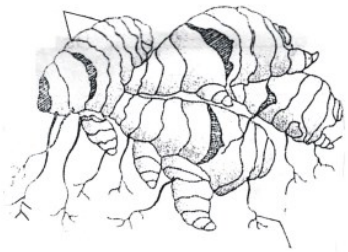
KENDRIYA VIDYALAYA NO.2 JALANDHAR CANTT

HOLIDAY HOMEWORK(XII)-BIO(2022-23)

SECTION – A

1. A male honeybee has 16 chromosomes whereas female has 32 chromosomes. Give one reason
2. If in the leaf cell of a plant 32 chromosomes are present then how many chromosomes will be there in the endosperm and in the antipodal cell of the this plant?
3. Name the organisms in which asexual reproductive structures are conidia and gemmules.
4. Why testes of human males are considered extra abdominal? What is the significance of this condition?
5.



Identify the picture and mention the vegetative part that helps it to propagate.

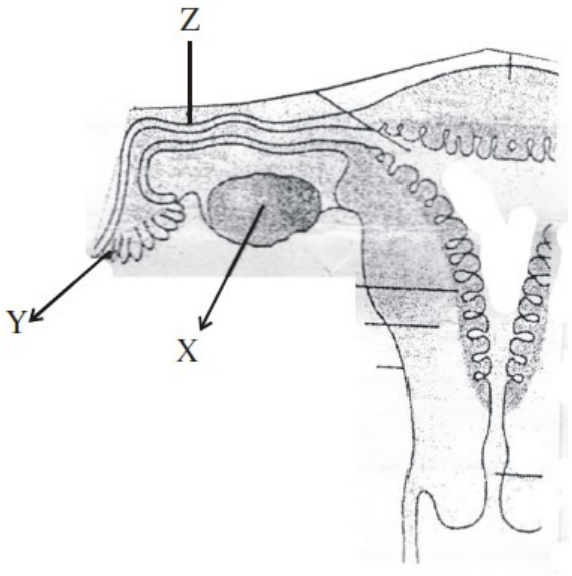
SECTION – B

6. Gynaeceum of a flower may be apocarpous or syncarpous. Explain with the help of suitable examples.
7. Why do moss plants produce large numbers of male gametes? Provide one reason. What are these gametes called?
8. What happens to corpus luteum in human female if the ovum is (i) fertilized, (ii) not fertilized?
9. Write the difference between the tender coconut water and the thick, white kernel of a mature coconut and their ploidy.
10. Out of many papaya plants growing in your garden, only a few bear fruits. Give reason.

SECTION – C

11. (a) Name the organic material exine of pollen grain is made up of. How is this material advantageous to pollen grains.
(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.
12.(a) How does the farmer use the dormancy of the seed to his advantage?
(b)What advantages a seed provide to a plant?
13. What send the signal for parturition also explain foetal ejection reflex.
14. Explain various outbreeding devices in detail.
15. Along with diagrams explain the the process of spermatogenesis.
16. Explain the development of female gametophyte upto 7 celled 8 nucleated stage.
17 Draw the well labelled diagram of human sperm.
18. How polyspermy is prevented in human beings

19.



This diagram above shows a part of the human female reproductive system.
(a) Name the gamete cells that would be present in 'X' if taken from a newborn baby.
(b) Name 'Y' and write its function.
(c) Name 'Z' and write the events that take place here.

20. How dose pollination takes place in salivia. List any four adaptations required for such type of pollination.

21. Trace the events that would take place in flower from the time of Pollen grain of species fall on stigma up to completion of fertilization.

22. Explain the events in a normal woman during her menstrual cycle on the following days:
(a) Pituitary hormone levels from 8 to 12 days.
(b) Uterine events from 13 to 15 days.
(c) Ovarian events from 16 to 23 days.

SECTION – D

23 Your younger sister Nandita has seen a banana tree in backyard of a house. She could see the fruits but no seeds. She wants to know how a new plant of banana will be produced without seed. Based on this answer the following questions.

a) How new plants are produced by banana plant?
b) What values are shown by Nandita?
c) How fruits can be produced without seeds?
d) How the fruit of apple differ from these types of fruits?

