DAV PUBLIC SCHOOL SECL KORBA

Summer Holiday Home Work 2025-26

Class: XII

Subject	Topic
English	1. Design the cover page of the novel " SilasMarner" by George Eliot and write its preface and review of the book in a file. 2. Both the lesson the last lesson and lost spring talk about the importance of education in a child's life. With reference to this bring out the situations that deprived Saheb and Franz from learning.(do it in literature copy) 3. Using pictures bring out the various images and symbols used in the poem My mother at 66.(Enrichment copy) 4. Write an article on any one of the given topics- a. Child labour is a blot on our society b. Elders need to be taken care of both physically and emotionally.(do in Enrichment copy)
Physics	SUBJECT- PHYSICS I. Complete your notebook and learn the taught portion. II. Complete the assigned experiments in your lab manual copy. III. Make an attractive formula sheet,writing all the formulae used in Ch-1 and 2. IV. 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) 8 L(b) 4 L(c) 2 L(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 then 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 $x10^{-12}$ C/m^2 of opposite signs. The electric field between these sheets is (a) 1.5 N/C(b) $1.5x10^{-16}$ N/C(c)$3x10^{-10}$ N/C(d) 3 N/C 6. An electrical dipole is placed in an unform 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) π/6 (b) π/3 (c) 0 (d) π/2 7. A point charge + 10 μC 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 x 10^2 Nm^2C^{-1}(c) 1.8 x 10^4 Nm^2 C^{-1}(d)1.8 x 10^5Nm^2 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 0.0 6m 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

11. The electrostatic potential on the perpendicular bisector due to an electric dipole is _____.
(a) Zero (b) 1 (c) Infinite (d) Negative

12. The work done in moving a unit positive test charge over a closed path in an electric field is _____.
(a) Always 1 (b) Infinite (c) Zero (d) Negative

13. The capacity of the parallel plate capacitor increases when
(a) area of the plate is decreased
(b) area of the plate is increased
(c) distance between the plates increases
(d) None of the option

14. A test charge is moved from lower potential point to a higher potential point. The potential energy of test charge will
(a) remain the same (b) increase (c) decrease (d) become zero

15. When air is replaced by a dielectric medium of constant K, the maximum force of attraction between two charges separated by a distance
(a) increases K times (b) remains unchanged
(c) decreases K times (d) increases K^{-1} times

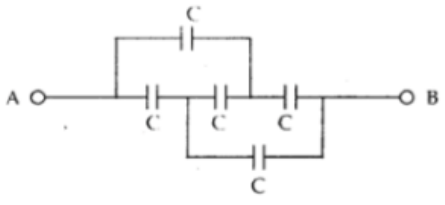
16. If a conductor has a potential $V \neq 0$ and there are no charges anywhere else outside, then
(a) there must be charges on the surface or in¬side itself.
(b) there cannot be any charge in the body of the conductor.
(c) there must be charges only on the surface.
(d) both (a) and (b) are correct.

17. Two identical capacitors are joined in parallel, charged to a potential V, separated and then connected in series, the positive plate of one is connected to the negative of the other. Which of the following is true?
(a) The charges on the free plated connected to-gether are destroyed.
(b) The energy stored in ths system increases.
(c) The potential difference between the free plates is 2V.
(d) The potential difference remains constant.

18. A capacitor has some dielectric between its plates, and the capacitor is connected to a dc source. The battery is now disconnected and then the dielectric is removed, then
(a) capacitance will increase.(b) energy stored will decrease.
(c) electric field will increase.(d) voltage will decrease.

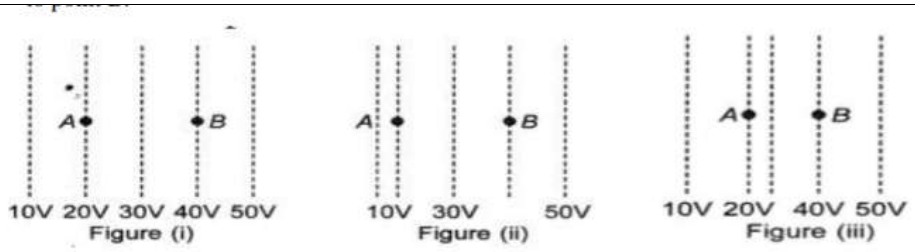
19. 1 Three capacitors of capacitances 3μF, 9μF and 18 μF are connected once in series and then in parallel. The ratio of equivalent capacitances Cs/Cp will be:
(a)1:15 (b)15:1 (c)1:1 (d) 1: 3

20. Five equal capacitors, each with capacitance C are connected as shown. The equivalent capacitance between A and B is



(a)5 C (b) C (c) C/5 (d) 3C.

