____

14. What was written on the blackboard at the end?
(a) Long live Germany (b) Long live France (c) Study hard (d) Goodbye
Ans:- _____

15. What theme is highlighted in the story?
(a) Importance of wealth (b) Love for language and country
(c) Value of discipline (d) Power of technology
Ans:- _____

16. Assertion (A): The poet compares her mother's face to a "late winter's moon."
Reason (R): The comparison suggests fading vitality and approaching death.
(a) Both A and R are true, and R explains A (b) Both A and R are true, but R does not explain A
(c) A is true, R is false (d) A is false, R is true
Ans:- _____

17. Who was with the poet in the car?
A. Her father B. Her sister C. Her mother D. Her friend
Ans:- _____

18. What was her mother doing in the car?
A. Talking B. Sleeping C. Reading D. Eating
Ans:- _____

18. How did the poet describe her mother's face?
A. Bright and cheerful B. Pale like a corpse C. Angry and tired D. Happy and glowing
Ans:- _____

19. What fear did the poet experience on seeing her mother?
A. Fear of illness B. Fear of losing her mother C. Fear of traveling D. Fear of loneliness
Ans:- _____

20. What did the poet do to avoid thinking about her mother's condition?
A. Started talking B. Looked out of the window C. Listened to music D. Closed her eyes
Ans:- _____

21. What unusual experience did Charley have?
A. He traveled abroad B. He found a third level at Grand Central Station
C. He met a ghost D. He lost his way
Ans:- _____

22. What does the 'third level' symbolize?
A. Reality B. Fear C. Escape from modern life D. Wealth
Ans:- _____

23. What kind of world did Charley find on the third level?
A. Futuristic B. Ancient C. 1890s setting D. Imaginary kingdom
Ans:- _____

24. Why did Charley want to go to Galesburg?
A. For a job B. To meet family C. To escape stress and live peacefully D. For education
Ans:- _____

24. What prevented Charley from buying the tickets?
A. No tickets available B. Lack of old currency C. He lost his wallet D. Ticket counter was closed
Ans:- _____

25. What is 'escapism'?
A. Facing reality B. Ignoring problems
C. Avoiding reality by imagining something pleasant D. Working hard
Ans:- _____

ANSWER THE FOLLOWING QUESTIONS IN 30-40 WORDS EACH

26. What is the significance of the image of the "late winter's moon" in the poem?
Ans:- _____

27. What was the impact of the order from Berlin on the people of Alsace?
Ans:- _____

28. What message does M. Hamel give about the French language?
Ans:- _____

29. What does the phrase "Vive La France" symbolize at the end of the story?
Ans:- _____

30. What unusual features did Charley notice at the third level of Grand Central Station?
Ans:- _____

31. What is the significance of Galesburg in the story?
Ans:- _____

32. How does the story blend reality and fantasy?
Ans:- _____

33. How does the story show that the past can seem more peaceful than the present?
Ans:- _____

34. What is the significance of the letter Charley receives from Sam?
Ans:- _____

35. Why does the poet smile and say "see you soon"?
Ans:- _____

36. How does the poem highlight the theme of ageing and separation?

Ans:- _____

37. What does M. Hamel say about the importance of language?
Ans:- _____

38. How does the story The Last Lesson highlight the theme of patriotism?
Ans:- _____

39. How did the order from Berlin affect the school in Alsace?
Ans:- _____

40. What contrast does the poet draw between the inside of the car and the outside world?
Ans:- _____

ANSWER THE FOLLOWING QUESTIONS IN 120-150 WORDS EACH

41. Describe the events that take place on the last day of the French lesson in the classroom. How does the atmosphere reflect the emotions of the people present?
Ans:- _____

42. "M. Hamel's last lesson was full of emotional intensity and patriotism." Discuss with reference to the story.
Ans:- _____

43. What role does language play in shaping identity in the story? How does the story highlight the importance of preserving one's language?
Ans:- _____

44. The poem *My Mother at Sixty-Six* deals with the fear of separation and ageing. Discuss how the poet brings out this theme through imagery and emotions.
Ans:- _____

45. "Seeing her mother age suddenly makes the poet confront her deepest fear." Discuss.
Ans:- _____

46. Why does the poet compare her mother's face to a "corpse-like" appearance? What effect does it create?
Ans:- _____

47. How does the journey to the airport act as a metaphor for life and separation?
Ans:- _____

48. Charley represents modern human beings who seek escape from stressful reality. Discuss this statement with reference to the story.
Ans:- _____

49. Explain the significance of Galesburg in Charley's imagination. Why does he consider it an ideal place?
Ans:- _____

50. Why is Charley's belief in the third level important in understanding human psychology?
Ans:- _____

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NOTE: THE ANSWERS OF ALL THE QUESTIONS MUST BE WRITTEN IN THE CLASS WORK COPY ALONG WITH THE QUESTIONS.

SHARDA VIDYALAYA RISALI

Class – XII

Subject – Mathematics

Vacation work (2026-27)

Multiple choice questions

Q.1 The principal value of $\cos^{-1}(1/2)$

(a)$3/2\pi$ (b)$\pi/3$ (c) $-3/\pi$ (d) $-6/\pi$

Ans……..

Q.2 3.The value of: $\tan^{-1}\sqrt{3} - \sec^{-1}(-2)$ is

a) $\pi/6$ b) $-\pi/6$ c) $-\pi/3$ d) 0

Ans……..

Q.3 The principal value of $\cos^{-1}(\cos(-7\pi/3))$ is

a) $7\pi/3$ b) $\pi/3$ c) $-\pi/3$ d) $-7\pi/3$

Ans……..

Q.4 The value of x if $\tan^{-1}\sqrt{3} + \cot^{-1} x =$ $\pi/2$

a) $\sqrt{3}$ b) $-\sqrt{3}$ c) $1/\sqrt{3}$ d) $\pi/6$

Ans……..

Q.5 Assertion (A): Domain of $y = \cos{-1}(x)$ is $[-1, 1]$.

Reason (R): The range of the principal value branch of $y = \cos^{-1}(x)$ is $[0, \pi] - \{\pi/2\}$

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

(b) Both Assertion (A) and Reason (R) are correct and Reason (R) is not the correct explanation of Assertion (A).

(c) Assertion (A) is correct but Reason (R) is wrong.

(d) Assertion (A) is wrong but Reason (R) is correct

Ans……..

Q.6 For the matrix $X = \begin{bmatrix} 0 & 1 & 1 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{bmatrix}$, $(X^2 - X)$ is

(a) 2I (b) 3I (c) I (d) 5I

Ans……..

Q.7 Number of symmetric matrices of order 3×3 with each entry 1 or -1 is

(a) 512 (b) 64 (c) 8 (d) 4

Ans……..

Q.8 Assertion (A): If the order of A is 3×4, the order of B is 3×4 and the order of C is 5×4, then the order of $(A^TB)C^T$ is 4×5.

Reason (R): To multiply an $m \times n$ matrix by $n \times p$ matrix the n must be the same and result is an $m \times p$ matrix. Also, A be a matrix of order $m \times n$ then the order of transpose matrix is $n \times m$.

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

(b) Both Assertion (A) and Reason (R) are correct and Reason (R) is not the correct explanation of Assertion (A).

(c) Assertion (A) is correct but Reason (R) is wrong.

(d) Assertion (A) is wrong but Reason (R) is correct

Ans……..

Q.9 If $A=\begin{bmatrix}3 & -2\\ 4 & -2\end{bmatrix}$ then the value of k if, $A^2 = kA - 2I$ is

(a) 0 (b) 8 (c) – 7 (d) 1

Ans……..

Q.10 If $A=\begin{bmatrix}x & 1\\ 1 & 0\end{bmatrix}$ and A^2 is the identity matrix, then x is equal to:

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

Ans……..

Q.11 A is a skew-symmetric matrix and a matrix B such that B'AB is defined, then B'AB is a

(a) symmetric matrix (b) skew-symmetric matrix (c) Diagonal matrix (d) inverse matrix

Ans……..

Q.12 Find the cofactor of a12 in the following: $\begin{vmatrix}2 & -3 & 5\\ 6 & 0 & 4\\ 1 & 5 & -7\end{vmatrix}$

(a) -46 (b) 46 (c) 0 (d) 1

Ans……..

Q.13 Assertion (A): Domain of $f(x) = \sin^{-1} x + \cos x$ is [-1, 1]

Reason (R): Domain of a function is the set of all possible values for which function will be defined.

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

(b) Both Assertion (A) and Reason (R) are correct and Reason (R) is not the correct explanation of Assertion (A).

(c) Assertion (A) is correct but Reason (R) is wrong.

(d) Assertion (A) is wrong but Reason (R) is correct

Ans……..

Q.14 For what value of k ∈ $\begin{vmatrix}k & 3\\ 4 & k\end{vmatrix}=\begin{vmatrix}4 & -3\\ 0 & 1\end{vmatrix}$ N, is .

(a) 4 (b) 1 (c) 3 (d) 0

Ans……..

Q.15 If A and B are square matrices of order 3 such that |A| = 1 and |B| = 3, then the value of |3AB| is:

(a) 3 (b) 9 (c) 27 (d) 81

Ans……..

Q.16 If one root of the equation $\begin{vmatrix}7 & 6 & x\\ 2 & x & 2\\ x & 3 & 7\end{vmatrix} = 7$ is x = -9, then the other two roots are

(a) 6, 3 (b) 6, -3 (c) -2, -7 (d) 2, 6

Ans……..

Q.17 The maximum value of $\Delta = \begin{vmatrix}1 & 1 & 1\\ 1 & 1+\sin\theta & 1\\ 1+\cos\theta & 1 & 1\end{vmatrix}$, where θ is a real number is

(a) 1 (b) 1/ 2 (c) 3 (d) -1

Ans……..

Q.18 Assertion (A): The value of determinant of a matrix and the value of determinant of its transpose are equal.
Reason (R): The value of determinant remains unchanged if its rows and columns are interchanged.
(a) Both Assertion (A) and Reason (R) are correct and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are correct and Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is correct but Reason (R) is wrong.
(d) Assertion (A) is wrong but Reason (R) is correct
Ans……..

Q.19 If $\begin{vmatrix} 4 & 1^2 \\ 2 & 1 \end{vmatrix} = \begin{vmatrix} 3 & 2 \\ 1 & x \end{vmatrix} - \begin{vmatrix} x & 3 \\ -2 & 1 \end{vmatrix}$, then the value of x is

(a) 6 (b) 3 (c) 7 (d) 1
Ans……..

Q.20 Let A be a non-singular matrix of order (3 × 3). Then |adj.A| is equal to
(a) |A| (b) $|A|^2$ (c) $|A|^3$ (d) 3|A|
Ans……..

Q.21 The value of $\tan^2(\sec^{-1} 2) + \cot^2(\operatorname{cosec}^{-1} 3)$ is
(a) 5 (b) 11 (c) 13 (d) 15
Ans……..

Q.22 If Cij denotes the cofactor of element Pij of the matrix P = $\begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & 2 & 4 \end{bmatrix}$ then the value of C31.C23 is
(a) 5 (b) 24 (c) –24 (d) –5
Ans……..

Q.23 The value of $\sin(\cos^{-1} ½)$ is
(a) 1 (b) $1/\sqrt{2}$ (c) 1/2 (d) $\sqrt{3}/2$
Ans……..

Q.24 If A is a symmetric matrix, then A^3 is
(a) symmetric matrix (b) skew-symmetric matrix (c) Identity matrix (d) row matrix
Ans……..

Q.25 If the matrix B = $\begin{bmatrix} 2 & a & 5 \\ -1 & 4 & b \\ c & -4 & 9 \end{bmatrix}$ is a symmetric matrix, then a + b + c is

(a) 0 (b) 5 (c) 4 (d) -1
Ans……..

<u>Very Short Answer type questions</u>

Q.26 Write the principal value of $\cos^{-1}[\cos(680)°]$
Ans. _____

Q.27 Find the value of $\cos^{-1}\left(\frac{1-\sqrt{x}}{1+\sqrt{x}}\right) + \operatorname{cosec}^{-1}\left(\frac{1+\sqrt{x}}{1-\sqrt{x}}\right)$
Ans. _____

_____

Q.28 Write the value of $\tan\left(2\tan^{-1}\frac{1}{5}\right)$

Ans. _____

Q.29 $A=\begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & x \\ -2 & 2 & -1 \end{bmatrix}$ and $AA^T = 9I$, Find x.

Ans. _____

_____

Q.30 Find the matrix X such that: $X\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix} = \begin{bmatrix} -7 & -8 & -9 \\ 2 & 4 & 6 \end{bmatrix}$

Ans. _____

_____

Q.31 If A and B are symmetric matrices, prove that AB – BA is a skew symmetric matrix.

Ans. _____

_____

Q.32 If $|A| = 3$, $A^{-1} = \begin{bmatrix} 3 & -1 \\ -5/3 & 2/3 \end{bmatrix}$, find A

Ans. _____

_____

Q.33 Find maximum value of the determinant $\begin{vmatrix} 1 & 1 & 1 \\ 1 & 1+\sin\theta & 1 \\ 1+\cos\theta & 1 & 1 \end{vmatrix}$ (θ is real).

Ans. _____

_____

Q.34 If $A=\begin{bmatrix} 2 & 3 \\ 5 & -2 \end{bmatrix}$ write A^{-1} in terms of A

Ans. _____

_____

Q.35 If $A = \begin{matrix} 1 & 3 \\ 2 & 1 \end{matrix}$, find the value of $|A^2 - 2A|$

Ans. _____

_____

Short Answer type questions

Q.36 If A (adjA) = $\begin{bmatrix} 3 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 3 \end{bmatrix}$ then find the value of $|A| + |adjA|$

Ans. _____

_____

Q.37 If the points (a_1, b_1), (a_2, b_2) and $(a_1 + a_2, b_1 + b_2)$ are collinear, then prove that $a_1b_2 = a_2b_1$.

Ans. _____

_____

Q.38 x = -9 is a root of $\begin{vmatrix} x & 3 & 7 \\ 2 & x & 2 \\ 7 & 6 & x \end{vmatrix}$ =0 then find the other 2 roots

Ans. _____

_____

Q.39 If A=$\begin{bmatrix} 0 & 1 & 3 \\ 1 & 2 & x \\ 2 & 3 & 1 \end{bmatrix}$ and A^{-1}=$\begin{bmatrix} \frac{-1}{2} & -4 & \frac{5}{2} \\ \frac{-1}{2} & 3 & \frac{-3}{2} \\ \frac{1}{2} & y & \frac{1}{2} \end{bmatrix}$ find the values of x and y.