SECTION – E

24. a) Explain the menstrual phase in the human female. State the level of ovarian and pituitary hormones during this phase.
b) Why is the follicular phase in the menstrual cycle also referred as proliferative phase? Explain.
c) Explain the events that occur in a graafian follicle at the time of ovulation and thereafter.
d) Draw a graafian follicle and label antrum and secondary oocyte.

25. (a) Describe in sequence the process of microsporogenesis in angiosperms.
(b) Draw a labelled diagram of a two celled final structure formed.

26. (a) Draw a sectional view of a seminiferous tubule of human. Label sertoli cell, spermatagonia and leydig cell on it and write their functions.
(b) Explain the role of pituitary and sex hormones in the process of spermatogenesis.

27. Explain Spermatogenesis and oogenesis along with diagrams.
28. Explain menstrual cycle in detail (along with hormonal variations)
29. Draw diagram no. 3.11
30. Explain parturition and lactation.
31. What is the objective of RCH?

32. Identify a, b, c and d in the following table with reference to birth control?

Method	Example
a	Diaphragm
female sterilisation	b
c	Saheli
d	CuT

33. Why are copper containing intrauterine devices considered an ideal contraceptive for human female?
34. How is IUT different from IUI?
35. Enlist the probable cause of infertility?
36. What are the benefits of natural contraceptive methods over artificial methods?
37. Why is tubectomy considered a contraceptive method?
38. What are MTPs? Under what conditions MTPs are legally permitted?
39. How are non medicated IUDs different from hormone releasing IUDs? Give examples.
40. What are the measures one has to take to prevent from contracting STDs?
41. Enumerate the complications that untreated STDs can lead to?
42. Differentiate between Vasectomy and Tubectomy.
43. Give another name for sexually transmitted diseases. Name two sexually transmitted diseases which are curable and two diseases which are not curable.
44. What are the important features of an ideal contraceptive?
45. Why medical termination of pregnancy is done? Is MTP legalized in India?
46. Name the techniques which are employed in following cases :
47. (a) Transfer of an ovum collected from a donor into the fallopian tube of another female who cannot produce ova but can provide suitable environment for fertilisation and development.
48. (b) Embryo is formed in laboratory in which sperm is directly injected into ovum.
49. (c) Semen collected either from husband or a healthy donor is artificially introduced either into vagina or uterus.
50. Name two hormones that are constituents of contraceptive pills. Why do they have high and effective contraceptive value? Name a commonly prescribed non-steroidal oral pill.
51. Briefly explain IVF and ET. What are the conditions in which these methods are advised?
52. Why should sex education be introduced to school-going children? List any five reasons.
53. a) All reproductive tract infections are STDs but not all STDs are reproductive tract infection . Justify with an example.
    b) Expand the following. ICSI, GIFT, ZIFT, IUT, IUI
54. How are ART program helpful to humans? Describe any three assisted reproductive techniques practised to treat infertility.
55. What are the advantages and disadvantages of hormonal contraceptives?
56. What are STDs? Give some other names for it. Name any two sexually transmitted diseases and suggest ways to prevent them.

HOLIDAYS HOME WORK

CLASS 12

PHYSICS

1. What are electric field lines? Write their properties.

2. What is electric dipole? Explain dipole moment.

3. Derive expression for electric field due to a dipole (i) at axial point. (ii) at equatorial point

4. Define electric flux? State gauss's theorem. Using gauss's theorem find electric field due to uniformly charged thin spherical shell.

5. Define electric potential? Find electric field due to dipole (i)at axial line (i) at equatorial line

6. What is equipotential surface? Draw equipotential surface for (i) point charge (ii) electric dipole

7. State principle of parallel plate capacitor. Derive expression for its capacitance when (i) there is air in between plates (ii) a dielectric medium in between plates.