21. Figures show some equipotential lines distributed in space. A charged object is moved from point A to point B.



(a)The work done in Fig. (i) is the greatest.
(b) The work done in Fig. (ii) is least.
(c) The work done is the same in Fig. (i), Fig.(ii) and Fig. (iii).
(d) The work done in Fig. (iii) is greater than Fig. (ii) but equal to that in Fig. (i).

22. The electric potential V at any point O (x, y, z all in metres) in space is given by $V = 4x^2$ volt. The electric field at the point (1 m, 0, 2 m) in volt/metre is
(a) 8 along negative x-axis (b) 8 along positive x-axis
(c) 16 along negative x-axis(d) 16 along positive z-axis

23. Which of the following options is correct? In a region of constant potential
(a) the electric field is uniform.
(b) The electric field is zero.
(c) There can be charge inside the region.
(d) The electric field shall necessarily change if a charge is placed outside the region.

24. If a unit positive charge is taken from one point to another over an equipotential surface, then
(a) work is done on the charge. (b) work is done by the charge.
(c) work done is constant. (d) no work is done.

25. Twenty-seven drops of mercury are charged simultaneously to the same potential of 10 volts. What will be potential if all the charged drops are made to combine to form one large drop ?
(a)180 V (b) 90 V (c) 120 V (d) 45 V

26. A capacitor has some dielectric between its plates, and the capacitor is connected to a dc source. The battery is now disconnected and then the dielectric is removed, then
(a) capacitance will increase. (b) energy stored will decrease.
(c) electric field will increase. (d) voltage will decrease.

27. Which of the following is blocked by a capacitor?
(a) A.C. (b) D.C. (c) Both A.C. and D.C. (d) Neither A.C. nor D. C

28 A dielectric is placed in between the two parallel plates of a capacitor as shown in the figure. The dielectric constant of the dielectric being K. If the initial capacity is C, then the new capacity will be:
(a)(K + l).C (b) K.C (c) ((K+1)/2) . C (d) (k – l) C

29 The graph shows the variation of voltage 'V' across the plates of two capacitors A and B versus increase of charge 'Q'stored on them.whichofthe two capacitors has higher capacitance?
(a) A (b) B (c) both have same (d) none

30 Two spherical conductors each of capacity C are charged to potential V and -V. These are then connected by means of a fine wire. The loss of energy is
(a) zero (b) 1/2CV2 (c) CV2 (d) 2 CV2

31. A positively charged particle is released from rest in a uniform electric field. The electric potential energy of the charge
(a)remains constant because the electric field is uniform.
(b)increases because charge moves along the electric field.
(c)decreases because charge moves along the electric field.
(d)decreases because charge moves opposite to the electric field.

32. Electric potential of earth is taken to be zero because earth is a good
(a)Insulator (b). Conductor (c). Semiconductor (d). Dielectric

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 q1 on a body by rubbing it against another body which gets a charge q2 in the process then $q1 + q2 = 0$.
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 $\oint E.dA$ 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.
11.Assertion: If the distance between parallel plates of a capacitor is halved and dielectric constant is three times, then the capacitance becomes 6 times.
Reason : Capacity of the capacitor does not depend upon the nature of the material.
12. Assertion : Two concentric charged shells are given. The potential difference between the shells depends on charge of inner shell.
Reason : Potential due to charge of outer shell remains same at every point inside the sphere.
13 Assertion : Electric field inside a conductor is zero.
Reason: The potential at all the points inside a conductor is same.
14 Assertion : Work done in moving a charge between any two points in an electric field is independent of the path followed by the charge, between these points.
Reason: Electrostatic force is a non-conservative force.
15 Assertion : Polar molecules do not have permanent dipole moment.
Reason : In polar molecules, the centres of positive and negative charges coincide even when there is no external field.
16 Assertion: A capacitor can be given only a limited quantity of charge.
Reason: Charge stored by a capacitor depends on the shape and size of plates of capacitor and the surrounding medium.
17 Assertion: Electron move away from a region of lower potential to a region of higher potential. Reason: An electron has a negative charge.
18. Assertion: A charged capacitor is disconnected from a battery. Now, if its plate are separated further, the potential energy will fall.