Ans. _____

_____

Q.40 If $\begin{bmatrix} x & 2 & -3 \\ 5 & y & 2 \\ 1 & -1 & 1 \end{bmatrix}\begin{bmatrix} 3 & -1 & 2 \\ 4 & 2 & 5 \\ 2 & 0 & 3 \end{bmatrix} = \begin{bmatrix} 5 & 3 & 3 \\ 19 & -5 & 16 \\ 1 & -3 & 0 \end{bmatrix}$, find x and y

Ans. _____

_____

Q.41 If A = $\begin{matrix} 2 & 1 \\ -4 & -2 \end{matrix}$ then the value of $I-A+A^2-A^3+\ldots\ldots$

Ans. _____

_____

Q.42 Prove that $\tan^{-1}\frac{\sqrt{1-x^2}}{1+x} = \frac{1}{2}\cos^{-1}x$

Ans. _____

_____

LONG ANSWER TYPE QUESTIONS

Q.43 Prove that $\sin^{-1}(\frac{3}{5}) - \sin^{-1}(\frac{8}{17}) = \cos^{-1}(\frac{84}{85})$

Ans. _____

_____

Q.44 Write the value of $\tan^{-1}(2\sin(2\cos^{-1}\frac{\sqrt{3}}{2})$

Ans. _____

_____

Q.45 Use the product $\begin{matrix} 1 & 2 & -3 \\ 3 & 2 & -2 \\ 2 & -1 & 1 \end{matrix}\begin{matrix} 0 & 1 & 2 \\ -7 & 7 & -7 \\ -7 & 5 & -4 \end{matrix}$

to solve the system of equations:- x+2y-3z=6, 3x+2y-2z=3 and 2x-y+z=2

Ans. _____

_____

Q.46 Solve the following system of equations by matrix method

3x-2y+3z=8, 2x+y-z=1 and 4x-3y+2z=4

Ans. _____

_____

Q.47 A typist charges Rs. 145 for typing 10 English and 3 Hindi pages, while charges for typing 3 English and 10 Hindi pages are Rs. 180. Using matrices, find the charges of typing one English and one Hindi page separately. However, typist charged only Rs. 2 per page from a poor student Shyam for 5 Hindi pages. How much less was charged from this poor boy?

Ans. _____

_____

Q.48 If $A=\begin{matrix}1 & 0 & 2\\ 0 & 2 & 1\\ 2 & 0 & 3\end{matrix}$ and $A^3-6A^2+7A+KI=0$. Find K.

Ans. _____

_____

CASE BASED QUESTIONS

Q.49 Ashish wants to purchase a rectangular plot from his neighbour to construct a house. He asked about the dimensions of the plot , his neighbour told that if the length is decreased by 20m and breadth is increased by 30 m ,the area will increase by 1400m^2 ,

but If the length is decreased by 50m and the breadth is increased by 50m, then the area will remain the same.

Based on the information given above, answer the following questions

(i) Let x *and* y denote the length and breadth of the plot, find equations in terms of x.

Ans. _____

ii) Represent the information in matrix form.

Ans. _____

iii) If $A=\begin{matrix}3 & -2\\ 1 & -1\end{matrix}$ find AA'

OR

If $P=\begin{matrix}1 & -1\\ 3 & -1\end{matrix}$ and $Q=\begin{matrix}200\\ 50\end{matrix}$ Find PQ and QP.

Ans. _____

_____

Q.50 Two schools A and B decided to award prizes to their students for three values honesty (x) ,punctuality (y) and obedience (z) .School A decided to award a total of Rs 11000 for the three values to 5 , 4 and 3 students respectively while school B decided to award Rs 10700 for the three values to 4 , 3 and 5 students respectively . If all the three prizes together amount to Rs 2700 ,

Based on the information given answer the following questions

1. Form the equations in terms of x , y and z

Ans. _____

2. Is it possible to solve the system of equations using matrix method .
Ans. _____

3. Find award prize for each of the three values .
Ans. _____

VACATION HOMEWORK CLASS 12 PHYSICS

MCQs

1. Two charges q_1 and q_2 are placed at the centres of two spherical conducting shells of radius r_1 and r_2 respectively. The shells are arranged such that their centres are d [> (r_1+r_2)] distance apart. The force on q_2 due to q_1 is

   (a) $(1/4\Pi\varepsilon_0)\, q_1q_2/d^2$ (b) $(1/4\Pi\varepsilon_0)\, q_1q_2/(d-r_1)^2$ (c) Zero (d) $(1/4\Pi\varepsilon_0)\, q_1q_2/[d-(r_1-r_2)]^2$

2. When a negative charge (-Q) is brought near one face of a metal cube, the

   (a) cube becomes positively charged

   (b) cube becomes negatively charged.

   (c) face near the charge becomes positively charged and the opposite face becomes negatively charged.

   (d) face near the charge becomes negatively charged and the opposite face becomes positively charged.

3. Let F_1 be the magnitude of the force between two small spheres, charged to a constant potential in free space and F_2 be the magnitude of the force between them in a medium of dielectric constant K, Then F_1/F_2 is

   (a) 1/K (b) K (c) K^2 (d) 1/ K^2

4. A charge Q is placed at the centre of the line joining two charges q and q. The system of the three charges will be in equilibrium if Q is

   (a) q/3 (b) – q/3 (c) q/4 (d) – q/4

5. A point charge situated at a distance r from a short electric dipole on its axis, experience a force F. If the distance of the charge is 2r, the force on the charge will be

   (a) F/16 (b) F/8 (c) F/4 (d) F/2

6. The magnitude of the electric field due to a point charge, object at a distance of 4m is 9 N/C. From the same charged object the electric field of magnitude, 16 N/C will be at a distance of

   (a) 1m (b) 2m (c) 3m (d) 6m

7. An isolated point charge particle produces an electric field E at a point 3m away from it. The distance of the point at which the field is E/4

   (a)2m (b) 3m (c) 4m (d) 6m

8. Which one of the following is not a scalar quantity ?

   (a)Electric field (b) Voltage (c) Resistivity (d) Power

9. An electric dipole of length 2cm is placed at an angle of 30˚ with an electric field of 2×10^5 N/C. If the dipole experiences a torque of 8×10^{-3} Nm, the magnitude of either charge of the dipole , is

   (a) 4 MC (b) 7 μC (c) 8 mC (d) 2mC

10. An electric dipole placed in a non-uniform electric field will experience

    (a) Only a force (b) only a torque (c) both force and torque (d) neither force nor torque

11. A charge Q is enclosed by a Gaussian spherical surface of radius R. If the radius in doubled, then the outward electric flux will

    (*a*) be doubled (*b*) increase four times (C)be reduced to half (d) remain the same

12. What is the unit of surface charge density in the SI unit?

    (a) C (b) C/m (c) C/m^2 (d) C/m^3

13. What number of electrons will flow in one minute through a conductor that carries 1 Ampere current?

    (a) 5.2×10^{20} (b) 4.2×10^{20} (c) 3.7×10^{20} (d) 3.7×10^{19}

14. What is the dimension of volume charge density?

    (a) $[MLAT^{-2}]$ (b) $[M^0\, L^{-3}\, A\, T]$ (c) $[M\, L^{-3}\, A\, T]$ (d) $[M\, L^{-2}\, A\, T]$

15. Which one of the following is a safe place during lightning?

    (a)Under a tree (b) Under a light post (c) House with lightning arrester (d) High wall

ASSERSION- REASON QUESTIONS

Two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below

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

B) Both A and R are true and R is NOT the correct explanation of A

C) A is true but R is false

D) A is false and R is also false.

16. Assertion: The charge on any body can be increased or decreased in terms of e.
Reason: Quantization of charge means that the charge on a body is the integral multiple of e.

17. Assertion : A Charge, which is less than charge of one electron is not possible
Reason : Charge is quantized.

18. Assertion: The properties that the force with which two charges attract or repel each other are not affected by the presence of a third charge.
Reason: Force on any charge due to a number of other charges is the vector sum of all the forces on that charge due to other charges, taken one at a time.

19. Assertion(A) : A metallic shield in the form of a hollow shell, can be built to block an electric field.
Reason(R): In a hollow spherical metallic shell, electric field inside is zero at every point.

20. Assertion: Coulomb force is the dominating force in the universe.
Reason: Coulomb force is weaker than the gravitational force.

21. Assertion (A): The range of gravitational force and coulomb force is infinity.
Reason(R): The Coulomb force is stronger than the gravitational force.

22. Assertion (A): The range of gravitational force and coulomb force is infinity.
Reason(R): The Coulomb force is stronger than the gravitational force.

23. Assertion (A): Positive electric flux indicates that electric lines of force are directed outwards
Reason (R): Positive electric flux is due to a positive charge.

24. Assertion (A): Electric field inside a metallic charged conductor is always zero whatever of amount of charge.
Reason (R): Electric field lines are always perpendicular to surface of the metal.

25. Assertion (A): Charge on a body is 2.3×10^{-19}C is not possible.
Reason (R): Electric charge on a body is quantized and integral multiple of charge of an electron.

2 MARKS QUESTIONS

26 An attractive force of 5N is acting between two charges of +2.0 μC & -2.0 μC placed at some distance. If the charges are mutually touched and placed again at the same distance, what will be the new force between them?

_____

_____

27. A spherical balloon carries a charge that is uniformly distributed over its surface. As the balloon is blown up and increases in size, how does the total electric flux coming out of the surface change? Give reason.

_____

_____

28. Two point charges placed at a distance r in air exert a force F on each other. At what distance will these charges experience the same force F in a medium of dielectric constant k?

_____

_____

29. A force F is acting between two charges placed some distance apart in vacuum. If a brass rod is placed between these charges, how does the force change?

30. Define electric lines of force and give its two important properties.

31. Two insulated charged copper spheres *A* and *B* of identical size have charges q and $-3q$ respectively at a distance of 10cm.Find Force between the charges?

32. Two charges of magnitudes $-3Q$ and $+2Q$ are located at points $(a, 0)$ and $(4a, 0)$ respectively. What is the electric flux due to these charges through a sphere of radius '5a' with its centre at the origin?

33. A charge $Q\ \mu C$ is placed at the centre of a cube. What is the electric flux coming out from any one surface?

34. Two identical point charges, q each, are kept 2 m apart in air. A third point charge Q of unknown magnitude and sign is placed on the line joining the charges such that the system remains in equilibrium. Find the position and nature of Q.

35. Calculate the torque in rotating a dipole, of dipole moment 2×10^{-8} cm, from its position of stable equilibrium to the position of unstable equilibrium, in uniform electric field of intensity 5×10^4 N/C.

36. A simple pendulum consists of a small sphere of mass m suspended by a thread of length l. The sphere carries a positive charge q. The pendulum is placed in a uniform electric field of strength E directed vertically downwards. Find the period of oscillation of the pendulum due to the electrostatic force acting on the sphere, neglecting the effect of the gravitational force.

3 MARKS QUESTIONS

37. An electric dipole is held in a uniform electric field.
(i)Using suitable diagram, show that it does not undergo any translator motion.
(ii)Derive an expression for the torque acting on it and specify its direction.

38. A charge is distributed uniformly over a ring of radius a. Obtain an expression for the electric intensity E a point on the axis of the ring. Hence show that for points at large distances from the ring, it behaves like a point charge.

39. If the electric field is given by $\vec{E} = 8\hat{\imath} + 4\hat{\jmath} + 3\hat{k}$ NC-1, calculate the electric flux through a surface of area 100m2 lying in the X-Y plane.

40. (a) State Gauss's law. Using this law, obtain the expression for the electric field due to an infinitely long straight conductor of linear charge density λ .

(b)A wire AB of length L has linear charge density $\lambda = kx$ where x is measured from the end A of the wire. This wire is enclosed by a Gaussian hollow surface. Find the expression for the electric flux through the surface.

41. Two large parallel thin metallic plates are placed close to each other. The plates have surface charge densities of opposite signs and of magnitude 20 x 10^{-12} C/ m^2.Calculate the electric field intensity

(i) in the outer region of the plates (ii) in the interior region between the plates

42. A long charged cylinder of linear charge density + λ_1 is surrounded by a hollow coaxial conducting cylinder of linear charge density – λ_2. Use Gauss's law to obtain expressions for the electric field at a point (*i*) in the space between the cylinders, and (*ii*) outside the larger cylinder.

43.Two large charged plane sheets of charge densities σ and -2σ C/m^2 are arranged vertically with a separation of *d* between them. Deduce expressions for the electric field at points (*i*) to the left of the first sheet, (*ii*) to the right of the second sheet, and (*iii*) between the two sheets.

44. A spherical conducting shell of inner radius r_1 and outer radius r_2 has a charge *Q*.

(a)A charge *q* is placed at the centre of the shell. Find out the surface charge density on the inner and outer surfaces of the shell.

(b)Is the electric field inside a cavity (with no charge) zero, independent of the fact whether the shell is spherical or not? Explain.

45. (*a*) Use Gauss's theorem to find the electric field due to a uniformly charged infinitely large plane thin sheet with surface charge density σ.

(*b*) An infinitely large thin plane sheet has a uniform surface charge density + σ. Obtain the expression for the amount of work done in bringing a point charge *q* from infinity to a point, distant *r*, in front of the charged plane sheet.

5 MARKS QUESTIONS

46. (a) Derive an expression for the electric field at any point on the axial line of an electric dipole.

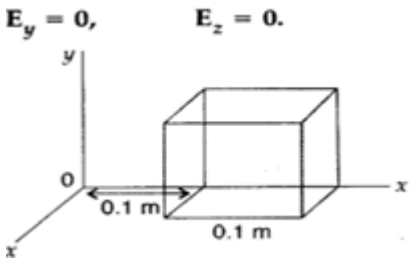
(b)Two identical point charge q each are kept 2m apart in air. A third point charge Q of unknown magnitude and sign is placed on the line joining the charges such that the system remains in equilibrium. Find the position and nature of Q.

47. (a) Derive an expression for the electric field E due to a dipole of length '2a'at a point distant r from the centre of the dipole on the equatorial line.

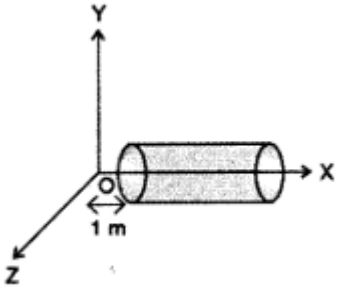
(b) Draw a graph of E versus r for r>>a.

(c) If this dipole were kept in a uniform external electric field E_o diagrammatically represent the position of the dipole in stable and unstable equilibrium and write the expressions for the torque acting on the dipole in both the cases.

48. (i) (a)Define electric flux. Write its SI units. (b) The electric field components due to a charge inside the cube of side 0.1 m are as shown : Ex = ax, where α = 500 N/C-m Calculate (i) the flux through the cube, and (ii) the charge inside the cube.



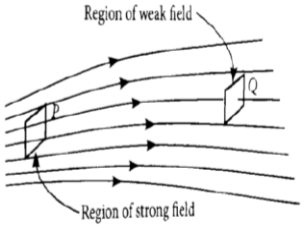
(ii) . A hollow cylindrical box of length 1m and area of cross-section 25 cm^2 is placed in a three dimensional coordinate system as shown in the figure. The electric field in the region is given by $E\rightarrow=50x\hat{\imath}$ where E is in NC^{-1} and x is in metres. Find • Net flux through the cylinder. • Charge enclosed by the cylinder



(iii) Draw a graph of kinetic energy as a function of linear charge density λ.

