

DAV Public School SECL Korba

Class : 12

Summer Holiday Home Work - 2024

Subject: English

1. Do an investigatory project on how language United Indians during freedom struggle and also mention the literature used in these languages during the period.(It is to be done in the file with supporting pictures)

2. Draw a comparison between the two lessons the Adventure from class 11 th and the lesson third level of class 12 on the basis of the following points

1. Plot

2. Theme

3. Characters.

Both the above works are to be submitted in a project file.

ग्रीष्मकालीन गृह कार्य

विषय- हिंदी, कक्षा-बारहवीं

1. भक्तिन की बेटी के मामले में जिस तरह का फैसला पंचायत ने सुनाया, वह आज भी कोई हैरत-अंगेज बात नहीं है अखबारों या टी वी समाचारों में आने वाली किसी ऐसी ही घटना को 'भक्तिन' के उस प्रसंग के साथ रखकर परियोजना कार्य बनाइए।
2. पांच वर्ष की आयु में होने ब्याही जानी वाली लड़कियों में सिर्फ भक्तिन नहीं है बल्कि आज भी हजारों अभागिनियां हैं। बालविवाह और उम्र के अनमेलपन वाले विवाह की अपने आसपास हो रही घटनाओं पर परियोजना बनाइए।
3. 'सिल्वर वेडिंग' व 'भक्तिन' पाठ के 15-15 प्रश्नों के उत्तर लिखकर याद करें।

Subject: IP

Prepare a project choosing one of the following topics with the help of SDLC (System Design Life Cycle) in python with CSV programming language after collecting data.

1. Library Management
2. Hospital Management
3. Medical Shop Management
4. Post Office Management
5. Computer Shop Management
6. Book Shop Management
7. Auto Shop Management
8. Courier Management System
9. Traffic Control System
10. Pharmacy Management
11. Account Management
12. School Management
13. Student Record Management
14. Restaurant Management
15. Hotel Management
16. Hostel Management
17. Tour Management System
18. Fee Management System
19. Mobile Shop Management System
20. AI, ML, NLP, Gaming.
20. Policy Management.

Students can make their projects other than the above mentioned topics.

PE

1. What is league tournament? Draw a fixture of nine (9) teams on the basis of league tournament using cycle method and explain british method to declare the winner.
2. Draw a knock –out fixture of 21 teams mentioning all the steps involved.
3. Define combination tournament ? Draw a fixture of 16 teams using knock – out cum league method.
4. Elucidate the pre, during and post game responsibilities of officials of various committees for the organizing a sports tournaments smoothly.
5. What do mean by specific sports programmes ? Explain all the point.
6. Define and classify fixtures.
7. Draw a fixture of nine (9) teams on the basis of league tournament using staircase method.

8. Briefly explain the advantage and disadvantage of knock- out tournament
9. List the steps to form committees for tournament.
- 10.Explain all the methods of deciding the winner in league tournament.
- 11.Briefly explain the significance of extramural competition.

Subject: Biology

- Q.1. In angiosperms, zygote is diploid while primary endosperm cell is triploid. Explain.
- Q.2. Why is bagging of the emasculated flowers essential during hybridization experiments?
- Q.3. A pollen grain in angiosperm at the time of dehiscence from an anther could be 2-celled or 3-celled. Explain. How are the cells placed within the pollen grain when shed at a 2-celled stage?
- Q.4. Explain the significance of meiocytes in a diploid organism.

Q.5. In a young anther, a group of compactly arranged homogenous cells were observed in the centre of each microsporangium. What is the name given to these cells?

Q.6. A bilobed, dithecous anther has 100 microspore mother cells per microsporangium. How many male gametophytes this anther can produce?

Q.7. An anther with malfunctioning tapetum often fails to produce viable male gametophytes. Give any one reason.

Q.8 Pollen grains of water pollinated species have a special characteristics for protection from water. What is that?

Q.9 What is funiculus?

Q.10 Why is emasculation done in the process of hybridization?

Q.11 (a) Name the organic material exine of the pollen grain is made up of. How is this material advantageous to pollen grain?

(b) Still it is observed that it does not form a continuous layer around the pollen grain. Give reason.

(c) How are 'pollen banks' useful?

Q.12. What relationship exists between a species of moth and Yucca plant?

Q.13 Where is sporopollenin present in plants? State its significance with reference to its chemical nature.

Q.14. Why pollen grains can remain well preserved as fossils?

Q.15 Differentiate between albuminous and non-albuminous seeds, giving one example of each.