	Reason Energy stored in a capacitor is equal to the work done in charging it. 19. Assertion: Due to two-point charges electric field and electric potential can't be zero at some point simultaneously Reason Field is a vector quantity and potential a scalar quantity. 20. Assertion: A parallel plate capacitor is connected across battery through a key. A dielectric slab of dielectric constant k is introduced between the plates. The energy stored becomes k times. Reason The surface density of charge on the plate remains constant.
Chemistry	**<u>Chapter- Solution</u>** 1. State Raoult's law for a solution containing non-volatile solute. What type of deviation from Raoult's law is shown by a solution of chloroform and acetone and why? 2. Calculate the mass of a non-volatile solute(molar mass 40 g/mol) which should be dissolved in 114 gram octane to reduce its vapour pressure to 80%. 3. For a 5% solution of urea (molar mass= 60g/mol), calculate the osmotic pressure at 300 K.[R = 0.0821 L atm/K/mol] 4. 3.9 gram of benzoic acid dissolved in 49 gram of benzene shows the depression in freezing point of 1.62 K. Calculate the van't Hoff factor and predict the nature of solute(associated or dissociated). [Given: molar mass of benzoic acid = 122 g/mol, Kf for benzene= 4.9 g/mol) 5. Why is the value of van't Hoff factor for ethanoic acid in benzene closed to 0.5? 6. Define the following terms: a) Non-ideal solution b) Cryoscopic constant 7. 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? II) What happens when we place the blood cell in water (hypotonic solution)? Give reason. 8. Give reasons for the following: a) Measurement of osmotic pressure method is preferred for the determination of molar masses of macromolecules such as proteins and polymers. b) Aquatic animals are more comfortable in cold water than in warm water. c) Elevation of boiling point of 1M KCl solution is nearly double than that of 1M sugar solution. 9. I) Ishan's automobile radiator is filled with 1.0 kg of water. How many grams of ethylene glycol (molar mass = 62 g/mol) must Ishan add to get the freezing point of the solution lowered to -2.8 °C. Kf for water is 1.86 K kg/mol. II) What type of deviation from Raoult'slaw is shown by ethanol and acetone mixture? Give reason. 10. I) A 10% solution (by mass) of sucrose in water has a freezing point of 269.15 K. Calculate the freezing point of 10% glucose in water if the freezing point of pure water is 273.15 K. [Given: molar mass of sucrose = 342 g/mol, molar mass of glucose = 180 g/mol] II) Define the following terms: a) Reverse osmosis b) Abnormal molar mass **<u>Chapter- Electrochemistry</u>** 1. The conductivity of 0.20M solution of KClat 298 kelvin is 0.0248 is S/Cm. Calculate its molar conductivity.

	2. The conductivity of 0.01 M acetic acid is 7.8 x10-5S/Cm.Calculate its degree of dissociation if limiting molar conductivity of acetic acid is 390 Scm2/mol. 3. MCQs a) The amount of electricity required to produce one mole of zinc from ZnSO4 lution will be i) 3F ii) 2F iii) 1F iv) 4F. b) Fused NaCl on electrolysis give which of the following at cathode? i) Cl2 ii) Na iii) H2iv) all c) How long would it take to deposit 50 gram of aluminium from anelectrolytic cell using a current of 105 ampere ? (atomic mass of aluminium is 27 unit) i) 1.54 hour. ii) 1.42 hour iii) 1.32 hour. iv) 2.15 hour. d) The products of electrolysis of dilute H2SO4 are i) H2 at cathode SO2 at anode ii) H2 at cathode O2 at anode iii) O2 at cathode H2 at anode iv) SO2 at cathode O2 at anode e) Which type of current is used for electrolysis? i) AC current ii) DC current ii) Bothiv) None. 4. Assertion- Reason Questions i) A- Molar conductivity of week electrolyte shows a shop increase when solution is diluted. R- For weak electrolyte degree of dissociation decreases with dilution. ii) A- Conductivity of an electrolyte increases with decrease in concentration. R- Number of ions for unit volume decreases on dilution. iii) A- coppersulphate can be stored in zinc vessel. R- Zinc is more reactive than copper. iv) A- If external EMF opposite Daniel cell is equal to 1.1 volt cell stops working. R- Salt bridge complete internal circuit and prevents accumulation of charges. v) A- if E0 cellis negative cell will not work. R- Change in Gibb's energy will be positive and redox reaction will not take place.
Maths	1.If A and B square matrix of order 3,such that IAI=2 and AB=2I, WRITE the value of IBI 2.If A=$\begin{vmatrix}0 & -1\\0 & 2\end{vmatrix}$ and B=$\begin{vmatrix}3 & 5\\0 & 0\end{vmatrix}$ Then find IABI 3.If $[3 \quad -2 \quad 0]\begin{bmatrix}2\\k\\-5\end{bmatrix} = 0$ then value of k is (a)3 (b) 4 (c) 6 (d) none of these 4.Let A be a non singular square matrix of order 2×2,then$\lvert adjA\rvert$ is equal to (a)IAI (b) IAI^2 (c) IAI^3(d) none of these 5.Let A be a square matrix of order 3x3 ,then IkAI is equale to (a) kIAI (b) $kIAI^2$(c)k^3IAI (d) none of these 6. If A=$\begin{bmatrix}4 & x+2\\2x-3 & x=1\end{bmatrix}$is a symmetric matrix,then the value of x is (a)3 (b) 5 (c) 7 (d) none of these 7.Assertion(A): If A=$\begin{bmatrix}2 & 3 & -1\\1 & 4 & 2\end{bmatrix}$ and B=$\begin{bmatrix}2 & 3\\4 & 5\\2 & 1\end{bmatrix}$THEN AB and BA both are defined. Reason(R): For the two matrices A and B,the product AB is defined,if number of columns in A is equal to the number of rows in B. 8.Let A and B are symmetric matrices of order 3x3.