8. Derive expression for energy stored in capacitor.

9. Define drift velocity and derive the relation $I = neAV_d$

10. State ohm's law. Write factors affecting the resistance of a conductor.

11. Define internal resistance of a cell. Derive expression for it.

12. Solve NCERT exampler problems 1.6, 1.9, 1.11, 2.9

13. Solve NCERT exercise questions 1.1, 1.6, 1.8, 1.18,1.19, 1.23, 2.5, 2.10

HOLIDAYS HOMEWORK
CLASS XII CS

1. Practical questions to be done using pydroid app.
2. Solved questions of Functions.
3. Chart/PPT on Cyber security.

CLASS-XII

ENGLISH

Holidays' Homework (Summer Break)

Section A- Chapter Based

Prepare Pictorial storyboards using matchstick drawings for following chapters:

I. The Last Lesson
II. Lost Spring
III. The Third Level
IV. The Tiger King
V. My Mother at Sixty-Six

Section B- Activity Based

1. Read English newspapers regularly during the 40 days summer holidays and do the following:
   (i)Select at least 05 Letters to Editor, 05 Articles and 05 News reports(Accident, Celebration etc.)
   (ii) Cut and paste them in your notebook.
   (iii)Write the meanings of new words appearing in the editorial/news/article.
2. Watch at least 2 English films and share stories/ reviews when class begins.
3. Read any one book of your interest and write book review of the same.
4. Collect any 3 Invitation Cards related to wedding, marriage, mundan, retirement, birthday celebration etc.

Section C- PISA CCT

Attempt PISA CCT English Reading passages for the months January to May from DIKSHA Portal to improve your reading skills.

Section D- Art Integrated Project Based on EBSB

CULINARY: Prepare a South Indian dish with the assistance of your parents/ elders adopting safety measures. Write your recipe and experience in English language. Take photographs of the same and attach with your project report.

केन्द्रीय विद्यालय क्रमांक 2 जालंधर छावनी।

ग्रीष्मकालीन अवकाश कार्य।

दिनांक 9 मई से 17 जून 2022 तक

कक्षा बारहवीं.

1. काव्यखंड की समस्त कविताओं पर आधारित सार लिखना।
2. गद्य के समस्त पाठों पर आधारित सार लिखना।
3. वितान के समस्त पाठों को पढ़कर उनका सार लिखना।
4. पढ़ी गई पुस्तकों की समीक्षा लिखना।
5. घूमने गए स्थल का यात्रावृतांत लिखना।
6. ग्रीष्मकालीन अवकाश में सीखें जाने वाले कार्य के बारे में रिपोर्ट लिखना।
   उक्त कार्य पृथक फाइल में लिखकर करें।
   अवकाश के बाद विषय शिक्षक को जमा करें।

   द्वारा
   डॉ० सुशील कुमार
   स्नातकोत्तर शिक्षक
   (हिन्दी)

KENDRIYA VIDYALAYA 2
Jalandhar cantt

SUMMER VACATION HOLIDAY ASSIGNMENT (2022-23)
CLASS- XII
SUBJECT- MATHEMATICS

INSTRUCTIONS:

- *Read all the questions carefully before solving. Write the solution of questions in Mathematics homework or Activity notebook.*
- *Complete the project separately on A4 sheets in neat and clear hand writing and attractive.*
- *Write your name, class and section clearly at the front cover of project file.*

Section A (Questions)

1. If a matrix has 5 elements, write all possible order it can have?

2. If $\begin{bmatrix} 3 & 4 \\ 2 & x \end{bmatrix} \begin{bmatrix} x \\ 1 \end{bmatrix} = \begin{bmatrix} 19 \\ 15 \end{bmatrix}$, find the val

3. Construct a 3x3 matrix A, where $a_{ij} = 2i - 3j$

4. If order of matrix A is 2x3 and order of matrix B is 3x4 , find the order of AB.

5. If A and B are matrices of order $3 \times n$ and $m \times 5$ respectively, then find the order of matrix 5A – 3B, given that it is defined..

6. Let A = $[aij]$ be a square matrix of order 3×3 and |A|= -7. Find the value of $a11\ A11 + a12A12 + a13\ A13$ where Aij is the cofactor of element aij.

7. Find the value of A^2, where A is a 2×2 matrix whose elements are given by

$$aij = \begin{cases} 1, if\ i \neq j \\ 0, if\ i = j \end{cases}$$

8. If $\begin{pmatrix} 2x+y & 3y \\ 0 & 4 \end{pmatrix} = \begin{pmatrix} 6 & 0 \\ 6 & 4 \end{pmatrix}'$, then find x and y.