Q.16. (a) Describe the endosperm development in coconut.

(b) Why is tender coconut considered a healthy source of nutrition?

(c) How are pea seeds different from castor seeds with respect to endosperm.

Q17. In a Mendelian monohybrid cross, the F_2 generation shows identical genotypic and phenotypic ratios. What does it tell us about the nature of alleles involved? Justify your answer.

Q18. Can a child have blood group O if his parents have blood group 'A' and 'B'. Explain

Q19. A plant with red flowers was crossed with another plant with yellow flowers. If F_1 showed all flowers orange in colour, explain the inheritance.

Q20. What is the cross between the progeny of F_1 and the homozygous recessive parent called? How is it useful?

Q21. Differentiate between multiple allelism and pleiotropy with the help of an example of each.

Q22. Explain polygenic inheritance with the help of a suitable example.

Q23. In pea plants, the colour of the flower is either violet or white, whereas human skin colour shows many gradation. Explain giving reasons how it is possible.

Q24. What is the inheritance pattern observed in the size of starch grains and seed shape of *Pisum sativum*. Work out the monohybrid cross showing the above traits. How does this pattern of inheritance deviate from that of Mendelian law of dominance?

Q25. Name the pattern of inheritance where F_1 phenotype (i) resembles only one of the two parents. (ii) that does not resemble either of the two parents and is in between the two.

SUBJECT- PHYSICS

- I. Complete your notebook and learn the taught portion.
- II. Complete the assigned experiments in your lab manual copy.
- III. Solve the given questions in your notebook.

1. Two point charges $+8q$ and $-2q$ are located at $x = 0$ and $x = L$, respectively. The point on X-axis at which net electric field is zero due to these charges, is

- (a) $8L$
- (b) $4L$
- (c) $2L$
- (d) L

2. An electric dipole of moment p is placed parallel to the uniform electric field. The amount of work done in rotating the dipole by 90° is

- (a) $2pE$
- (b) pE
- (c) $pE/2$
- (d) zero

3. Two point charges placed in a medium of dielectric constant 5 are at a distance r between them, experience an electrostatic force F . The electrostatic force between them in vacuum at the same distance r will be

- (a) $5F$
- (b) F
- (c) $F/2$
- (d) $F/5$

4. A cylinder of radius and length l is placed in an uniform electric field parallel to the axis of the cylinder. The total flux for the surface of the cylinder is given by

- (a) zero
- (b) πr^2
- (c) $E\pi r^2$

(d) $2E\pi r^2$

5. Two parallel large thin metal sheets have equal surface densities $26.4 \times 10^{-12} \text{ C/m}^2$ of opposite signs. The electric field between these sheets is

(a) 1.5 N/C

(b) $1.5 \times 10^{-16} \text{ N/C}$

(c) $3 \times 10^{-10} \text{ N/C}$

(d) 3 N/C

6. An electrical dipole is placed in an uniform electric field with the dipole axis making an angle θ with the direction of electrical field. The orientation of the dipole for stable equilibrium is

(a) $\pi/6$

(b) $\pi/3$

(c) 0

(d) $\pi/2$

7. A point charge $+ 10 \mu\text{C}$ is at a distance 5 cm directly above the centre of a square of side 10 cm, as shown in figure. What is the magnitude of the electric flux through the square?

(a) Zero

(b) $8 \times 10^2 \text{ Nm}^2 \text{ C}^{-1}$

(c) $1.8 \times 10^4 \text{ Nm}^2 \text{ C}^{-1}$

(d) $1.8 \times 10^5 \text{ Nm}^2 \text{ C}^{-1}$

8. Electric field at a point varies as r° for

(a) Point charge

(b) Dipole

(c) Line charge

(d) Infinite plane sheet of charge

9. Two spheres have their surface charge densities in the ratio of 2 :3 and their radii 3 :2. The ratio of the charges on them is:

- (a) 3:2
- (b) 4:2
- (c) 2:3
- (d) 2:4

10. The force between 2 charges 0.06m apart is 5 N. If each charge is moved towards each other by 0.04 m then the force between them will become

- (a) 7.20 N
- (b) 11.25 N
- (c) 22.50 N
- (d) 45.00 N

ASSERTION AND REASONING QUESTIONS

While answering these questions, you are required to choose any one of the following four responses.

- (a) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
- (b) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
- (c) If the Assertion is correct but Reason is incorrect.
- (d) If both the Assertion and Reason are incorrect.