Assertion(A): A(BA) and (AB)A are symmetric matrices.

Reason(R): AB is symmetric matrix, if matrix multiplication of A with B commutative.

9. Assertion(A): If A=$\begin{bmatrix}1 & 1 & -2\\ 2 & 1 & -3\\ 5 & 4 & -5\end{bmatrix}$,then IAI=0

Reason(R):$|adjA|$=IAI^{n-1} where n is order of matrix A.

10. Assertion(A): If $\begin{vmatrix}2x & 5\\ 8 & x\end{vmatrix} = \begin{vmatrix}6 & -2\\ 7 & 3\end{vmatrix}$ then x=±6

Reason(R): If A and B are matrices of order 3 and IAI=4, IBI=6,then I2ABI=192

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

12. Three shopkeepers A, B and C go to a store to buy stationary. A purchases 12 dozen notebooks, 5 dozen pens and 6 dozen pencils. B purchases 10 dozen notebooks, 6 dozen pens and 7 dozen pencils. C purchases 11 dozen notebooks,13 dozen pens and 8 dozen pencils.A notebook costs Rs. 20,a pen costs Rs. 4.50 and a pencil costs Rs.2.Use matrix multiplication to calculate each individual's bill.

13. A total amount of ₹ 7000 is deposited in three different savings bank accounts with annual interest rates of 5%, 8% and 8 12 %, respectively. The total annual interest from these three accounts is ₹ 550. Equal amounts have been deposited in the 5% and 8% savings accounts. Find the amount deposited in each of the three accounts, with the help of matrices.

14. Make the project

"History of Indian Mathematician and their contribution towards Mathematics ".

15.write activity 2 in your activity copy

16.CASE STUDY

.Sherlin and Danju are playing Ludo at home during Covid-19. While rolling the dice, Sherlin's sister Raji observed and noted the possible outcomes of the throw every time belongs to set {1,2,3,4,5,6}. Let A be the set of players while B be the set of all possible outcome

A = {S, D}, B = {1,2,3,4,5,6}

1. Let R:$B \rightarrow B$ be defined by R = {(x, y): $yisdivisiblebyx$ } is

a. Reflexive and transitive but not symmetric

b. Reflexive and symmetric and not transitive

c. Not reflexive but symmetric and transitive

d. Equivalence

2. Raji wants to know the number of functions from A to B. How many number of functions are possible?

a. 62

b. 26

c. 6!

d. 212

3. Let R be a relation on B defined by R = {(1,2), (2,2), (1,3), (3,4), (3,1), (4,3), (5,5)}. Then R is

a. Symmetric

b. Reflexive

c. Transitive

d. None of these three

4. Raji wants to know the number of relations possible from A to B. How many numbers of relations are possible?

a. 62

b. 26

c. 6!

d. 212

5. Let R: $B \rightarrow B$ be defined by R={(1,1),(1,2), (2,2), (3,3), (4,4), (5,5),(6,6)}, then R is
a. Symmetric
b. Reflexive and Transitive
c. Transitive and symmetric
d. Equivalence

17. An organization conducted bike race under 2 different categories-boys and girls. Totally there were 250 participants. Among all of them finally three from Category 1 and two from Category 2 were selected for the final race. Ravi forms two sets B and G with these participants for his college project.

Let B = {b1,b2,b3} G={g1,g2} where B represents the set of boys selected and G the set of girls who were selected for the final race.