9. If $A^T = \begin{bmatrix} 3 & 4 \\ -1 & 2 \\ 0 & 1 \end{bmatrix}$ *and* $B = \begin{bmatrix} -1 & 2 & 1 \\ 1 & 2 & 3 \end{bmatrix}$, *then find* $A^T - B^T$.

10. If $A = \begin{pmatrix} 4 & x+2 \\ 2x-3 & x+1 \end{pmatrix}$ *is symmetric Find* x.:

11. Find the product $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} [2 \quad 3 \quad 4]$

12. Show that A = $\begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$ satisfies $A^2 - 4A - 5\ I = 0$

13. Prepare 10 MCQ TYPE QUESTIONS from CHAPTER-3 and 4. Also write the solution.

Section B (activities)

14. Perform following activities and write in activity notebook:

Activity 1: OBJECTIVE : To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l ⊥ m} is symmetric but neither reflexive nor transitive

.

Activity 2: OBJECTIVE : To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l || m} is an equivalence relation.

Activity 3: OBJECTIVE: To demonstrate a function which is not one-one but is onto.

Activity 4: OBJECTIVE: To demonstrate a function which is one-one but not onto.

15. CCT QUESTIONS

CASE STUDY1

A manufacture produces three stationery products Pencil, Eraser and Sharpener which he sells in two markets. Annual sales are indicated below

Market	Products (in numbers)		
	Pencil	Eraser	Sharpener
A	10,000	2000	18,000
B	6000	20,000	8,000

If the unit Sale price of Pencil, Eraser and Sharpener are Rs. 2.50, Rs. 1.50 and Rs. 1.00 respectively, and unit cost of the above three commodities are Rs. 2.00, Rs. 1.00 and Rs. 0.50 respectively, then,

Based on the above information answer the following:

1. Total revenue of market A
a. Rs. 64,000
b. Rs. 60,400
c. Rs. 46,000
d. Rs. 40600
2. Total revenue of market B
a. Rs. 35,000
b. Rs. 53,000
c. Rs. 50,300
d. Rs. 30,500
3. Cost incurred in market A
a. Rs. 13,000
b. Rs.30,100
c. Rs. 10,300
d. Rs. 31,000
4. Profit in market A and B respectively are
a. (Rs. 15,000, Rs. 17,000)
b. (Rs. 17,000, Rs. 15,000)
c. (Rs. 51,000, Rs. 71,000)
d. (Rs. 10,000, Rs. 20,000)
5. Gross profit in both market
a. Rs.23,000
b. Rs. 20,300
c. Rs. 32,000
d. Rs. 30,200

CASE STUDY 2

Amit, Biraj and Chirag were given the task of creating a square matrux of order 2.

Below are the matrices created by them. A, B , C are the matrices created by Amit, Biraj and Chirag respectively.

$A = \begin{bmatrix} 1 & 2 \\ -1 & 3 \end{bmatrix}$ $B = \begin{bmatrix} 4 & 0 \\ 1 & 5 \end{bmatrix}$ $C = \begin{bmatrix} 2 & 0 \\ 1 & -2 \end{bmatrix}$

If a = 4 and b = −2, based on the above information answer the following:

1. Sum of the matrices A, B and C , $A+(B+C)$ is
   a. $\begin{bmatrix} 1 & 6 \\ 2 & 7 \end{bmatrix}$
   b. $\begin{bmatrix} 6 & 1 \\ 7 & 2 \end{bmatrix}$
   c. $\begin{bmatrix} 7 & 2 \\ 1 & 6 \end{bmatrix}$
   d. $\begin{bmatrix} 2 & 1 \\ 7 & 6 \end{bmatrix}$
2. $(A^T)^T$ is equal to