Case Study Questions :

49. Electric field strength is proportional to the density of lines of force i.e., electric field strength at a point is proportional to the number of lines of force cutting a unit area element placed normal to the field at that point. As illustrated in given figure, the electric field at P is stronger than at Q.

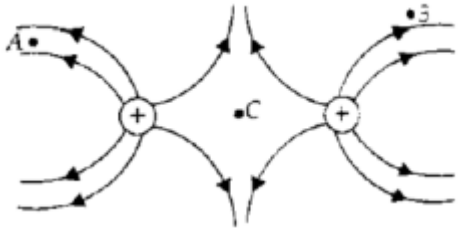


(i) Electric lines of force about a positive point charge are
(a) radially outwards (b) circular clockwise (c) radially inwards (d) parallel straight lines

(ii) Which of the following is false for electric lines of force?
(a) They always start from positive charge and terminate on negative charges.
(b) They are always perpendicular to the surface of a charged conductor.
(c) They always form closed loops.
(d) They are parallel and equally spaced in a region of uniform electric field.

(iii) Electric field lines are curved
(a) in the field of a single positive or negative charge (b) in the field of two equal and opposite charges.
(c) in the field of two like charges. (d) both (b) and (c)

(iv) The figure below shows the electric field lines due to two positive charges. The magnitudes E_A, E_B and E_C of the electric fields at point A, B and C respectively are related as



(a) $E_A > E_B > E_C$ (b) $E_B > E_A > E_C$ (c) $E_A = E_B > E_C$ (d) $E_A > E_B = E_C$

50. Smallest charge that can exist in nature is the charge of an electron. During friction it is only the transfer of electron which makes the body charged. Hence net charge on any body is an integral multiple of charge of an electron (1.6×10^{-19} C) i.e., $q = \pm ne$ where r= 1, 2, 3, 4 …Hence no body can have a charge represented as 1.8e, 2.7e, 2e/5, etc. Recently, it has been discovered that elementary particle as protons or neutrons are elemental units called quarks.

(i) Which of the following properties is not satisfied by an electric charge?
(a) Total charge conservation. (b) Quantization of charge (c) Two types of charge. (d) Circular line of force

(ii) Which one of the following charges is possible?
(a) 5.8×10^{-18} C (b) 3.2×10^{-18} C (c) 4.5×10^{-19} C (d) 8.6×10^{-19} C

(iii) If a charge on a body is 1 nC, then how many electrons are present on the body?
(a) 6.25×10^{27} (b) 1.6×10^{19} (c) 6.25×10^{28} (d) 6.25×10^{9}

(iv) If a body gives out 10^9 electrons every second, how much time is required to get a total charge of 1C from it?
(a) 190.19 years (b) 150.12 years (c) 198.19 years (d) 188.21 years

SHADA VIDYALAYA RISALI

Summer vacation home work

Class XII (CHEMISTRY)

Q1. Differentiate between molarity and molality of a solution.

……

Q2.What is meant by ‘reverse osmosis’?.

……..

Q3 Some liquids on mixing form ‘azeotropes’. What are ‘azeotropes’?

……

Q4 What type of intermolecular attractive interaction exists in the pair of methanol and acetone?

……

Q5.Non-ideal solutions exhibit either positive or negative deviations from Raoult’s law. What are these deviations and why are they caused? Explain with one example for each type

……

Q6. Define the terms, ‘osmosis’ and ‘osmotic pressure’.

……

Q7. A 1.00 molal aqueous solution of trichloroacetic acid (CCl_3COOH) is heated to its boiling point. The solution has the boiling point of 100.18°C. Determine the van’t Hoff factor for trichloroacetic acid. (K_b for water = 0.512 K kg mol^{-1})

……

Q8. Explain why aquatic species are more comfortable in cold water rather than in warm water.

……

Q9 State Raoult’s law. How is it formulated for solutions of non-volatile solutes?

……

Q10. State Henry’s law and mention two of its important applications?

……

Q11.Why do gases nearly always tend to be less soluble in liquids as the temperature is raised?

……

Q12.18 g of glucose, $C_6H_{12}O_6$ (Molar mass – 180 g mol^{-1}) is dissolved in 1 kg of water in a sauce pan. At what temperature will this solution boil?

(K_b for water = 0.52 K kg mol^{-1}, boiling point of pure water = 373.15 K)

……

Q13. An aqueous solution of sodium chloride freezes below 273 K. Explain the lowering in freezing points of water with the help of a suitable diagram

……

Q14. Calculate the mass of compound (molar mass = 256 g mol^{-1}) to be dissolved in 75 g of benzene to lower its freezing point by 0.48 K (K_f = 5.12 K kg mol^{-1}).

……

Q15. State Raoult's law for the solution containing volatile components. What is the similarity between Raoult's law and Henry's law?

……

Q16. What is meant by positive deviations from Raoult's law? Give an example. What is the sign of $\Delta_{mix}H$ for positive deviation?

……

Q17. (i) On mixing liquid X and liquid Y, volume of the resulting solution decreases . What type of deviation from Raoult's law is shown by the resulting solution?

What change in temperature would you observe after mixing liquids X and Y?

……

Q18.What happens when we place the blood cell in water (hypotonic solution)? Give reason.

……

Q19.Gas (A) is more soluble in water than Gas (B) at the same temperature. Which one of the two gases will have the higher value of K_H (Henry's constant) and why?

……

Q20. In non-ideal solution, what type of deviation shows the formation of maximum boiling azeotropes?

……

Q21. Why OSMOTIC pressure is a colligative property?

……

Q22.Define the following terms:
(i) Colligative properties (II) Abnormal molar mass(ii) van't Hoff factor

……

Q23. Explain why on addition of 1 mol of glucose to 1 litre of water, the boiling point of water increases.

……

Q24. 100 mg of a protein is dissolved in just enough water to make 10.0 mL of solution. If this solution has an osmotic pressure of 13.3 mm Hg at 25°C, what is the molar mass of the protein?
(R = 0.0821 L atm mol^{-1} K^{-1} and 760 mm Hg = 1 atm.)

……

Q25.Calculate the freezing point depression expected for 0.0711 m aqueous solution of Na2S04. If this solution actually freezes at – 0.320°C, what would be the value of Van't Hoff factor?

……

Q26.A solution prepared by dissolving 1.25 g of oil of winter green (methyl salicylate) in 99.0 g of benzene has a boiling point of 80.31°C. Determine the molar mass of this compound. (B.P. of pure benzene = 80.10°C and K_b for benzene = 2.53°C kg mol^{-1})

……

Q27.A solution of glycerol ($C_3H_8O_3$; molar mass = 92 g mol^{-1}) in water was prepared by dissolving some glycerol in 500 g of water. This solution has a boiling point of 100.42 °C. What mass of glycerol was dissolved to make this solution? Kb for water = 0.512 K kg mol

……

Q28.What mass of NaCl (molar mass = 58.5 g mol^{-1}) must be dissolved in 65 g of water to lower the freezing point by 7.5°C? The freezing point depression constant, K_f, for water is 1.86 K kg mol^{-1}. Assume van't Hoff factor for NaCl is 1.87.

……

Q29.State Henry's law. Calculate the solubility of CO2 in water at 298 K under 760 mm Hg (KH for CO2 in water at 298 K is 1.25 × 106 mmHg)

……

Q30.15 g of an unknown molecular substance was dissolved in 450 g of water. The resulting solution freezes at -0.34° C. What is the molar mass of the substance?

……

Q31Calculate the amount of KCl which must beadded to 1 kg of water so that the freezing point is depressed by 2K. (K_f for water = 1.86 K kg mol^{-1})

……

Q32.A solution of glycerol ($C_3H_8O_3$) in water was prepared by dissolving some glycerol in 500 g of water. This solution has a boiling point of 100.42 °C while pure water boils at 100 °C. What mass of glycerol was dissolved to make the solution?

……

Q33.15.0 g of an unknown molecular material was dissolved in 450 g of water. The resulting solution was found to freeze at -0.34 °C. What is the molar mass of this material? (K_f for water = 1.86 K kg mol^{-1})

……

Q34Calculate the amount of KCl which must beadded to 1 kg of water so that the freezing point is depressed by 2K. (K_f for water = 1.86 K kg mol^{-1})

……..

Q35.A solution of glycerol ($C_3H_8O_3$) in water was prepared by dissolving some glycerol in 500 g of water. This solution has a boiling point of 100.42 °C while pure water boils at 100 °C. What mass of glycerol was dissolved to make the solution?

……..

Q36. 15.0 g of an unknown molecular material was dissolved in 450 g of water. The resulting solution was found to freeze at -0.34 °C. What is the molar mass of this material? (K_f for water = 1.86 K kg mol^{-1})

…….

Q37..A solution containing 30 g of non-volatile solute exactly in 90 g of water has a vapour pressure of 2.8 kPa at 298 K. Further 18 g of water is added to this solution. The new vapour pressure becomes 2.9 kPa at 298 K. Calculate
(i) the molecular mass of solute and
(ii) vapour pressure of water at 298 K.

…….

Q38.The partial pressure of ethane over a saturated solution containing 6.56×10^{-2} g of ethane is 1 bar. If the solution were to contain 5.0×10^{-2} g of ethane, then what will be the partial pressure of the gas?

……

Q39.Some ethylene glycol, $HOCH_2CH_2OH$, is added to your car's cooling system along with 5 kg of water. If the freezing point of a water-glycol solution is -15.0°C, what is the boiling point of the solution?
(K_b = 0.52 K kg mol^{-1} and K_f = 1.86 K kg mol^{-1} for water)

……

. Assertion /. Reason

the correct answer out of the following choice.
(a) Assertion and reason both are correct statements but the reason is the correct explanation for assertion.
(b) Assertion and reason both are correct statements but the reason is not a correct explanation for assertion.
(c) Assertion is a correct statement but the reason is a wrong statement.
(d) Assertion is a wrong statement but the reason is correct

40. Assertion (A): Molality is a better method to express concentration than molarity.
Reason (R): Molality is defined in terms of mass of solvent and not mass of solution.

41**. Assertion (A):** Soda bottles are sealed under high pressure.
Reason (R): High pressure increases the solubility of carbon dioxide gas.

42 **Assertion:** In an ideal solution, $\Delta_{mix}H$ is zero.
Reason: In an ideal solution, A – B interactions are lower than A-A and B-B interactions.

43. **Assertion:** Molarity of a solution in liquid state changes with temperature.
Reason: The volume of a solution changes with change in temperature **44Assertion:** Molecular

mass of benzoic acid when determined by colligative properties is found high.
Reason: Dimerization of benzoic acid.

45 **Assertion:** The freezing of water is an endothermic process.
Reason: Heat must be removed from the water to make it freeze.

46. **Assertion:** Osmosis does not take place in two isotonic solutions separated by a semi-permeable membrane.
Reason: Isotonic solutions have the same osmotic pressure.

47. **Assertion:** If a liquid solute more volatile than the solvent is added to the solvent, the vapour pressure of the solution may increase i.e., $p_s > p^o$.
Reason: In the presence of a more volatile liquid solute, only the solute will form the vapours and solvent will not.

48 **Assertion:** If one component of a solution obeys Raoult's law over a certain range of composition, the other component will not obey Henry's law in that range.
Reason: Raoult's law is a special case of Henry's law

Q49 **CASE BASED**.

A solution is formed by mixing two liquids, A and B. When the solution shows positive deviation from Raoult's law, the intermolecular interactions are weaker than pure components. Addition of non-volatile solutes (e.g., salt on roads) reduces the freezing point of the solvent, a process described by $\Delta T_f = i \times K_f \times m.$

Q: Why is salt added to ice on roads?

Q: Between 0.1 M Urea and 0.1 M NaCl, which lowers the freezing point more?

Q: Give an example of a mixture showing negative deviation

Q: Why is high pressure used in soft drink bottles?

Q50 MULTIPLE CHOICE

1.. KH value for Ar(g), CO2(g), HCHO (g) and CH4(g) are 40.39, 1.67, 1.83 × 10-5 and 0.413 respectively. Arrange these gases in the order of their increasing solubility.

a) HCHO < CH4 < CO2 <Ar

b) HCHO < CO2 < CH4 <Ar

c) Ar< CO2 < CH4 < HCHO

d) Ar< CH4 < CO2 < HCHO

2. When a non-volatile solid is added to pure water it will:

a) boil above 100oC and freeze above 0oC

b) boil below 100oC and freeze above 0oC

c) boil above 100oC and freeze below 0oC

d) boil below 100 oC and freeze below 0Oc

3. Molarity of a solution at 60oC is-------- than molarity at 30oC

a) More b) less c) same d) no effect of temperature

4. Which of the following is a maximum boiling azeotrope?

(a) Ethanol + Water
(b) Acetone + Chloroform
(c) Water + HCl
(d) Benzene + Toluene

5. Value of Henry's constant KH:

(a) increases with decrease in temperature. (b) decreases with increase in temperature.
(c) increases with increase in temperature. (d) remains constant.

6. f molality of a dilute solution is doubled, the value of the molal elevation constant (Kb) will be

(a) halved (b) doubled (c) tripled (d) unchanged

7. Which of the following salt will have the same value of Vant Hoff 's factor(i) as that of K4[Fe(CN)6]

a).$Al_2(SO4)_3$ b).NaCl c).$Al(NO_3)_3$ d.) Na_2SO_4

8. The van't Ho factor for a dilute solution of K3[Fe(CN)6] is:

a) .10 b) 4 c) 5 d) zero

9. Which characterizes the weak intermolecular forces of attraction on in a liquid

a.High boiling point b.High vapour pressure c.High critical temperature d.high heat of vaporization

10. The van't Hoff factor (i) accounts for
(a) degree of solubilisation of solute.
(b) the extent of dissociation of solute.
(c) the extent of dissolution of solute.
(d) the degree of decomposition of solution.