Ravi decides to explore these sets for various types of relations and functions

1. Ravi wishes to form all the relations possible from B to G. How many such relations are possible?

a. 64
b. 32
c. 0
d. 8

2.2. Let R: B→B be defined by R = {(x, y): x and y are students of same sex}, Then this relation R is_____

a. Equivalence
b. Reflexive only
c. Reflexive and symmetric but not transitive
d. Reflexive and transitive but not symmetric

3.Let R: $B \rightarrow G$ be defined by R = { (b1,g1), (b2,g2),(b3,g1)}, then R is_____

a. Injective
b. Surjective
c. Neither Surjective nor Injective
d. Surjective and Injective

4.Ravi wants to find the number of injective functions from B to G. How many numbers of injective functions are possible?

a.0
b.2
c.6
d.none

18.Students of Grade 9, planned to plant saplings along straight lines, parallel to each other to one side of the playground ensuring that they had enough play area. Let us assume that they planted one of the rows of the saplings along the line $y = x - 4$. Let L be the set of all lines which are parallel on the ground and R be a relation on L

Answer the following using the above information.

1. Let relation R be defined by R = {($L1$, $L2$): $L1 \parallel L2$ where L1,L2 € L} then R is_____ relation

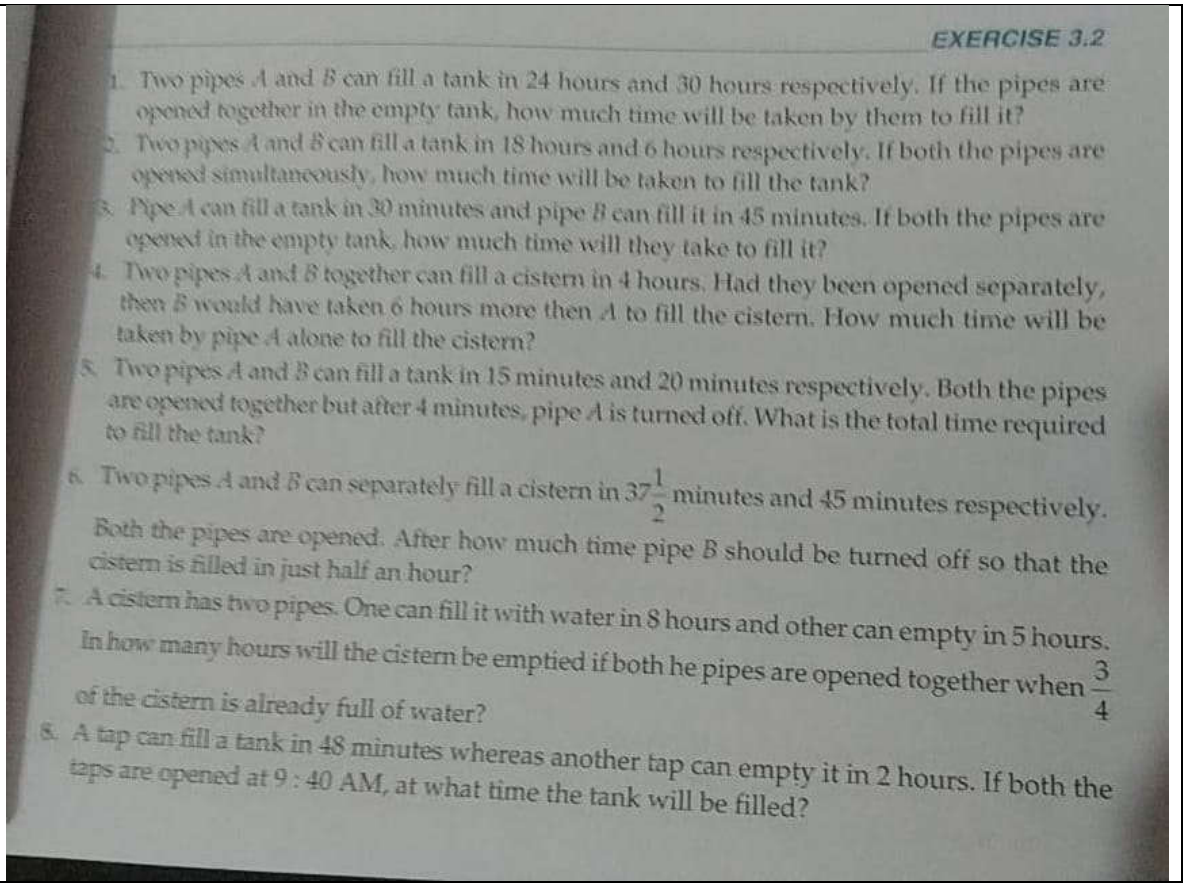
a. Equivalence
b. Only reflexive
c. Not reflexive
d. Symmetric but not transitive