1. **Assertion:** When we produce charge q_1 on a body by rubbing it against another body which gets a charge q_2 in the process then $q_1 + q_2 = 0$.

Reason: Charge on an isolated system remains constant.

2. **Assertion:** Electric line of force cross each other.

Reason: Electric field at a point does not superimposes to give one resultant electric field.

3. **Assertion:** On going away from a small electric dipole electric field decreases.

Reason: Electric field is inversely proportional to square of distance from an electric dipole.

4. **Assertion:** The electric flux of the electric field $\oint E \cdot dA$ is zero. The electric field is zero everywhere on the surface.

Reason: The charge inside the surface is zero.

5. **Assertion:** If a point charge be rotated in a circle around a charge, the work will be zero.

Reason: Work done is equal to dot product of force and distance.

6. **Assertion:** If a conducting medium is placed between two charges, then electric force between them becomes zero.

Reason: Reduction in a force due to introduce material is inversely proportional to dielectric constant.

7. **Assertion:** Charge is quantized.

Reason: Charge which is less than 1C is not possible .

8. **Assertion:** Excess charge on a conductor resides entirely on the outer surface.

Reason: Like charges repel one another.

9. **Assertion:** When a neutral body is charged negatively, its mass increases slightly.

Reason: When a body is charged negatively, it gains some electrons and electron has finite mass; though quite small.

10. **Assertion:** As force is a vector quantity, hence electric field intensity is also a vector quantity.

Reason: The unit of electric field intensity is Newton per coulomb.

Subject: Mathematics

1. Solve miscellaneous exercise of matrices.
2. Solve miscellaneous exercise of determinant.
3. Solve miscellaneous exercise of chapter -1 Relation and Function.
4. Find the minor of the elements of second Row and third Column in the following determinants

$$(a) \begin{vmatrix} 2 & -3 & 5 \\ 6 & 0 & 4 \\ 1 & 5 & -7 \end{vmatrix}$$

$$(b) \begin{vmatrix} 5 & 3 & 8 \\ 2 & 0 & 1 \\ 1 & 2 & 3 \end{vmatrix}$$

5. What is the value of Determinant

$$\begin{vmatrix} 0 & 2 & 0 \\ 2 & 3 & 4 \\ 4 & 5 & 6 \end{vmatrix}$$

6. Find the value of x if the area of triangle is 35 square cm with vertices $(x,4)$, $(2,-6)$ and $(5,4)$.
7. Find the value of y so that the points $(1,-5)$, $(-4,5)$ and $(y,7)$ are collinear.
9. Find the value of x so that the points $(3,-2)$, $(x,2)$ and $(8,8)$ are collinear.
10. Find the equation of line joining $A(1,3)$ and $B(0,0)$ using determinants and find k if $D(k,0)$ is a point such that area of $\triangle ABD$ is 3 square units.
11. Solve the following system of equation by using determinants;

$$(a) \quad X + y + z = 1$$

$$X + 2z = 7$$

$$3X + y + z = 12$$

$$(b) \quad \frac{2}{x} + \frac{3}{y} + \frac{10}{z} = 4,$$

$$\frac{4}{x} - \frac{6}{y} + \frac{5}{z} = 1,$$

$$\frac{6}{x} + \frac{9}{y} - \frac{20}{z} = 2$$

12. An amount of Rs10000 is put into three investments at the rate of, 10%, 12%, and 15% per annum. The combined income is Rs 1310 and the combined income of first and second investment is Rs 190 short of the income from the

third. Find the investment in each using matrix method.

13. A company produces three products every day. Their production on a certain day is 45 tons. It is found that the production of third product exceeds the production of first product by 8 tons while the total production of first and third product is twice the production of second product. Determine the production level of each product using matrix method.

14. A school wants to award its students for the value of Honesty, Regularity and hardwork with a total cash prize of 6000. Three times the award money for Hardwork added to that given for honesty amounts to Rs 11000. The award money given for Honesty and Hardwork together is double the one given for Regularity. Represent the above situation algebraically and find the award for each value, using matrix method.

15. If A is a square matrix of 3 such that $|adjA| = 64$, then find $|A|$

16. If $\begin{vmatrix} x+1 & x-1 \\ x-3 & x+2 \end{vmatrix} = \begin{vmatrix} 4 & -1 \\ 1 & 3 \end{vmatrix}$, then find the value of x .

17. For what value of x , the matrix $\begin{bmatrix} 2x & 4 \\ x+2 & 3 \end{bmatrix}$ is a singular matrix?