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Sharda Vidyalaya ,Risali Sector
Summer Vacation Home work
Class -12th Subject- Biology

1. A plant species shows no variation even after several generations. Which process is responsible?
   a) Cross-pollination
   b) Apomixis
   c) Double fertilization
   d) Hybridization

2. Failure of tapetum will directly affect:
   a) Ovule formation
   b) Pollen viability
   c) Fertilization
   d) Seed germination
3. Why is endosperm formation considered resource-efficient?
   a) Forms before fertilization
   b) Forms only after fertilization
   c) Protects ovule
   d) Increases pollination
4. Which condition ensures cross-pollination?
   a) Homogamy
   b) Cleistogamy
   c) Dichogamy
   d) Autogamy
5. If pollen-pistil interaction fails, what happens?
   a) Ovule degenerates
   b) No pollen germination
   c) No seed formation
   d) Both b and c
6. Why is only one megaspore functional?
   a) To conserve energy
   b) Genetic control
   c) Random selection
   d) Mutation
7. If LH surge is absent, which event will not occur?
   a) Menstruation
   b) Ovulation
   c) Implantation
   d) Fertilization
8. Defect in zona pellucida leads to:
   a) No fertilization
   b) Polyspermy
   c) No ovulation

d) No cleavage

9. Why does cleavage not increase embryo size?
   a) No nutrients
   b) Only cell division occurs
   c) No mitosis
   d) No fertilization
10. If corpus luteum degenerates early:
   a) Pregnancy continues
   b) Menstruation starts
   c) Ovulation increases
   d) Fertilization occurs
11. Fertilization usually occurs in ampulla because:
   a) Hormonal secretion
   b) Ideal environment for gametes
   c) Nutrient supply
   d) Placenta present
12. Why is sperm motility essential?
   a) To divide cells
   b) To reach ovum
   c) To form zygote
   d) To produce hormones

Assertion Reason

1. A: Cleistogamous flowers guarantee seed set
   R: Pollination occurs without external agents

2. A: Endosperm is triploid
R: It is formed by triple fusion

3. A: Cross-pollination increases adaptability
   R: It introduces genetic variation

4. A: Sporopollenin protects pollen
   R: It is highly resistant

5. A: Double fertilization prevents wastage
   R: Endosperm forms only after fertilization

6. A: Synergids degenerate after fertilization
   R: They guide pollen tube.

7. A: Ovulation is hormone-regulated
   R: LH triggers ovulation

8. A: Placenta is multifunctional
   R: It exchanges nutrients and gases

9. A: Progesterone maintains pregnancy
   R: It maintains uterine lining

10. A: Sperm has mitochondria in middle piece
    R: It provides energy

11. A: Zona pellucida ensures monospermy
    R: It blocks additional sperm

12. A: Cleavage increases cell number
    R: No growth phase occurs

13. A: Implantation is essential
    R: Embryo gets nourishment

Very Short Question Answer

1. Why is pollination necessary before fertilization?
   ---
2. Why is endosperm triploid?
   ---
3. Why are pollen grains resistant to harsh conditions?
   ---
4. Why is fertilization necessary to restore diploidy?
   ---
5. Why is placenta called a “lifeline”?
   ---
6. Why is ovulation crucial?

Short Question Answer

1. Why is self-pollination disadvantageous evolutionarily?
   ---
2. How do flowers adapt for wind pollination?
   ---
3. Explain significance of double fertilization.
   ---
4. Why is implantation critical?
   ---
5. How does placenta act as endocrine gland?
   ---
6. Explain menstrual cycle regulation importance.

Case Based Question I:

1. A farmer grows a crop of plants that produce flowers regularly, but fruit formation is very low. On observation, it is found that the flowers are structurally normal but there are very few pollinators in the field. The farmer also notices that pollen grains fail to germinate on the stigma in many cases.

Questions:

(a)Identify the most probable reason for low fruit formation.

(b)Explain the role of pollinators in this process.

(c)Why is pollen-pistil interaction important for fertilization?

(d)Suggest one biological method to improve fruit yield.

Case Based Question II:

A couple has been trying to conceive for a long time. Medical tests reveal that ovulation is not occurring regularly in the female partner, although all other reproductive structures are normal.

Questions:

(a)Which hormone is primarily responsible for triggering ovulation?

(b)Explain why ovulation is necessary for fertilization.

(c)What could be the consequence of absence of ovulation on menstrual cycle?

(d)Suggest one possible medical solution to help the couple conceive.

Long Question Answer

1. Explain double fertilization and justify its evolutionary advantage.
   ---
2. Analyze impact of pollination failure on agriculture.
   ---
3. Explain embryo sac development with reasoning.
   ---
4. Compare oogenesis and spermatogenesis.
   ---
5. Explain events from fertilization to implantation logically.
   ---
6. Analyze hormonal changes during pregnancy

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SHARDA VIDYALAYA,RISALI
SESSION -2026-27
SUMMER VACTION HOMEWORK
CLASS-XII
SUBJECT-HINDI

नोट: सभी उत्तर कक्षा कार्य की कॉपी में प्रश्नों के साथ लिखें जाएँ |

नोट:निम्नलिखित प्रश्नों के सही विकल्प का चयन कीजिए –

प्रश्न 1. 'जो स्वामी के चले जाने का आदेश पाकर अवज्ञा से हँस दे' आशय है?
(क) जानबूझकर हँसना (ख) स्वामी को रो-रोकर मना लेना
(ग) भक्तिन कठोर बात को भी हँसकर टाल देती है (घ) इनमे से कोई नहीं
उत्तर----------

प्रश्न 2. लेखिका ने भक्तिन के अस्तित्व को किस तरह स्वीकारा है?
(क) लेखिका भक्तिन के व्यक्तित्व से स्वयं को घिरा हुआ अनुभव करती है
(ख) भक्तिन लेखिका के जीवन का अभिन्न अंग है
(ग) अ और ब दोनों सही है
(घ) इनमे से कोई नहीं।
उत्तर----------

प्रश्न 3. लेखिका ने भक्तिन को 'टकसाल' क्यों कहा है?
(क) क्योंकि वह बहुत कमाती थी
(ख) क्योंकि उसने तीन बेटियों को जन्म दिया था, जो लक्ष्मी का रूप हैं
(ग) क्योंकि वह शहर में रहती थी।
(घ) क्योंकि वह ईमानदार थी।
उत्तर----------

प्रश्न 4. भक्तिन को नौकर कहना लेखिका ने असंगत क्यों माना है?
(क) भक्तिन चोरी करती थी
(ख) भक्तिन अनपढ़ है
(ग) भक्तिन लेखिका के जीवन का अभिन्न अंग है
(घ) इनमे से कोई नहीं।
उत्तर----------

प्रश्न 5. महादेवी ने भक्तिन के जीवन को कितने परिच्छेदों (भागों) में विभाजित किया है?
(क) दो
(ख) तीन
(ग) चार
(घ) पाँच
उत्तर----------

प्रश्न 6. भक्तिन ने अपना नाम क्यों छुपाया था?
(क) क्योंकि वह डरती थी।
(ख) क्योंकि उसका नाम 'लक्ष्मी' था, लेकिन वह गरीब थी
(ग) क्योंकि उसे अपना नाम पसंद नहीं था।
(घ) क्योंकि वह एक नई पहचान चाहती थी।
उत्तर----------

प्रश्न 7. महादेवी वर्मा के अनुसार, भक्तिन में कौन- सा दुर्गुण था?
(क) वह बहुत बोलती थी।
(ख) वह झूठ बोलती थी।
(ग) वह अपनी हर बात को शास्त्र के अनुसार ढाल लेती थी (सुविधाजनक झूठ)
(घ) वह कामचोर थी।
उत्तर----------

प्रश्न 8. 'भक्तिन' पाठ गद्य की विधा है .....
(क) कहानी
(ख) निबंध
(ग) संस्मरणात्मक रेखाचित्र
(घ) उपन्यास
उत्तर----------

प्रश्न 9. कथन : लेखिका ने भक्तिन को 'हनुमान जी' के समान माना है।
कारण : भक्तिन सेवा भाव और स्वामीभक्ति में हनुमान जी के समान अटूट विश्वास रखती थी।
(क)कथन सही है पर कारण गलत है |
(ख) कथन गलत है पर कारण सही है |
(ग)कथन और कारण दोनों गलत हैं|
(घ) कथन सही है और कारण कथन की सही व्याख्या करता है|
उत्तर----------

प्रश्न 10. भक्तिन पाठ के आधार पर पंचायतों की क्या तस्वीर उभरती है?
(क) पंचायतें गूंगी, लाचार और अयोग्य हैं
(ख) वे सही न्याय नहीं कर पातीं
(ग) वे दूध का दूध और पानी का पानी करती हैं
(घ) वे अपने स्वार्थों को पूरा करती हैं

उत्तर----------

नोट: नीचे दिए गए प्रश्नों के उत्तर 40-60 शब्दों में दीजिए-

प्रश्न 11. भक्तिन पाठ में लेखिका ने समाज की किन समस्याओं का उल्लेख किया है?

उत्तर----------

---प्रश्न 12. भक्तिन का दुर्भाग्य भी कम हठी नही था, लेखिका ने ऐसा क्यों कहा है?

उत्तर----------

---प्रश्न 13. भक्तिन पाठ के आधार पर पंचायत के न्याय पर टिप्पणी कीजिए |

उत्तर----------

---प्रश्न 14. भक्तिन के चरित्र की विशेषताओं का उल्लेख कीजिए।

उत्तर----------

---प्रश्न 15. सिद्ध कीजिए कि भक्तिन तर्क-वितर्क करने में माहिर थी |

उत्तर----------

प्रश्न 16. "भक्तिन अच्छी है, यह कहना कठिन होगा। क्योंकि उसमें दुर्गुणों का अभाव नहीं है"। लेखिका ने ऐसा क्यों कहा होगा?

उत्तर----------

---नोट:निम्नलिखित प्रश्नों के सही विकल्प का चयन कीजिए –

17. कवि कैसे संसार को ठुकराता है?

(क) ईमानदार (ख) सत्यनिष्ठ (ग) कर्मशील (घ) वैभवशाली

उत्तर----------

18. कवि उन्माद में क्या लिए फिरता है?

(क) अवसाद (ख)अहसास (ग)अहसान (घ) अवसर

उत्तर----------

19. 'एक गीत' कविता में कवि ने समय को कैसा माना है?

(क) स्थिर (ख)परिवर्तनशील (ग) तीव्र (घ)उग्र

उत्तर----------

20. कवि के हृदय में कैसे भाव भरे हुए हैं?

(क) प्रसन्नता (ख) उत्साह (ग) विह्वलता (घ) घृणा

उत्तर----------

21. शीघ्र अपने बच्चों के पास पहुँचने की इच्छा चिड़िया की किस क्रिया से प्रकट होती है

(क) चहचहाने से (ख)तेज़ उड़ने से (ग) पीड़ा में तड़पने से (घ) जल्दी-जल्दी दाना चुगने से

उत्तर----------

22. दिन जल्दी-जल्दी ढलता है। गीत में नीड़ों से झांक रहे बच्चों का ध्यान चिड़ियों के परों में क्या भरता है?

(क) शिथिलता (ख) विकलता (ग) चंचलता (घ) विह्वलता

उत्तर----------

23. मुझसे मिलने को कौन विकल? 'दिन जल्दी-जल्दी ढलता है' गीत का यह प्रश्न उर में क्या भरता है?

(क) शिथिलता (ख) चंचलता (ग) विह्वलता (घ)आश्चर्य

उत्तर----------

24. कवि के फूट पड़ने को समाज ने कहा .....

(क) छंद बनाना (ख) बहाने बनाना (ग) अभिनय करना (घ) आँसू बहाना

उत्तर----------

25. आत्म परिचय कविता में कवि का संदेश क्या है?

(क) मस्ती (ख) हँसी (ग) सुधारवाद (घ) निष्क्रियता

उत्तर----------

26. घर जाते हुए कवि के पग शिथिल क्यों हो जाते हैं?

(क) घर पर उसका कोई इंतजार नहीं कर रहा

(ख) घर जाकर वह क्या करेगा?

(ग)उसे अपने घर जाने की जल्दी नहीं

(घ) उसे अपना घर अच्छा नहीं

उत्तर----------

नोट: नीचे दिए गए प्रश्नों के उत्तर 40-60 शब्दों में दीजिए-

प्रश्न 27-'साँसों के तार' से कवि का क्या तात्पर्य हैं? आपके विचार से उन्हें किसने झंकृत किया होगा?

उत्तर----------
---प्रश्न 28 -कवि स्वयं को क्या कहना पसंद करता है और क्यों?

उत्तर----------
---प्रश्न 29- कवि को यह संसार अपूर्ण क्यों लगता है?

उत्तर----------
---प्रश्न 30- बच्चे किसकी प्रत्याशा में हैं और क्यों ?

उत्तर----------
---प्रश्न 31- चिड़िया की चंचलता का क्या कारण है ?

उत्तर----------
---प्रश्न 32-प्रयासों में तेजी लाने के लिए मनुष्य को क्या करना चाहिए ?

उत्तर----------
---प्रश्न 33- कौन -सा विचार दिन ढलने के बाद लौट रहे पंथी के कदमों को धीमा कर देता है?

उत्तर----------

नोट: निम्नलिखित प्रश्नों के सही विकल्प का चयन कीजिए –

प्रश्न 34. सूची सुमेलित कीजिए -

स्तंभ 'अ' (अवधारणा/विषय)	**स्तंभ 'ब' (अर्थ/विवरण)**
1. बाज़ार दर्शन	(क) संयमी/मितव्ययी ग्राहक
2. खाली मन, खाली जेब	(ख) निबंध विधा
3. भरा मन, भरी जेब	(ग) निरुद्देश्य भ्रमण

(i)1(ख),2(ग),3(क)

(ii)1(क),2(ग),3(ख)

(iii)1(ग),2(ख),3(क)

(iv)1(ख),2(क),3(ग)

उत्तर----------

प्रश्न 35.बाज़ार में 'परचेजिंग पावर' से क्या तात्पर्य है?
(क) सामान बेचने की शक्ति
(ख) मोल-भाव करने की शक्ति
(ग) खरीदने की शक्ति
(घ) सामान दिखाने की शक्ति
उत्तर----------

प्रश्न 36. बाज़ार का सामान जरूरी और आराम को बढ़ाने वाला मालूम होता है। कारण है?
(क) लालच के कारण (ख) मोह के कारण (ग) बाज़ार के जादू के कारण (घ) व्यक्ति के कारण
उत्तर----------

प्रश्न 37.लेखक ने बाज़ार की सार्थकता किसमें बताई है?
(क) बहुत सामान खरीदने में (ख) बाज़ार सजाने में (ग) आवश्यकता के समय काम आने में (घ) फैशन अपनाने में
उत्तर----------

प्रश्न 38.बाज़ार का जादू उतरने पर क्या पता चलता है?
(क) चीजें बेकार हैं (ख) चीजें आकर्षक हैं (ग) आराम की चीजें बाधा बन सकती हैं (घ) पैसा कम है
उत्तर----------

नोट: नीचे दिए गए प्रश्नों के उत्तर 40-60 शब्दों में दीजिए-
प्रश्न 39. बाजार में भगत जी के व्यक्तित्व का कौन-सा सशक्त पहलू उभरकर आता है ? क्या आपकी नज़र में उनको आचरण समाज में शांति स्थापित करने में मददगार हो सकता है ?

उत्तर----------

प्रश्न 40. बाजार किसी का लिंग , जाति , धर्म व क्षेत्र नहीं देखता है। वह देखता है सिर्फ उसकी क्रय शक्ति को। इस रूप में वह एक प्रकार से सामाजिक समता की भी रचना कर रहा है। आप इस बात से कहां तक सहमत हैं ?

उत्तर----------

---प्रश्न 41. आप बाज़ार की भिन्न -भिन्न प्रकार की संस्कृति से अवश्य परिचित होंगे । मॉल की संस्कृति और सामान्य बाज़ार और हाट की संस्कृति में आप क्या अंतर पाते हैं? पर्चेजिंग पावर आपको किस तरह के बाज़ार में नजर आती हैं?

उत्तर----------

प्रश्न 42'बाज़ार दर्शन' पाठ का मुख्य उद्देश्य क्या है?