2. Let R = { ($L1$, $L2$) :$L1 \perp L2$ where L1, L2 € L } which of the following is true?

a. R is Symmetric but neither reflexive nor transitive
b. R is Reflexive and transitive but not symmetric
c. R is Reflexive but neither symmetric nor transitive
d. R is an Equivalence relation

3. The function f: R→R defined by $f(x) = x - 4$ is_____

	a. Bijective b. Surjective but not injective c. Injective but not Surjective d. Neither Surjective nor Injective 4. Let $f: R \rightarrow R$ be defined by $(x) = x - 4$. Then the range of $f(x)$ is _____ a. R b. Z c. W d. Q 5. Let R = {(L 1 , L 2) : L 1 is parallel to L 2 and L 1 : y = x – 4} then which of the following can be taken as L 2 ? a. 2x-2y+5=0 b. 2x+y=5 c. 2x + 2y + 7 =0 d. x+y=7
IP	Solve and write type C questions of Chapter 1 in IP copy. Question number 1 to 17. Page number 102,103 and 104.
P.Ed	Q 1.) Define Planning ? Its objectives and importance in organising tournament? Q 2) Draw a Fixture of 21 teams in knoct out tournament ? Q 3) Draw a fixture of 6 teams in cyclic method ? Q 4) Draw a fixture of 9 teams in stair case method ? Q 5) Draw a fixture of 8 teams in tabular method ? Q 6) What is community sports ? Explain about Sports Day Q 7) Differentiate between intramural and extramural. (any 3 points) Q 8) Differentiate between knock out and League tournament. Q 9) Explain about Postural deformative in detail . Q 10) Make a model of field / ground with all specification displayed ? Ex. Kabaddi, kho-kho, Badminton, volleyball etc. of your choice.
Applied Maths.	1- Visit kirana shops near your home and collect the data regarding the sales of certain commodities over a month. Try to figure out the stock of a particular commodity which should be in the store in order to maximize the profit.(do it in file papers with plastic file) 2- Do the activity related to logarithms for financial calculations such as interest, present value, future value, profit/loss with large values. (do it in activity copy) 3- Solve the MCQs and assertion/reason type questions of chapter-1 and 2 given in your book. 4- Solve the following question attached below :-



EXERCISE 3.2

1. Two pipes A and B can fill a tank in 24 hours and 30 hours respectively. If the pipes are opened together in the empty tank, how much time will be taken by them to fill it?
2. Two pipes A and B can fill a tank in 18 hours and 6 hours respectively. If both the pipes are opened simultaneously, how much time will be taken to fill the tank?
3. Pipe A can fill a tank in 30 minutes and pipe B can fill it in 45 minutes. If both the pipes are opened in the empty tank, how much time will they take to fill it?
4. Two pipes A and B together can fill a cistern in 4 hours. Had they been opened separately, then B would have taken 6 hours more then A to fill the cistern. How much time will be taken by pipe A alone to fill the cistern?
5. Two pipes A and B can fill a tank in 15 minutes and 20 minutes respectively. Both the pipes are opened together but after 4 minutes, pipe A is turned off. What is the total time required to fill the tank?
6. Two pipes A and B can separately fill a cistern in $37\frac{1}{2}$ minutes and 45 minutes respectively. Both the pipes are opened. After how much time pipe B should be turned off so that the cistern is filled in just half an hour?
7. A cistern has two pipes. One can fill it with water in 8 hours and other can empty in 5 hours. In how many hours will the cistern be emptied if both he pipes are opened together when $\frac{3}{4}$ of the cistern is already full of water?
8. A tap can fill a tank in 48 minutes whereas another tap can empty it in 2 hours. If both the taps are opened at 9 : 40 AM, at what time the tank will be filled?