a. $\begin{bmatrix} 1 & 2 \\ -1 & 3 \end{bmatrix}$

b. $\begin{bmatrix} 2 & 1 \\ 3 & -1 \end{bmatrix}$

c. $\begin{bmatrix} 1 & -1 \\ 2 & 3 \end{bmatrix}$

d. $\begin{bmatrix} 2 & 3 \\ -1 & 1 \end{bmatrix}$

3. $(bA)^T$ is equal to

a. $\begin{bmatrix} -2 & -4 \\ 2 & -6 \end{bmatrix}$

b. $\begin{bmatrix} -2 & 2 \\ -4 & -6 \end{bmatrix}$

c. $\begin{bmatrix} -2 & 2 \\ -6 & -4 \end{bmatrix}$

d. $\begin{bmatrix} -6 & -2 \\ 2 & 4 \end{bmatrix}$

4. $AC - BC$ is equal to

a. $\begin{bmatrix} -4 & -6 \\ -4 & 4 \end{bmatrix}$

b. $\begin{bmatrix} -4 & -4 \\ 4 & -6 \end{bmatrix}$

c. $\begin{bmatrix} -4 & -4 \\ -6 & 4 \end{bmatrix}$

d. $\begin{bmatrix} -6 & 4 \\ -4 & -4 \end{bmatrix}$

5. $(a + b)B$ is equal to

a. $\begin{bmatrix} 0 & 8 \\ 10 & 2 \end{bmatrix}$

b. $\begin{bmatrix} 2 & 10 \\ 8 & 0 \end{bmatrix}$

c. $\begin{bmatrix} 8 & 0 \\ 2 & 10 \end{bmatrix}$

d. $\begin{bmatrix} 2 & 0 \\ 8 & 10 \end{bmatrix}$

CHEMISTRY HOLIDAY 2022

UNIT: 1:-SOLID STATE

1. Why are solids rigid?
2. Why do solids have a definite volume?
3. Define the term 'amorphous'. Give a few examples of amorphous solids.
4. Write three main differences between Amorphous and Crystalline Solids.
5. Crystalline solids are anisotropic in nature.What does this statement mean.
6. Why is glass is considered a super cooled liquid.

7. Refractive index of a solid is observed to have the same value along all directions. Comment on the nature of this solid. Would it show cleavage property?
8. Classify the following as amorphous or crystalline solids: (i)Polyurethane, (ii)naphthalene, (iii)benzoic acid, (iv) Teflon, (v)potassium nitrate, (vi)cellophane, (vii)polyvinyl chloride, (viii)fibre (ix)glass, (x)copper.
9. In a tabular form Classify the solids on the basis of different binding forces also mention Nature of binding force ,physical nature & electrical conductivity
10. Why is glass of window panes of very old buildings found to be thicker at the bottom than at the top .
11. Some of the very old glass objects appear slightly milky instead of being transparent. why?
12. In a tabular form Classify the solids on the basis of different binding forces alsomention Nature of binding force ,physical nature & electrical conductivity
13. Classify each of the following solids as ionic, metallic, molecular, network (covalent) or amorphous.(a) Tetra phosphorus decoxide (P_4O_{10}) (b) Graphite(c) Ammonium phosphate $(NH_4)_3PO_4$ (d) Brass(e) SiC (f) Rb(g) I_2 (h) LiBr (i) P_4 (j) Si (k) Plastic
14. Classify the following solids in different categories based on the nature of intermolecular forces operating in them: (a)Potassium sulphate,(b) tin, (c)benzene, (d)urea,(e) ammonia, (f)water,(g) zinc sulphide, (i) graphite,(j) rubidium,(k) argon,(l) silicon carbide.
15. Based on intermolecular forces classify following : Potassium sulphate Tin Benzene Urea Ammonia H_2O zinc sulphide Graphite Rubidium Argon Silicon carbide Silver Sodium Sulphate Hydrogen I_2 CO_2 SO_2
16. What type of solids are electrical conductors, malleable & ductile.
17. What type of interactions hold the molecules together in a polar molecular solid.
18. Write a distinguishing feature of metallic solids.
19. What makes a glass different from a solid such as quartz? Under what conditions couldquartz be converted into glass?
20. How do metallic and ionic substances differ in conducting electricity?
21. Ionic solids conduct electricity in molten state but not in solid state. Explain.
22. What type of solids are electrical conductors, malleable and ductile?
23. Solid A is a very hard electrical insulator in solid as well as in molten state and melts atextremely high temperature. What type of solid is it?
24. Copper is conducting such while copper sulphate is conducting only in molten state orin aqueous solution. why
25. Explain the basis of similarities and differences between metallic and ionic crystals.
26. Why Ionic solids are hard and brittle.
27. What is Unit cell? Name the parameters that characterize unit cell.
28. Give the significance of Lattice point. Write difference between : Crystal lattice and unit cell
29. Distinguish between(i) Hexagonal and monoclinic unit cells(ii) Face-centred and end- centred unit cells.
30. How much portion of an atom located at (i) corner and (ii) body centre (iii) faces of a cubic unit cell is part of its neighbouring unit cell .
31. Calculate the Number of atoms per unit cell in Simple cubic; Body centred Cubic (bcc), Face-centred cubic (fcc).
32. How many lattice points are there in one unit cell of each of the following lattice? (i) Face-centred cubic (ii) Face-centred tetragonal (iii) Body-centred
33. A cubic solid is made of two elements P and Q. Atoms of Q are at the corners of the cube and P at the body-centre. What is the formula of the compound? What are the coordination numbers of P and Q?
34. A cubic solid is made of two elements A and B. Atoms of A are at the corners of the cube and B at the Face-centre. What is the formula of the compound?