उत्तर----------

प्रश्न 43 . लेखक ने बाज़ार के आकर्षण को कैसे बताया है?

उत्तर----------

--- प्रश्न 44. 'पैसे की शक्ति' से लेखक का क्या आशय है?

उत्तर----------

--- प्रश्न 45.'मन की चंचलता' से क्या तात्पर्य है?

उत्तर----------

--- प्रश्न 46. लेखक के अनुसार सच्चा खरीदार कौन है?

उत्तर----------

--- प्रश्न 47. बाज़ार हमें कैसे भ्रमित करता है?

उत्तर----------

प्रश्न 48 .इस पाठ से हमें क्या शिक्षा मिलती है?

उत्तर----------

प्रश्न 49. 'बाज़ार दर्शन' शीर्षक क्यों उपयुक्त है?

उत्तर----------

---प्रश्न 50. मनुष्य को मन खाली होने पर बाज़ार क्यों नहीं जाना चाहिए ?

उत्तर----------

.....X.....

SHARDA VIDYALAYA RISALI

SUMMER VACATION HOMEWORK

CLASS – XII SUBJECT – PHYSICAL EDUCATION

MULTIPLE CHOICE QUESTION – 1 MARKS

Q 1) The total number of matches in a knockout tournament for 34 teams are_____

(A) 31 (B) 32 (C) 33 (D) 35

Ans _____

Q 2) What is the formula to calculate the number of matches in a single league tournament?

(A) N-1 (B) N(N-1) (C) N(N-1)/2 (D) 2N-N

Ans _____

Q 3) Which one of the following is an advantage of the Round Robin Tournament?

(A) Time consuming (B) More number of officials

(C) Expensive (D) Decides the real strong team

Ans _____

Q 4) When a team is directly participating in quarter/semi-final due to its win in previous Tournament , Is known as _____

(A) seeding (B) bye (C) robin round (D) Special seeding

Ans _____

Q 5) Which among the following are the parts of sports management?

(A) Planning (B) Organizing and staffing

(C) Directing and controlling (D) All of the above

Ans _____

Q 6) Pre-Tournament works of organising secretary are.

(A) Good planning (B) Staff grouping and their cooperation

(C)Raising funds (D) All of the above

Ans _____

Q 7) In knockout tournament teams have to

(A) Play a large number of matches (B) play till they are winning

(C) Gets bye (D) play one match

Ans _____

Q 8) Planning should be

(A) Specific (B) Logical (C) Flexible (D) All of the above

Ans _____

Q 9) Publishing rules and regulations for the tournament is .....tournament work.

(A) Pre (B) During (C) post (D) any time

Ans _____

Q 10) Schedule of the tournaments is also named as.....

(A) Seeding (B) Fixture (C) Heat (D) All of the above

Ans _____

Q 11) The above table is related to _____

(A) Knockout Fixture (B) League Fixture (C) Combination Fixture (D) None of these

Ans _____

Q 12) What is the formula for calculating number matches in a single knock out tournament ?

(A) 2N-1 (B) N-1 (C) N-2 (D) N-3

Ans _____

Q 13) Seeding method helps in elimination of.....

(A) Weak team (B) Strong team (C) Favourite team (D) Local team

Ans _____

Q 14) Scoliosis is a postural deformity related to _____

(A) Muscles (B) Shoulder (C) Legs (D) Spine

Ans _____

Q 15) Which domain involves emotional growth?

(A) Physical (B) Affective (C) Cognitive (D) Psychomotor

Ans _____

Q 16) Sakshi Malik won a medal in

(A) Badminton (B) Chess (C) Wrestling (D) Weightlifting

Ans _____

Q 17) How much physical activity is recommended daily for a 10-year-old child?

(A) 20 minutes (B) 30 minutes (C) 60 minutes (D) 90 minutes

Ans _____

Q 18) Which is the type of exercise recommended for adults of 18–64 years?

(A) Only yoga (B) Light walking

(C) 150–300 mins of moderate activity (D) No need for activity

Ans _____

Q 19) The transition period between childhood to adulthood is called

(A) Senescence (B) Adolescence (C) Early childhood (D) Infant hood

Ans _____

Q 20) What is one common cause of knock knees?

(A) Not enough calcium (B) Being overweight

(C) Sitting for a long time (D) None of these

Ans _____

Q 21) Which exercise helps correct flat foot?

(A) Swimming (B) Walking on toes (C) Heel raise (D) Sit-ups

Ans _____

Q 22) Who is the Indian woman who won a gold medal in World Badminton Championship?

(A) Mary Kom (B) Saina Nehwal (C) P.V. Sindhu (D) Sania Mirza

Ans _____

Q 23) What is one big reason that stops many women from playing sports?

(A) Being too tall (B) Low red blood cells
(C) Having high stamina (D) Eating healthy food

Ans _____

Q 24) What is menarche?

(A) First period B) Last period (C) Monthly pain (D) Exercise routine

Ans _____

Q 25) Amenorrhea means:

(A) Heavy bleeding (B) No periods (C) Shorter cycle (D) Painful periods

Ans _____

VERY SHORT ANSWERS -2 MARKS

Q 26) What is planning in games and sports?

_____ .

Q 27) What are knock-out tournaments?

_____ .

Q 28) What do you mean by extramural?

_____ .

Q 29) What is meant by ‘fixture’ in sports events?

_____ .

Q 30) What is meant by the Female Athlete Triad?

_____ .

Q 31) What are knock knees? Name one corrective measure ..

_____ .

Q 32) Define static posture with one example.

_____.

Q 33) Mention two causes of postural deformities.

_____ .

Q 34) Name two psychological benefits of participation in sports.

_____ .

SHORT ANSWER QUESTIONS -3 MARKS

Q 35) Write the names of various committees.

_____ .

Q 36) Mention any three advantages of conducting tournaments.

_____.

Q 37) What are the advantages of knock-out tournaments?

_____.

Q 38) Briefly mention the objectives of intramurals.

_____.

Q 39) What are the responsibilities of the technical committee in a sports event?

_____.

Q 40) Explain the three components of the Female Athlete Triad.

_____ .

Q 41) Mention any three benefits of regular participation in physical activities for children.

_____ .

Q 42) Describe any three common postural deformities.

_____ .

Q 43) How does poor posture affect the body? Give three effects .

_____ .

CASE STUDT BASED QUESTIONS - 4 Marks

Q 44) Sunrise Public School is going to organize its Annual Athletic Meet. Ms. Anita Sharma, the Physical Education teacher, is in charge of planning and executing the event. To ensure smooth functioning, she decides to form various committees with specific responsibilities before, during, and after the event.

(1) Which committee is mainly responsible for collecting entries and preparing list of participants before the event?

(A) First Aid Committee (B) Registration Committee

(C) Prize Distribution Committee (D) Transport Committee

Ans _____

(2) Which committee ensures smooth conduct of events on the ground during the sports day?

(A) Decoration Committee (B) Registration Committee

(C) Officials Committee ` (D) Announcement Committee

Ans _____

3) After the completion of Sports Day, which committee ensures distribution of medals and certificates to the winners?

(A) Officials Committee (B) Awards Committee

(C) First Aid Committee (D) Discipline Committee

Ans _____

(4) Which committee is responsible for making the event schedule or match fixtures?

(A) Welcome Committee (B) Fixtures Committee

(C) Registration Committee (D) Transport Committee

Ans _____

Q 45) Seema is a talented boxer preparing for a state-level championship. While she performs well, she feels immense pressure to stay within a specific weight category. As a result, she has started skipping meals and overexercising. Her performance is declining, and she experiences mood swings and irregular periods.

1. Seema’s symptoms suggest she may be suffering from:

A) Anaemia B) Female Athlete Triad C) Thyroid D) Hypertension

Ans _____

2. Main reason behind Seema’s health issues is:

A) Lack of training ` B) Energy imbalance from restrictive eating

C) Too much rest D) High protein diet

Ans _____

3. Best action Seema’s coach should take is:

A) Ignore the signs B) Encourage more fasting

C) Refer her to a sports nutritionist or psychologist D) Increase training hours

Ans _____

4. Most likely long-term risk if Seema continues this pattern is:

A) Better stamina B) Stronger immunity

C) Bone loss and hormonal issues D) Improved muscle gain

Ans _____

LONG ANSWER QUESTIONS - 5 Marks

Q 46) What do you mean by community sports ? Write their benefits .

_____ .

Q 47) Sixteen players are participating in a billiards tournament on a knockout basis and four players are seeded; draw the fixtures .

_____ .

Q 48) What are the different types of tournaments conducted in sports? Compare knockout, league, and combination tournaments with advantages and disadvantages of each.

_____ .

Q 49) Explain the Female Athlete Triad in detail. Discuss its components, causes, and preventive measures.

_____ .

Q 50) Discuss the importance of physical activity and sports in the overall development of children and adolescents.

_____ .

****

SHARDA VIDYALAYA RISALI SECTOR, BHILAI

Vacation Homework

Class – 12 **Subject – Computer Science (083)**

Objective Type Questions

1. Which of the following is an invalid identifier in Python?

a. lambda b. alpha c. beta d. gamma

2. Evaluate the following expression and identify the correct answer.

not True and False or True

a. True b. False c. Error d. None of these

3. Evaluate the following expression and identify the correct answer.

print(16 - (4 + 2) * 5 + 23 * 4)**

a. 54 b. 46 c. 18 d. 32

4. Which of the following statement(s) would give an error during execution of the following code?

```
tup = (20,30,40,50,80,79)
print(tup)          #Statement 1
print(tup[3]+50)    #Statement 2
print(max(tup))     #Statement 3
tup[4]=80           #Statement 4
```

Options:

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

5. What will be the output of the following statement :

```
print (16*5/4*2/5-8)
```

(a) `-3.33` (b) `6.0`

(c) `0.0` (d) `-13.33`

6. Identify the invalid Python statement from the following :

(a) `d = dict()` (b) `e = {}`

(c) `f = []` (d) `g = dict{}`

7. Consider the statements given below and then choose the correct output from the given options :

```
myStr="MISSISSIPPI"
print(myStr[:4]+"#"+myStr[-5:])
```

(a) `MISSI#SIPPI` (b) `MISS#SIPPI`

(c) `MISS#IPPIS` (d) `MISSI#IPPIS`

8. Select the correct output of the following code :

```
event="G20 Presidency@2023"
L=event.split(' ')
print(L[::-2])
```

(a) `'G20'` (b) `['Presidency@2023']`

(c) `['G20']` (d) `'Presidency@2023'`

9. What will be the output of the following statement ?

```
print(6+5/4**2//5+8)
```

(A) `-14.0` (B) `14.0`

(C) `14` (D) `-14`

10. Select the correct output of the code :

```
S = "text#next"
print(S.strip("t"))
```

(A) `ext#nex` (B) `ex#nex`

(C) `text#nex` (D) `ext#next`

11. Consider the statements given below and then choose the correct output from the given options :

```
Game="World Cup 2023"
print(Game[-6::-1])
```

(A) `CdrW` (B) `ce o`

(C) `puC dlroW` (D) `Error`

12. Consider the statements given below and then choose the correct output from the given options :

```
D={'S01':95, 'S02':96 }
for I in D :
    print(I,end='#')
```

(A) `S01#S02#`
(B) `95#96#`
(C) `S01,95#S02,96#`
(D) `S01#95#S02#96#`

13. Identify the output of the following code segment :

```
s = "an apple. a toy."
s=s.find('a',2)
print(s)
```

(A) 0
(B) 1
(C) 3
(D) 'a'

14. What is the output of the following expression ?

```
Sports="Paralympic Games"
print (Sports.split("m"))
```

(A) `['Paraly','m','pic Ga','m','es']`
(B) `('Paraly','m','pic Games')`
(C) `('Paraly','pic Ga','es')`
(D) `['Paraly','pic Ga','es']`

15. Which of the following list methods accepts exactly 2 parameters ?

(A) `append()`
(B) `extend()`
(C) `insert()`
(D) `pop()`

16. 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)

17. Identify the output of the following Python statements.

```
x = [[10.0, 11.0, 12.0],[13.0, 14.0, 15.0]]
y = x[1][2]
print(y)
```

a. 12.0
b. 13.0
c. 14.0
d. 15.0

18. 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

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

```
tup1 = (1,2,[1,2],3)
tup1[2][1]=3.14
print(tup1)
```

a. (1,2,[3.14,2],3)
b. (1,2,[1,3.14],3)
c. (1,2,[1,2],3.14)
d. Error Message

20. Identify the output of the following Python statements.

```
x = 2
while x < 9:
    print(x, end='')
    x = x + 1
```

a. 12345678

b. 123456789

c. 2345678

d. 23456789

21. Identify the output of the following Python statements.

```
b = 1
for a in range(1, 10, 2):
    b += a + 2
print(b)
```

a. 31
b. 33
c. 36
d. 39

Assertion and Reason

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.

22. **Assertion (A)** : The expression `"HELLO".sort()` in Python will give an error.

Reason (R) : `sort()` does not exist as a method/function for strings in Python.

23. *Assertion (A) :* Every object in Python is assigned a unique identity (ID).

Reason (R) : ID remains the same for the lifetime of that object.

24. 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

25. Assertion (A): You can add an element in a dictionary using key:value pair.

Reasoning (R): A new (key:value) pair is added only when the same key doesn't exist in the dictionary. If the key is already present, then the existing key gets updated and the new entry will be made in the dictionary.

SUBJECTIVE TYPE QUESTIONS

26. Write a suitable Python statement for each of the following tasks using built-in functions/methods only.

i To insert (20,30,40) in the List L1..

ii To display a string **S** in the title form.

27. Give an example of each of the following :

(i) An expression using any one identity operator.

(ii) An arithmetic expression which uses any one augmented assignment operator.

28. Write the output displayed on execution of the following Python code :

```
LS=["HIMALAYA", "NILGIRI", "ALASKA", "ALPS"]
D={}
for S in LS :
    if len(S)%4 == 0:
        D[S] = len(S)
for K in D :
    print(K,D[K], sep = "#")
```

29. Write the Python statement for each of the following tasks using built-in functions/methods only : **1 + 1 = 2**

(i) To remove the item whose key is **"NISHA"** from a dictionary named **Students.**

For example, if the dictionary **Students** contains **{"ANITA":90, "NISHA":76, "ASHA":92}**, then after removal the dictionary should contain **{"ANITA":90, "ASHA":92}**

(ii) To display the number of occurrences of the substring **"is"** in a string named **message**.

For example if the string **message** contains **"This is his book"**, then the output will be 3.