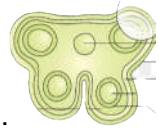
EXERCISE 2.1

1. In what ratio must a grocer mix two varieties pulses costing ₹ 45 and ₹ 60 per kg respectively so as to get a mixture worth ₹ 49.50 per kg?
2. In what ratio must 25% alcohol be mixed with 50% alcohol to get a mixture of 40% alcohol strength?
3. How many kg of salt at ₹ 10.50 per kg must a man mix with 25 kg of salt at ₹ 6 per kg so that he may, on selling the mixture at ₹ 10 per kg, gain 25% on the outlay?
4. Five litres of water is added to a certain quantity of pure milk costing ₹ 60 per litre. If by selling the mixture at the same price as before, a profit of 20% is made, what is the amount of pure milk in the mixture?
5. Alcohol costs ₹ 35 per litre and Kerosene oil costs ₹ 25 per litre. In what proportion should these be mixed so that the resulting mixture may be ₹ 27.50 per litre?
6. A cup of milk contains 3 parts of pure milk and 1 part of water. How much mixture must be withdrawn and water substituted in order that resulting mixture may be half milk and half water?
7. A mixture contains milk and water in the ratio 3 : 2. If 4 litres of water is added to the mixture, milk and water in the mixture become equal. Find the quantity of milk in the mixture, in litres.
8. A mixture contains milk and water in the ratio 8 : x. When 33 litres of mixture and 3 litres of water are mixed, the ratio of milk and water becomes 2 : 1 find the value of x.
9. A vessel contains 56 litres of mixture of milk and water in the ratio 5 : 2. How much water should be mixed with it so that milk to water ratio becomes 4 : 5?
10. How many litres of water should be added to a 30 litre mixture of milk and water containing milk and water in the ratio 7 : 3 such that the resultant mixture has 40% of water in it?
11. The ratio of milk and water in the mixture of water and milk is 4 : 3. If 6 litres of water is added to this mixture, the ratio of milk and water becomes 8 : 7. What is the quantity of milk in the original mixture?
12. 35 kg of types S_1 sandal powder, which costs ₹ 614 per kg, was mixed with a certain amount of type S_2 sandal powder, which costs ₹ 695 per kg. Then the mixture was sold at the rate of ₹ 767 per kg and 18% profit was earned. What was the amount (in kg) of type S_2 sandal powder in the mixture?

ANSWERS

1. 7 : 3 2. 2 : 3 3. 20 kg 4. 25 litres 5. 1 : 3 6. $\left(\frac{1}{3}\right)^{rd}$ 7. 20 litres

8. 3 9. 34 litres 10. 5 litres 11. 48 litres 12. 28 kg

Hindi	१. महादेवी वर्मा जी का ८० शब्दों में जीवन परिचय लिखिए। २. महादेवी वर्मा, जैनेन्द्र कुमार, धर्मवीर भारती, फणीश्वरनाथ रेणु पाठों के प्रश्नोंत्तर कॉपी में लिखकर याद करें। ३. आप समाचार पत्रों, टी.वी. आदि पर अनेक प्रकार के विज्ञापन देखे होंगे, जिनमें ग्राहकों को हर तरीके से लुभाने का प्रयास किया जाता है।पाँच विज्ञापन की समीक्षा कीजिए और यह भी लिखिए कि आपको विज्ञापन की किस बात ने सामान खरीदने के लिए प्रेरित किया-(क) -विज्ञापन में सम्मिलित चित्र। (ख)-विज्ञापन में आए पात्र व उनका औचित्य परियोजना कार्य के माध्यम से (ए-४ साइज़ पेपर) में अपना उत्तर लिखिए। ४. अपने सामान की बिक्री को बढ़ाने के लिए आज किन-किन तरीकों का प्रयोग किया जा रहा है? उदाहरण सहित उनका संक्षिप्त परिचय दीजिए।आप स्वयं किस तकनीक या तौर-तरीकों का प्रयोग करना चाहेंगे? जिससे बिक्री भी अच्छी हो और उपभोक्ता गुमराह भी न हो। इस विषय पर ३०० शब्दों में परियोजना कार्य बनाइए।(ए-४ साइज़ पेपर में) ५. 'पानी बचाओ' से जुड़ा विज्ञापन परियोजना कार्य के रूप में(ए-४ साइज़ पेपर में) बनाइए।इस संकट के प्रति चेतावनी बरतने के लिए आप किस प्रकार का विज्ञापन बनाना चाहेंगे? ६. महादेवी वर्मा जी द्वारा लिखित संस्मरण-रेखाचित्र 'पथ के साथी' व धर्मवीर भारती जी द्वारा लिखित उपन्यास 'गुनाहों का देवता' पढ़िए और 50-50 कठिन शब्द हिन्दी कॉपी में लिखकर याद करिए।
Biology	Class12 summer vacation. H.W .Q1 The total number of meiotic division required for the formation of hundred grains of wheat is a100 b.75 c.125. d.50. (1) Q 2 An anther having 4 microsporocytes shall produce—---□— pollen grains. a.24 b.12 c.8 d.16 Q 3 The endosperm cell of an angiosperm has 24 Chromosomes.The number of chromosomes in the gametes would be □□—----. a.8. b.16 c.24 d.48 Q.4"Cells of the tapetum of a microsporangium are usually multinucleate". Which of the following can be a reason for the tapetal cells to become multinucleate? A. They fuse with the polar cells of the megasporangium. B. They do not undergo karyokinesis. C. They do not undergo cytokinesis. D. They do not undergo mitosis. Q.5Two statements are given below - one labelled Assertion (A) and the other labelled Reason (R). Assertion (A): Pollen tube germinates through the germ pores on the pollen grains. Reasoning (R): Pollen-pistil compatibility chemicals help to dissolve sporopollenin for the pollen tube to germinate. Which of the following is correct? A. Both A and R are true, and R is a correct explanation of A. B. Both A and R are true, but R is not a correct explanation of A. C. A is true, but R is false. D. A is false, but R is true. Q 6How can pollen grain of wheat and rice which tend to lose viability within 30 minutes of their release be made available months later for breeding programs?(1) Q 7Why do the pollen grains of valisneria have a mucilaginous covering?(1) Q8 Cucurbits and papaya plants, bear staminate and pistillate flowers Mention the categories they are put under separately on the basis of the type of flowers they bear.(2) Q9 In the transfer section of a mature anther given below ,identity a and b and mention function.  Q10.Mention the reasons for difference in the ploidy of zygote and primary endosperm nucleus in an angiosperm. Q11 Explain the development of the primary endospermic nucleus into an endosperm and

the development of the zygote into an embryo in a fertilised embryo sac of a dicot plant.

Q.12 The exine layer of pollen grains contains sporopollenin which is a highly resistant chemical. Sporopollenin allows pollen grains to be well-preserved as fossils.
(a) Can fossilised pollens fertilise an ovum of the same species in the present day? Justify.
(b) How do scientists preserve pollen grains for later use?

Q.13 State ONE characteristic of a pollen grain that can help students identify:
(a) a water-pollinated pollen grain
(b) an animal-pollinated pollen grain.

Q.14 "Continued self-pollination results in inbreeding depression".
(a) Mention ONE impact of inbreeding depression on the upcoming generations in a farmland.
(b) State ONE way in which cross-pollination helps in avoiding inbreeding depression.

Q.15 Pollen grains are shed at either a two-celled stage or a three-celled stage and may take some time to reach the stigma for fertilisation. The pollen grains germinate on the stigma of the flowers.
(a) Where do the pollen grains get the nutrition to remain viable and germinate on the stigma?
(b) Mention the cell divisions that a microspore mother cell goes through to reach a three-celled pollen grain stage.

Q.16 Set up An area with different species of plants. A colour tracer is added to the pollen of species A.
Observation: The pollen from species A reaches the flowers of species A as well as species B. However, pollination occurs only with the flower of the species A.
(a) Name and explain the phenomenon underlying this observation.
(b) How can a farmer prevent any more pollen grains from landing on the stigma of flowers of the same species after he has artificially pollinated the flowers?

Q.17 Bees transfer pollen from the younger flowers at the top of a plant to the older flowers at the base.
Is this an example of self-pollination or cross-pollination? Justify.

Q 18.Differentiate between spermatogenesis and spermiogenesis

QI9. Are male and female gametes haploid or diploid?
Q20. The Leydig's cell as found in the human body are the secretory source of which hormone?
Q21 Name the process of release of spermatozoa from Sertoli cells into cavity of seminiferous tubule.
Q22.Spermatids possess haploid number of chromosome. Explain.
Q23 What is the number of chromosomes in the following cells of a human male?
(i) Spermatogonial cells
(ii) Spermatids
(ii) Primary spermatocytes
(iv) Sertoli cells

Q.24 A pregnant woman went to the hospital for an ultrasound. Where the doctor told her about the different changes occurring in the foetus developing inside her.
(i) Name the embryonic stage that gets implanted in the uterine wall
(ii) Name the hormones that are produced by placenta (ii,) Explain the process of implantation,

Q 25 Explain the steps in the formation of an ovum from oogonium in human female . Mention

	role of different hormones during the process Q26. Read the two statements given below and answer the questions that follows. Statement I Female P has been a surrogate mother once. Statement II Female Q is a national-level swimmer. Is it correct to say that the hymen is definitely broken in both females P and Q? (ii) Give a reason to support your answers to (i) Q27 (i) Highlight one aspect by which meiosis during oogenesis differs from regular meiosis. (ii) Name two hormones that are common to spermatogenesis and oogenesis. (iii) State the function of hormone identified in (ii)both human male and female Q 28.Meiotic arrest is a phenomenon noticed during oogenesis in human females where occytes are arrested in the primary oocytes stage (i) What is the chromosomal count of these primary oocytes? (ii) How are these primary oocytes converted to ovum? Q.29.Polyspermy is an extremely rare condition in which an ovum is fertilised by more than one sperm (i) How many chromosomes will a zygote contain if 2 sperms fertilised an ovum? (ii) How is polyspermy prevented in humans?