30. Predict the output of the following code :

```
d={"IND":"DEL","SRI:"COL","CHI":"BEI"}
str1=""
for i in d:
  str1=str1+str(d[i])+"@"
  str2=str1[:-1]
print (str2)
```

31. Write the output on execution of the following Python code :

```
S="Racecar Car Radar"
L=S.split()
for W in L :
    x=W.upper()
    if x==x[::-1]:
        for I in x:
            print(I,end="*")
    else:
        for I in W:
            print(I,end="#")
    print()
```

32. (a) Write the Python statement for **each** of the following tasks using BUILT-IN functions/methods only : *1+1=2*

(i) To delete an element 10 from the list **lst.**

(ii) To replace the string **"This"** with **"That"** in the string **str1.**

OR

(b) A dictionary **dict2** is copied into the dictionary **dict1** such that the common key's value gets updated. Write the Python commands to do the task and after that empty the dictionary **dict1**. *2*

33. Predict the output of the following code :

```
d={"IND":"DEL","SRI":"COL","CHI":"BEI"}
str1=""
for i in d:
  str1=strl+str(d[i])+"@"
  str2=str1[:-1]
print (str2)
```

34. Predict the output of the code given below:

```
Name="PythoN3.1"
R=""
for x in range(len(Name)):
  if Name[x].isupper():
        R=R+Name[x].lower()
  elif Name[x].islower():
        R=R+Name[x].upper()
  elif Name[x].isdigit():
        R=R+Name[x-1]
  else:
        R=R+"#"
print(R)
```

35. Predict the output of the code given below:

```
s="cs4experts"
n = len(s)
m=""
for i in range(0, n):
        if (s[i] >= 'a' and s[i] <= 'm'):
        m = m +s[i].upper()
        elif (s[i] >= 'n' and s[i] <= 'z'):
        m = m +s[i-1]
        elif (s[i].isupper()):
        m = m + s[i].lower()
        else:
        m = m +'&'
print(m)
```

36. i. Differentiate split() and partition() with example.
ii. Differentiate end = '@' and sep = '@'.

37. Predict the output of the Python code given below :

```
s="India Growing"
n = len(s)
m=""
for i in range (0, n) :
  if (s[i] >= 'a' and s[i] <= 'm') :
    m = m + s [i].upper()
  elif (s[i] >= 'O' and s[i] <= 'z') :
    m = m +s [i-1]
  elif (s[i].isupper()):
    m = m + s[i].lower()
  else:
    m = m + '@'
print (m)
```

38. Write a Python Program to display alternate characters of a string my_string.

For example, if my_string = "**Today is a pleasant day**"

The output should be : **Taialsta**

39. Consider the following dictionaries, D and D1 :

```
D={"Suman": 40, "Raj":55, "Raman":60}
D1={"Aditi":30, "Amit":90,"Raj":20}
```

(Answer using built-in Python functions only)

(i) (a) Write a statement to display/return the value corresponding to the key `"Raj"` in the dictionary `D`.

OR

(b) Write a statement to display the length of the dictionary `D1`.

40. Consider the above Q.No 36 dictionaries, D and D1 :

(a) Write a statement to append all the key-value pairs of the dictionary `D` to the dictionary `D1`.

OR

(b) Write a statement to delete the item with the given key `"Amit"` from the dictionary `D1`.

41. Write the output on execution of the following Python code :

```
P=[3,5,7,4]
P.insert(2,3)
P.extend([10, 6])
print(P)
print(P.index(7))
print(P[::2])
```

42. Assuming that `D1` and `D2` are Python dictionaries, write the following statements using built-in functions/methods :

(I) (a) To delete all the elements of `D1`.

OR

(b) To generate a list of values of `D1`.

(II) (a) To update dictionary `D2` with the elements of `D1`.

OR

(b) To generate a tuple of keys of `D2`.

43. Consider T=(10,20,30) and L=[60,50,40] and answer the question I and II.

(I)

A. Write command(s) to add tuple **T** in list **L**.

OR

B. Write command to find and delete element 20 from tuple **T**

44. Consider Q.No 40 Tuple T and List L and answer the following question.

A. Write command to add **50** in **L** at position **2**.

OR

B. Write command to delete the variable **T**.

45. Predict the output of the following code:

```
d={ }
V="programs"
for x in V:
   if x in d.keys( ):
      d[x]=d[x]+1
   else:
      d[x]=1
print(d)
```

46. Predict the output of the following code:

```
V="interpreter"
L=list(V)
L1=""
for x in L:
  if x in ['e','r']:
     L1=L1+x
print(L1)
```

47. Predict the output of the following code :

```
d={"IND":"DEL","SRI":"COL","CHI":"BEI"}
str1=""
for i in d:
   str1=strl+str(d[i])+"@"
   str2=str1[:-1]
print (str2)
```

48. Predict the output of the following code:

```
d = {"apple": 15, "banana": 7, "cherry": 9}
str1 = ""
for key in d:
    str1 = str1 + str(d[key]) + "@" + "\n"
str2 = str1[:-1]
print(str2)
```

49. Predict the output of the following code:

```
line=[4,9,12,6,20]
for I in line:
    for j in range(1,I%5):
        print(j,'#',end="")
    print()
```

50. Predict the output of the following Python code:

```
wildlife_sanctuary = ["Kaziranga", "Ranthambhore", "Jim Corbett", "Sundarbans", "Periyar", "Gir", "Bandipur"]

output = [ ]

for sanctuary in wildlife_sanctuary:

    if sanctuary[-1] in 'aeiou':

            output.append(sanctuary[0].upper())

print(output)
```

****

NOTE: THE ANSWERS OF ALL THE QUESTIONS MUST BE WRITTEN IN THE CLASS WORK COPY ALONG WITH THE QUESTIONS.

SHARDA VIDYALAYA RISALI SECTOR, BHILAI

Vacation Homework

Class – 12 **Subject – Informatics Practices**

OBJECTIVE TYPE QUESTIONS

1. State whether the following statement is True or False:
Slicing can be used to extract a specific portion from a Pandas Series.

2. State whether the following statement is True or False :
"Series data structure of Pandas can hold the value of integer data type only."

3. The name "Pandas" is derived from the term:
a. Panel Data
b. Panel Series
c. Python Document
d. Panel Data Frame

4. The command to install the pandas is:
a. install pip pandas
b. install pandas
c. pip pandas
d. pip install pandas

5. Python pandas was developed by:
a. Guido van Rossum
b. Travis Oliphant
c. Wes McKinney
d. Brendan Eich

6. Pandas Series is:
a. 2 Dimensional
b. 3 Dimensional
c. 1 Dimensional
d. Multidimensional

7. We can analyse the data in pandas with
a. Series
b. Data Frame
c. Both of the above
d. None of the above

8. To create an empty Series object, you can use:
a. pd.Series(empty) b. pd.Series(np.Nan) c. pd.Series() d. all of these

9. To get the number of dimensions of a Series object, _____ attributes is displayed.
a. index b. size c. itemsize d. ndim

10. To get the size of the datatype of the items in Series object, you can display _____ attribute.
a. index b. size c. itemsize d. ndim

11. To check if the Series object contains NaN values, _____ attribute is displayed.
a. hasnans b. nbytes c. ndim d. dtype

12. To display third element of a Series object S, you will write_____.

a. S[:3] b. S[2] c. S[3rd] d. S[:2]

13. What type of error is returned by the following statement?

import pandas as pd
pd.Series([1,2,3,4], index = ['a','b','c'])

a. Value Error b. Syntax Error c. Name Error d. Logical Error

14. Which of the following statement is worng?

a. We can't change the index of the series.

b. We can easily convert the list, tuple and dictionary into a series

c. A series represents a single column in memory

d. We can create empty series.

15. Which of the following data structure is used for storing one-dimensional labelled data in Python Pandas?

a. Integer b. Dictionary c. Series d. Dataframe

16. State whether the following statement is True or False:

A Series object is value mutable

17. Both Series and DataFrame are one-dimensional data structure objects.

18. You can use numpy._____ for missing data.

19. The _____ function on Series object returns total elements in it including NaNs.

20. State whether the following statement is True or False :

Slicing can be used to extract a specific portion from a Pandas Series.

Assertions and Reasons

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.

21. Assertion (A) : To use the Pandas library in a Python program, one must import it.
Reason (R) : The only alias name that can be used with the Pandas library is pd.

22. Assertion (A) : Pandas is a high level data manipulation tool used for analysing data.
Reason (R) : It is very easy to import and export data using the Pandas library which has a very rich set of fuctions.

23. Assertion (A) : A series is a 1D data structure which is value-mutable but size-immutable
Reason (R) : Everytime you change the size of a series object, change does not take place in the existing series object, rather a new series object is created with the new size.

24. Assertion (A) : A series object stores values of homogeneous types
Reason (R) : Even if values appear to be of different types, internally they are stored in a common datatype.

25. Assertion (A): When creating a Pandas Series from a NumPy array, the length of the index labels passed must match the size of the array to avoid a ValueError.

Reason (R): If the lengths do not match, Pandas automatically fills the missing values with NaN to prevent errors.

SUBJECTIVE TYPE QUESTIONS

1. What is a Series in Python Pandas? Also, give a suitable example to support your answer.

2. List any two differences between Series and DataFrame in Pandas.

3. List any two differences between Python Pandas Series and Numpy Array

4. Predict the output of the given Python code:

```
import pandas as pd
list1=[-10,-20,-30]
ser = pd.Series(list1*2)
print(ser)
```

5. What will be the output of the given code?

```
import pandas as pd
s = pd.Series([1,2,3,4,5],
              index=['akram','brijesh','charu','deepika','era'])
print(s['charu'])
```

6. Assuming the given series, named **stud**, which command will be used to print 5 as output?

```
Amit      90
Ramesh    100
Mahesh    50
john      67
Abdul     89
Name: Student, dtype: int64
```

7. Complete the given Python code to get the required output as: **Rajasthan**

```
import _________ as pd
di = {'Corbett': 'Uttarakhand', 'Sariska':
'Rajasthan', 'Kanha': 'Madhya Pradesh',
'Gir':'Gujarat'}
NP = ___________. Series( _____ )
print(NP[ ___________ ])
```

8. Consider the following series named animal:

```
L         Lion
B         Bear
E     Elephant
T        Tiger
W         Wolf
dtype: object
```

Write the output of the command:

```
print(animal[::-3])
```

9. Complete the given Python code to get the required output (ignore the dtype attribute) as

Output:

```
Tamil Nadu      Chennai
Uttar Pradesh   Lucknow
Manipur         Imphal
```

Code:

```
import _______ as pd
data = ['Chennai','_______','Imphal']
indx = ['Tamil Nadu','Uttar Pradesh','Manipur']
s = pd.Series(_______, indx)
print(_______)
```

10. Write a Python Program to create a Pandas Series as shown below using a dictionary. Note that the left column indicates the indices and the right column displays the data.

Russia	Moscow
Hungary	Budapest
Switzerland	Bern

11. Consider the Series s:

```
0  10
1  20
2  30
3  40
4  50
```

Write Python statements to:
I. Display the dtype of the Series.
II. Display the total number of elements using an attribute.
III. Display the shape of the Series.
IV. Display elements from index 1 to 3 using slicing.

12. Ravi wants to create a Pandas Series as shown below:

```
January    31
February   28
March      31
```

Help him in completing the code below to achieve the desired output.

Note: **ser_data** is a dictionary.

```
import _____ as pd
ser_data = _____
s = pd._____(ser_data)
print(s)
```

13. Consider the Series cities:

```
0  Delhi
1  Mumbai
2  Chennai
3  Kolkata
4  Pune
```

Write Python statements to:
I. Assign a name "CityNames" to the Series and display it.
II. Display the size of the Series.
III. Display the dtype of the Series.
IV. Display elements from index 0 to 2 using slicing.

14. Write a Python program to create a Pandas Series as shown below using a ndarray, where the subject names are the indices and the corresponding marks are the values in the series.

Mathematics	85
Science	90
English	78
History	88

15. Write the output of the given program:

```
import pandas as pd
S1=pd.Series([5,6,7,8,10],index=['v','w','x','y','z'])
l=[2,6,1,4,6]
S2=pd.Series(l,index=['z','y','a','w','v'])
print(S1-S2)
```

16. Complete the given Python code to get the required output as (ignore the dtype attribute) :

Output :

```
Dog Mammal
Cat Mammal
Goldfish Fish
```

Code :

```
import _______ as pd
data = ['Mammal', 'Mammal', 'Fish']
indx = ['Dog', '______', 'Goldfish']
s = pd.Series(______, index=indx)
print(______)
```

17. Write a Python program to create a Pandas Series from a scalar value. The Series should have indexes as `'X1','X2','X3','X4','X5'` with each value in the Series set to `100`.

18. Write a Python program to create a Pandas Series from a **list of values**. The Series should have indexes as 'A1', 'A2', 'A3', 'A4', 'A5' and values as 10, 20, 30, 40, 50.

19. Write a Python program to create a Pandas Series from a **dictionary**. The keys should be 'P', 'Q', 'R', 'S' and values as 100, 200, 300, 400.

20. Write a Python program to create a Pandas Series from a **tuple of values**. The Series should have indexes as 'Jan', 'Feb', 'Mar', 'Apr', 'May' and values as 5, 10, 15, 20, 25.

Predict the output of the following Code:

21.
```
import pandas as pd
L1=[1,"A",21]
S1 = pd.Series(data=2*L1)
print(S1)
```

22.
```
import numpy as num
import pandas as pd
arr=num.array([1,7,21])
S1 = pd.Series(arr)
print(S1)
```

23.
```
import pandas as pd
L1 = list("My name is Ravi Kumar")
S1 = pd.Series(L1)
print(S1[0])
```

24. Find the output of the following code:
```
import pandas as pd
lst1=[20,35,40]
ser1=pd.Series([20,35,40])
print(lst1+ lst1)
print(ser1+ser1)
```

25. Complete the given Python code to get the required output as "California":
```
import _____ as pd
data = {'Yosemite': 'California', 'Yellowstone': 'Wyoming', 'Glacier':
'Montana', 'Rocky Mountain': 'Colorado'}
national_parks = pd.Series(_____)
print(national_parks_____)
```

NOTE: THE ANSWERS OF ALL THE QUESTIONS MUST BE WRITTEN IN THE CLASS WORK COPY ALONG WITH THE QUESTIONS.

SHARDA VIDYALAYA, RISALI SECTOR
SUMMER VACATION HOME WORK (2026-27)
CLASS- XII **SUBJECT- AI (843)**
NOTE- Write all the questions and answers in the class work copy. Print out will not be accepted.
OBJECTIVES:

1. 1. Which of the following is a primary data structure in Pandas?
a) List b) Tuple c) Series d) Matrix

2) What does the fillna(0) function do in Pandas?
a) Removes rows with missing values b) Fills missing values with zeros
c) Estimates missing values based on averages d) Converts all data to zero

3. In Linear Regression, which library is typically used for importing and managing data?
a) NumPy b) Pandas c) Matplotlib d) Scikit-learn

4. What is the correct syntax to read a CSV file into a Pandas DataFrame?
a) pd.DataFrame("filename.csv") b) pd.read_csv("filename.csv")
c) pandas.read_file("filename.csv") d) pd.file_read("filename.csv")

5. What is the result of the df.shape function?
a) Data type of the DataFrame b) Number of rows and columns in the DataFrame
c) Memory usage of the DataFrame d) Column names of the DataFrame

6. Which function exports a DataFrame to a CSV file?
a) export_csv() b) to_file() c) to_csv() d) save_csv()

7. _ is a collection of pre-written code that performs common tasks.
a. Python libraries b. Python Pandas c. Python dataset d. None of the above

8. __ Python libraries handle large datasets.
a. NumPy b. Pandas c. Both a) and b) d. None of the above

9. __ Python library used for numerical computing.
a. SciPy b. TensorFlow c. NumPy d. Matplotlib

10. How you can import the NumPy library in Python.
a. Insert numpy as np b. import numpy as np c. import numpy in np d. None of the above

11. How will you create an array in Python?

a.
```
import numpy as np
arr = np.array([1, 2, 3])
```

b.
```
import numpy as np
arr = array([1, 2, 3])
```

c.
```
insert numpy as np
arr = array([1, 2, 3])
```

d.
```
import numpy as np
arr = np([1, 2, 3])
```

12. Which of the following data structures are provided by Pandas?
a. Series b. Data Frame c. Both a) and b) d. None of the above

13. CSV stands for _____.

14. How will you create a series using scalar values in a pandas data structure?

a. import pandas as pd
series1 = pd.series([10,20,30])

b. insert pandas as pd
series1 = pd.series([10,20,30])

c. import pandas as pd
series1 = series([10,20,30])

d. import pandas as pd
series1 = pd([10,20,30])

15. Which of the following library tools is used to read CSV files into data frames?
a. NumPy b. Pandas c. Matplotlib d. None of the above

16. Which of the following functions is used to import tabular data from a CSV file into a pandas DataFrame?
a. import_csv() b. read_csv() c. to_csv() d. None of the above

17. Define Data Types in Python with examples.

18. How can you handle missing values in Python?
a. Drop the row having missing values.
b. Estimate the missing value.
c. Both a) and b)
d. None of the above

19. Which function is used to check if the value is missing or not in the DataFrame?
a. null() b. is_null() c. isnull() d. None of the above

20. State whether True or False

a. A series object is size mutable.

b. A DataFrame object is value mutable

21. Which function is used to replace missing value(s) with the values specified in num?
a. fillna() b. fill() c. missing() d. duplicate()

22. A Pandas DataFrame is a _____- dimensional Data Structure.

23. How do you add a new row to a Pandas DataFrame?

a) df.add_row() b) df.append() c) df.insert() d) df.new_row()

24.State True or False: NumPy library is used for data visualization in Python.

25. Amrit is confused about different Python Libraries. Help him choose the correct library for the following tasks:

i) Data Analysis ii) Numerical Computations iii) Data Visualizations

SUBJECTIVES:

1. What is a Data Frame in Pandas?
2. How do you create a Pandas Series from a Dictionary?
3. What is the role of NumPy in Python programming?
4. Name two strategies to handle missing values in a Data Frame.
5. Explain the use of isnull() in Pandas.
6. Describe the steps to import and export data using Pandas.
7. Explain the concept of handling missing values in a Data Frame with examples.

8. What is Linear Regression and how it is implemented in Python?
9. Compare NumPy Arrays and Pandas Data Frame.
10. How can we add new rows and columns to an existing Data Frame? Explain with code examples.
11. What are the attributes of a Data Frame? Explain.
12. Explain the role of statistics in Python programming.
13. Write the output of the following code:

```
import numpy as np

arr = np.array([[1, 2, 3], [4, 5, 6]])
print("Array:\n", arr)
print("Shape:", arr.shape)
print("Dimensions:", arr.ndim)
```

14. Create a DataFrame as above with five rows and three columns, setting the row labels to the names of any five major US cities and the column labels to the first three months of the year.

15. What is the difference between a list, tuple and a dictionary?

Write the output of the following codes:

16.

```
import pandas as pd
Series1=pd.Series([100,200,300,400,500],index=['A','B','C','D','E'])
Series2=Series1*2
print(Series1)
print(Series2)
```

17. Consider a given Series , Series1:

```
200 700
201 700
202 700
203 700
204 700
```

Write a program in Python Pandas to create the series and display it.

18. Consider the following Series object, s

IP	**95**
Physics	**89**
Chemistry	**92**
Math	**95**

i. Write the Python syntax which will display only IP.
ii. Write the Python syntax to increase marks of all subjects by 10.

19. Write a code in Pandas to create the following DataFrames:

	df1		df2	
	Mark1	**Mark 2**	**Mark 1**	**Mark 2**
0	**10**	**150**	**30**	**20**
1	**40**	**451**	**20**	**25**
2	**15**	**302**	**20**	**30**
3	**40**	**703**	**50**	**30**

20. What is the purpose of Matplotlib Library?
21. What are some of the major components of any graph or plot?

22. Plot the following data using a line plot:

Day	1	2	3	4	5	6	7
Tickets Sold	2000	2800	3000	2500	2300	2500	1000

- Before displaying the plot display "Monday, Tuesday, Wednesday, Thursday Friday, Saturday, Sunday" in place of Day 1, 2, 3, 4, 5, 6, 7
- Change the color of the line to 'Magenta'.

23. Plot following data on bar graph:
English: 56,78,90,34
Science: 65,77,54,32
Maths: 45,67,43,41

Use the following data to perform the exercise.

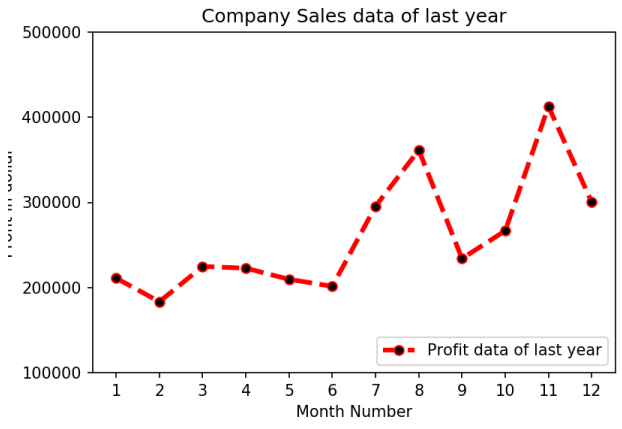
month_number	facecream	facewash	toothpaste	bathingsoap	shampoo	moisturizer	total_units	total_profit
1	2500	1500	5200	9200	1200	1500	21100	211000
2	2630	1200	5100	6100	2100	1200	18330	183300
3	2140	1340	4550	9550	3550	1340	22470	224700
4	3400	1130	5870	8870	1870	1130	22270	222700
5	3600	1740	4560	7760	1560	1740	20960	209600
6	2760	1555	4890	7490	1890	1555	20140	201400
7	2980	1120	4780	8980	1780	1120	29550	295500
8	3700	1400	5860	9960	2860	1400	36140	361400
9	3540	1780	6100	8100	2100	1780	23400	234000
10	1990	1890	8300	10300	2300	1890	26670	266700
11	2340	2100	7300	13300	2400	2100	41280	412800
12	2900	1760	7400	14400	1800	1760	30020	300200

24. **Get total profit of all months and show line plot with the following Style properties**

Generated line plot must include following Style properties: –

- Line Style dotted and Line-color should be red
- Show legend at the lower right location.
- X label name = Month Number
- Y label name = Sold units number
- Add a circle marker.
- Line marker color as read
- Line width should be 3

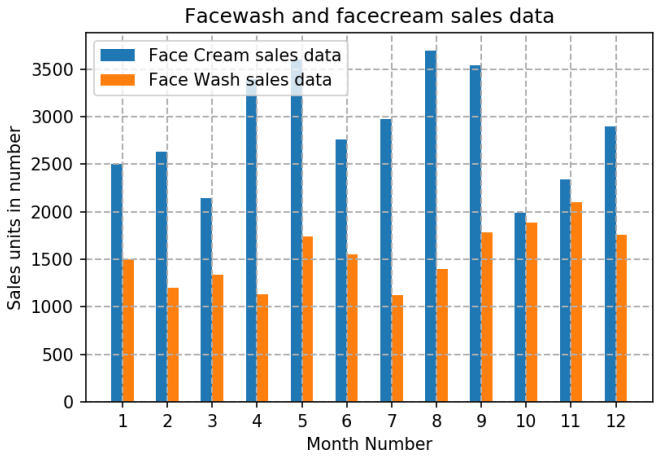
The line plot graph should look like this.



25. **Read face cream and facewash product sales data and show it using the bar chart**

The bar chart should display the number of units sold per month for each product. Add a separate bar for each product in the same chart.

The bar chart should look like this.



PROJECT: For Board Exams, it is compulsory for all the students to prepare a documentation of a project. You can select any of the topic mentioned in the link and prepare the project documentation.

Click on the link for the details:

https://cbseacademic.nic.in/web_material/Curriculum25/publication/srsec/843_AI_Projects_Cookbook.pdf

SHARDA VIDYALAYA RISALI SECTOR, BHILAI

Vacation Homework

Class – 12 **Subject – Information Technology (802)**

OBJECTIVE TYPE QUESTIONS

Fill in the Blanks / Choose the Correct Option

1. _____ refers to the ability to understand and manage one's own emotions.
   (A) Self-awareness (B) Motivation (C) Stress (D) Communication
2. _____ is the process of exchanging ideas and information.
   (A) Writing (B) Communication (C) Thinking (D) Listening
3. _____ is a barrier caused due to use of difficult language.
   (A) Physical barrier (B) Emotional barrier (C) Semantic barrier (D) Cultural barrier
4. The ability to stay calm under pressure is called _____.
   (A) Anger (B) Stress tolerance (C) Fear (D) Laziness
5. _____ is the act of carefully listening and responding.
   (A) Passive listening (B) Active listening (C) Silent listening (D) Hearing
6. _____ is the process of planning and organizing time effectively.
   (A) Goal setting (B) Time management (C) Stressing (D) Thinking
7. A person who starts and manages a business is called _____.
   (A) Employee (B) Entrepreneur (C) Manager (D) Worker
8. _____ involves creating new ideas or methods.
   (A) Innovation (B) Risk (C) Loss (D) Planning
9. _____ is the internal drive to achieve goals.
   (A) Stress (B) Motivation (C) Fear (D) Pressure
10. _____ is the final response given by the receiver.
    (A) Noise (B) Feedback (C) Channel (D) Message

Case-Based / Assertion Type Questions

11. Rahul avoids speaking in class due to fear of being judged. This shows lack of _____.
    (A) Confidence (B) Communication (C) Knowledge (D) Skill
12. Meena plans her daily tasks and completes work on time. This shows good _____.
    (A) Stress (B) Time management (C) Laziness (D) Fear
13. Arjun starts a startup despite uncertainty and risk. He is a/an _____.
    (A) Employee (B) Entrepreneur (C) Worker (D) Manager
14. Use of gestures and facial expressions is called _____ communication.
    (A) Verbal (B) Written (C) Non-verbal (D) Formal
15. Priya feels nervous before exams and cannot focus. This is _____.
    (A) Motivation (B) Stress (C) Confidence (D) Planning
16. A business suffers due to lack of proper planning. This shows absence of _____.
    (A) Risk (B) Business plan (C) Profit (D) Communication
17. Ramesh listens carefully and asks questions. He is practicing _____.
    (A) Passive listening (B) Active listening (C) Hearing (D) Ignoring

18. A person who avoids responsibilities shows lack of _____.
    (A) Discipline (B) Confidence (C) Motivation (D) Skill
19. Investing money in a new idea involves _____.
    (A) Fear (B) Risk-taking (C) Laziness (D) Loss
20. Effective communication requires _____.
    (A) Clarity (B) Confusion (C) Noise (D) Anger

Application Based

21. Neha fails in exams but decides to work harder next time. This shows _____.
    (A) Negative thinking (B) Resilience (C) Fear (D) Stress
22. A company introduces a new product in the market. This is _____.
    (A) Loss (B) Innovation (C) Risk avoidance (D) Planning
23. Poor internet connection during online class is a _____ barrier.
    (A) Emotional (B) Physical (C) Semantic (D) Psychological
24. A person motivates himself without external rewards shows _____ motivation.
    (A) External (B) Internal (C) Negative (D) Forced
25. A successful entrepreneur always focuses on _____.
    (A) Avoiding risk
    (B) Customer satisfaction
    (C) Ignoring market
    (D) Copying others

SUBJECTIVE TYPE QUESTIONS

1. Briefly explain the term **communication**.

_____

2. Riya gives a presentation but students look confused.
   Identify one possible **communication barrier** and suggest one solution.

_____

3. In order to learn a language, one needs to develop four main skills.
   Name them.

_____

4. Aman listens to the teacher carefully and asks questions.
   Which type of listening is this? Explain briefly.

_____

5. Briefly explain the following terms:
   (a) Personality
   (b) Personality traits

_____

6. During an online class, poor internet interrupts communication.
   Identify the type of barrier and explain.

_____

7. What is **active listening**? Mention any two features.

_____

8. A student uses gestures and facial expressions while speaking.
   Which type of communication is this? Explain briefly.

_____

9. Briefly explain the term **motivation**.

_____

10. Rahul studies only one day before exams and feels stressed.
    Suggest any two **time management techniques** for him.

_____

11. What do you mean by **organisational skills**?

_____

12. Neha fails in an exam but decides to work harder.
    Which quality is shown here? Explain briefly.

_____

13. What is **stress**? Mention any two causes.

_____

14. A student feels anxious before exams.
    Suggest any two **stress management techniques**.

_____

15. What is **goal setting**? Why is it important?

_____

16. Meena plans her daily tasks and completes them on time.
    Which skill is she using? Explain briefly.

_____

17. Who is an **entrepreneur**?

_____

18. Shristi owns a construction company and takes risky decisions for growth.
    What quality is she showing? Explain.

_____

19. What is **entrepreneurship**?

_____

20. A startup fails due to lack of planning.
    Which concept is missing? Explain briefly.

_____

21. Mention any four common **environmental barriers** faced by entrepreneurs.

_____

22. A business introduces a new product in the market.
    What is this concept called? Explain.

_____

23. Write any two benefits of goal setting by an entrepreneur.

_____

24. What are the different stages of active listening ? Write the names of any

_____

25. Write any two ways to maintain positive attitude.

_____

NOTE: THE ANSWERS OF ALL THE QUESTIONS MUST BE WRITTEN IN THE CLASS WORK COPY ALONG WITH THE QUESTIONS.

SHARDA VIDYALAYA, RISALI

SUMMER VACATION HOMEWORK

CLASS- XII SUBJECT- YOGA

A. MULTIPLE CHOICE QUESTIONS

1. Which statement best explains the significance of Shatkarma in yoga sadhana?
   A. It develops muscular strength
   B. It prepares the body for higher yogic practices by purification
   C. It is mainly for weight reduction
   D. It replaces asana practice
   Ans_____

2. According to yogic texts, Shatkarma is primarily recommended for:
   A. Advanced practitioners onlyB. Beginners with impure body-mind condition C. Only athletes D. Children only
   Ans_____

3. Which combination correctly represents Shatkarma practices?
   A. Asana, Pranayama, Dhyana
   B. Neti, Dhauti, Basti, Nauli, Trataka, Kapalbhati
   C. Yama, Niyama, Asana
   D. Bandha, Mudra, Dharana
   Ans_____

4. The major physiological effect of Kapalbhati is on:
   A. Skeletal system B. Digestive and respiratory system
   C. Circulatory system only D. Nervous system only
   Ans_____

5. The principle "SthiraSukhamAsanam" implies:
   A. Fast and dynamic posture B. Steady and comfortable posture
   C. Competitive posture D. Painful stretching
   Ans_____

6. Which of the following best explains the therapeutic role of Yogasana?
   A. It replaces medical treatment completely
   B. It supports prevention and management of lifestyle disorders
   C. It only improves flexibility
   D. It is only spiritual practice
   Ans_____

7. In Yogasana practice, breath coordination is important because it:
   A. Increases fatigue B. Enhances mind-body harmony
   C. Stops blood flow D. Reduces posture stability
   Ans_____

8. Which asana is commonly used to improve digestive function?
   A. Vajrasana B. Shavasana C. Tadasana D. Halasana.

Ans_____

9. Which of the following is NOT a benefit of Pranayama?
A. Improved lung capacity B. Stress reduction
C. Increased mental instability D. Better oxygenation

Ans_____

10. A key difference between physical exercise and yogasana is:
A. Yogasana is fast and competitive
B. Exercise focuses on strain, yogasana focuses on balance and awareness
C. Both are identical
D. Exercise involves meditation only

Ans._____

11.The correct definition of Pranayama according to yogic philosophy is:
A. Control of body posture
B. Expansion and regulation of prana through breath control
C. Muscle strengthening
D. Relaxation through sleep
Ans_____

12.Which physiological system is most directly influenced by Pranayama?
A. Respiratory system B. Skeletal system C. Excretory system
D. Endocrine system only
Ans_____

13. In AnulomVilom, the primary objective is to:
A. Increase heart rateB. Balance ida and pingalanadi
C. Strengthen bonesD. Improve digestion only
Ans_____

14 The main psychological effect of meditation is on:
A. Reflex action B. Mind and nervous system regulation
C. Bone density D. Blood group
Ans_____

15.Bhramari Pranayama is particularly effective for:
A. Bone strength B. Mental calmness and stress relief
C. Weight gain D. Eye muscle training
Ans_____

16..Dhyana in Ashtanga Yoga is best described as:
A. Physical posture B. Continuous flow of concentration on a single object
C. Breathing exercise D. Physical relaxation only
Ans_____

17.Which is the correct sequence in Ashtanga Yoga leading to Dhyana?
A. Asana → Pranayama → Pratyahara → Dhyana
B. Yama → Asana → Dhyana directly
C. Pranayama → Asana → Yama → Dhyana
D. Niyama → Asana → Karma → Dhyana
Ans_____

18. Regular practice of Dhyana leads to:
A. Increased distraction B. Improved emotional stability
C. Reduced sleep quality D. Physical weakness
Ans_____

19.A student feels high stress and poor concentration. The best yogic combination is:
A. Neti + Dhauti B. Asana + Pranayama + Dhyana
C. Only weight training D. Only diet control
Ans_____

20. Shatkarma is most important at the beginning of yoga practice because it:
A. Builds muscles quickly
B. Cleanses internal systems for advanced practices
C. Replaces meditation
D. Increases competition ability
Ans_____

21.statement is most accurate?
A. Yogasana is only physical
B. Pranayama is only breathing without mental effect
C. Yoga integrates body, breath, and mind
D. Dhyana is physical exercise
Ans_____

22. Which qualification is most relevant for becoming a certified yoga instructor in India?
A. Engineering degree B. Diploma/degree in Yoga education
C. Medical degree only D. Law degree
Ans_____

23.A yoga therapist primarily works in:
A. Construction industry B. Hospitals and wellness clinics
C. Banking sectorD. IT companies
Ans_____

24.Increasing global demand for yoga careers is mainly due to:
A. Fashion trends B. Lifestyle-related health disorders
C. Sports competition D. Entertainment industry

Ans_____

25.Which skill is MOST essential for a successful yoga professional?
A. Coding ability
B. Practical teaching and knowledge of yogic science
C. Accounting skills
D. Driving skills
Ans_____

B. VERY SHORT QUESTIONS ANSWER

Q1. What is Shatkarma?

_____

Q2. Name the six purification processes of Shatkarma.

_____

Q3. What is the purpose of Shatkarma?

_____

Q4. Define Yogasana.

_____

Q5. Write two principle of Yogasana.

_____

Q6. Explain one benefit of Yogasana.

_____

Q7. Name any two sitting asanas.

_____

Q8. What is Dhyana?

_____

Q9. Give one benefit of Pranayama.

_____

Q10. Write the different elements of meditation.

_____

Q11. Write two benefits of Dhauti.

_____

C. SHORT QUESTION ANSWER

Q1.Write the names of any two asanas done in each of the following positions – a. Standing b. Sitting.

Q2.Explain the meaning and principles of Yogasana.

Q3. Explain Neti and write any two benefits of it?

Q4. What are precautions for trataka?

Q5. Describe Lotus pose (Padmasana) and give its benefits and contraindication.

Q.6 Explain Nauli and its precautions?

Q.7What is called as cooling breath and explain its benefits.

Q.8 Write any four benefits of Pawanmuktasana.

D. LONG QUESTION ANSWER

Q1. Explain the health benefits of yoga asanas.

Q2. What are two types of Trataka and explain them.

Q3. What is Tadasana? Explain its benefits and limitations.

Q4. Explain RelaxativeAsanas, its type s and benefits.

Q5. Explain any five Standing Asanas with their benefits and contraindications.

Q6. After12th, what are the career opportunities that you may consider in Yoga. Explain briefly.

SHARDA VIDYLAYA RISALI

Class-XII **SUMMER VACATION HOMEWORK**

SUBJECT- MARKETING AND SALES

1. This is the only element that generates revenue for an organization and determines growth:

(a)Price (b) Promotion (c) Place (d) Product

ANS----------\

2. Which out of the following is not included in the components of a product?

(a) Associated feature (b) Core product (c) Logo (d) Brand mark

ANS----------

3. Which 'P' is mostly used as a need-satisfying entity?

ANS----------

4. Product represents solution to ..... problems.

5. Product is anything that can be offered to someone to satisfy a ..... or a.....

6. When diverse products belonging to same category are manufactured by a company but have different brand names are called:

(a) Store brand (b) Family brand (c) Individual brand (d) Family brand

ANS----------

7. Symbols and pictures ensure ..... identifications

8. Product improvements, product modifications and original products can all be classified as.....

(a) Pioneer products (b) New products (c) Product concepts (d) Product ideas

ANS----------

9. Product improvements, product modifications and original products can all be classified as.....

(a) Pioneer products (b) New products (c) Product concepts (d) Product ideas

ANS----------

10. AC for factory use is:

(a) Company (b) Industrial (c) Personal (d) Employee

ANS----------

11. .This unique ''P'' has its own identity or personality:

(a) Product (b) Price (c) Place (d) Promotion

ANS----------

12. Which P is a complex of tangible and intangible attributes, including packaging, colour and services that satisfy needs and wants of people?----------

13. Products have their own ..... or a.....

14. A ..... is defined as a name, term, symbol, design or a combination of them which is intended to identify the goals & services of one seller and to differentiate them. \\\

15. Product is the ..... and all the marketing activities revolve around it.

16 ..... is the unbranded and undifferentiated commodity.

17. Which of the following is NOT a potential reason for a new product to fail?

a) An underestimated market size (b) A poorly designed product
(c) An incorrectly positioned product (d) Higher than anticipated costs of product development

ANS_____

18. Which of the following is NOT a challenge presented by the product life cycle that a firm must face?

(a) All products eventually decline.

(b) Changing tastes, technologies and competition affect the marketing of the product as it passes through life cycle stages.

(c) A firm must be good at adapting its marketing strategies.

(d) It is difficult to plot the stages as a product goes through them.

19. New product development starts with.....

(a) Idea generation (b) Idea screening (c) Concept development (d) Concept testing

20. The ..... is the modified product to suit to the requirement/specifications of the individual customer.

21. The ..... aims to enhance the value of the product/offer through voluntary improvements.

22. The potential product is the ..... inclusive of the advancement and refinement that is possible under the existing circumstances.

ANS----------

23. Which type of packaging was used to protect the product from damage en-route and to facilitate handling at various points of distribution?

(a) Conventional packaging (b) Branded packaging (c) Trendy packaging (d) All of these

24. It provides written information about the product helping the buyer to understand the nature of the product its distinctive features

(a) Brand (b) Logo (c) Package (d) Label

25. The needs of the customer are identified through market research and the insights thus obtained are used to add new features to the product

(a) Core benefit (b) Augmented product (c) Differentiated product (d) Potential product

26. A deliberate alteration in the physical attributes of a product or its packaging is called

(a) Product Modification (b) Product differentiation (c) Product Diversification (d) Product repositioni ng

27. Which of the following is NOT included in product decisions?

(a) Styling (b) Brand name (c) Warehousing (d) Packaging

Short Answer Type Questions–I (2 Marks)

28. Define the term product in the marketing context.

_____

29. Define the term consumer product.

_____

30. Differentiate between convenience products and shopping products.

_____

31. Explain the concept of the product life cycle.

_____

32 Explain the meaning of product differ nation.

_____

33. Provide an example of a product in the maturity stage of its life cycle.

_____

34. Explain the term product positioning in the context of the product life cycle.

_____

35. Explain the concept of primary packaging.

_____

36. Define core product.

---

37. Explain the purpose of secondary packaging.

_____

38. When is bulk packaging commonly used?

---

39. What information is typically found on regulatory labels and explain the significance of brand label

._____

40. Why is active listening important in the workplace?

ANS ----------

_____

41. Discuss the core tangible and augmented product for your favorite brand of bathing soap.

ANS_____-

---

42. How does the most critical skill in effective communication benefit any salesman in his career?

_____

Long Answer Question

43. Products have their own identity & personality. Most of the users associate meaning with products which given them satisfaction. A customer never just purchases the core product but also needs much more than just the basic element of the product. Describe the other components of the product that contribute to making the 'total product offering'. Explain with the help of any four examples.

Ans_____

_____

44. Explain the types of industrial products.

ANS_____

_____

_____

45. Explain the different types of consumer products.

Ans_____

_____

46. Explain the stages of active listening.

Ans_____

_____

47. Explain the product lifecycle stages with an example.

ANS_____

_____

48. Describe the role of labeling in product.

ANS_____

_____

49. Discuss the importance of packaging as a tool for foe product differentiation and market cultivation.

ANS_____
_____
_____

50. "Packaging has been criticized as being expensive, giving no additional value and often deceptive." How would you justify marketer's use of packaging?

ANS_____
_____
_____

SHARDA VIDYALAYA RISALI

SUMMER VACATION WORK

CLASS: 12th **SUBJECT: Kathak**

Q.1. MCQ

1. how many Gharana are there in Kathak Nritya?

(a).2 **(b).4**

(c).4 **(d).6**

2. What do you mean by Story Teller ?

(a). Kathak **(b).mahari**

(c). devdasi **(d).kushilava**

3. Kathak nritya belongs to which part of India ?

(a). Western **(b).Eastern**

(c).Northern **(d).southern**

4. In how many parts classical dances of India are divided ?

(a). 4 **(b). 3**

(c). 2 **(d).6**

5. Who is Nattuvan?

(a). Dancer **(b). Teacher**

(c). Priest **(d).Guru**

6. Which part of Bharatanatyam is same as Ahmed of Kathak nritya

(a).Allaripu **(b).Javalli**

(c).Varnam **(d).Padam**

7. When did Shambhu Maharaj ji received Sangeet Natak academy award?

(a).1967 **(b).1963**

(c).1964 **(d).1966**

8. When did Shambhu Maharaj ji born?

(a).1904 (b).1908

(c).1906 (d).1907

9. When did Shambhu Maharaj ji die?

(a).1968 (b).1969

(c).1970 (d).1972

10. When did pandit Narayan Prasad ji born?

(a). 1908 (b).1910

(c). 1911 (d).1909

11. When did pandit Narayana ji received the title Nrityacharya ?

(a). 1956 (b).1958

(c). 1957 (d). 1959

12. When did Birju Maharaj ji born?

(a).1938 (b).1937

(c).1934 (d).1936

13. When did Birju Maharaj ji die ?

(a).2022 (b).2021

(c).2020 (d).2019

14. Which one of these is a Persian word

(a). Toda (b).Amad

(c). Paran (d).Thata

15. Tatkaar syllables are used specifically in which content of Kathak nritya?

(a).Tukda (b).Tihayi

(c). Premelu (d).Amad

16. Invocation to God is done in which part of Kathak Nritya?

(a). Vandana (b).Salami

(c). Thumri (d).Gat Bhava

17. With which content of Kathak Nritya, a paran can be prefixed?

(a). Thata **(b).Amad**

(c).Toda **(d).Tukda**

18. First beat of any tala is known as?

(a).Matra **(b). Sam**

(c). Taali **(d) None of those**

19. In which content bols are repeated thrice?

(a).Amad **(b).Tukda**

(c).Tihayi **(d).paran**

20. In which classical dance of India dancer especially wears silver jewellery?

(a).Odissi **(b).Kathak**

(c).Mohiniattam **(d).Sattriya**

21. Complete the Tala dha ge na ti ____?

(a).Dha ke na to **(b).Na ge dha to**

(c). Nake dhi na **(d). Dha ge dha te**

22. Khali Matra TeenTal is at _____?

(a). 8 **(b).9**

(c).10 **(d).12**

23. Paran is related to _____?

(a).Dholak **(b).Kavitt**

(c).pakhawaj **(d).Satvika**

24. How many types of Rasas are there?

(a).7 **(b).8**

(c).9 **(d).11**

25. Speed of time spend in music is called?

(a).Laya **(b).Matra**

(c).Taal **(d).Vibhag**

Q.2 QUE/ANS

1. **Write detail about Shambhu Maharaj ji?**
2. **Write about any female artist of Lucknow or Banaras Gharana?**
3. **What do you know about Narayana Prasad ji?**
4. **What do you know about Birju Maharaj ji?**
5. **Write in detail about any male artist of Jaipur Gharana?**
6. **What do you know about the renowned Guru,artist and choreographer uma Sharma ji ?**
7. **What do you know about Mata Prasad Mishra ji ?**
8. **Define Vandana or Guru Vandana.**
9. **Define Amad with an example.**
10. **Define toda or tukda, with an example.**
11. **Define and notate one paran or premulu.**
12. **Define and notate one tihayi.**
13. **Explain the term thumri or Tarana.**
14. **What do you know about thaat or Bhajan ?**
15. **What do you know about Gat nikaas or Gat Bhava ?**
16. **What do you know about Sangeeta or Bhava ?**
17. **Define Gati or Utplavana.**
18. **Explain Bhramari .**
19. **Define Rasa or Bhava.**
20. **Define tala.**
21. **Describe Sam or Tali aur Khali**
22. **what do you know about laya?**
23. **Define Abhinaya.**
24. **What is Rasa?**
25. **Define any two types of Rasa.**