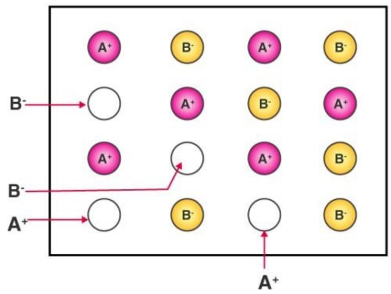
35. An ionic compound made up of atoms A & B has a face centred cubic arrangement in which atoms are at the corners and B atoms are at face centres. If one of the atoms is missing from the corner,what is the simplest formula of the compound.
36. In a face centred cubic lattice, atom A occupies the corner positions and atom B occupies the face centre positions. If one atom of B is missing from one of the face centred points. What is the formula of the compound?
37. A cubic solid is made of two elements X and Y. Atoms of A are at the corners of the cube and B at the centre of alternate Faces. What is the formula of the compound?
38. A compound made up of elements A and B crystallizes in the cubic structure. Atoms a are present on the corners as well as face centres whereas atoms B are present on the edge centres as well as body centre. What is the formula of the compound?
39. If three elements P,Q, & R crystallizes in the cubic structure with P atoms at the corners,Q atoms at the cube centre and R atoms at the centre of the faces of the cube What is the formula of the compound?
40. A solid has a cubic structure in which X atoms are located at the corners of the cube, Y atoms are at the cube centres and O atoms are at the edge centres. What is the formula of the compound?
41. In an alloy of gold and cadmium, gold crystallizes in cubic structure occupying the corners only and cadmium fits into the face centre voids. What is quantitative composition of the alloy ?
42. Calculate the number of unit cells in 8.1 g of aluminum if it crystallizes in f.c.c structure.(Atomic mass of Al=27gm/mol).**[Ans:4.515 x 10^{22}]**
43. Calculate the number of unit cells in 9.2 g of sodium if it crystallizes in b.c.c structure.(Atomic mass of Na=23 gm/mol). **[Ans:1.204 x 10^{23}]**
44. Potassium crystallizes in a body centered cubic lattice. What is the approximate number of unit cells in 4.0g of potassium? Atomic mass of potassium = 39. **[Ans:3.09 x 10^{22}]**
45. Derive the relationship between edge length (a) of unit cell and radius of atom(r) for (i)simple cubic (ii)body –centered cubic (iii)face –centered cubic (with the assumptionsthat atoms are touching each other) or hcp or ccp
46. Silver crystallizes in fcc lattice.Each side of the unit cell has a length of 409pm.What is the radius of an atom of silver.
47. Aluminium crystallises in a cubic close-packed structure. Its metallic radius is 125pm.(i) What is the length of the side of the unit cell? (ii) How many unit cells are there in 1.00 cm^3 of aluminium?
48. Gold (atomic radius = 0.144 nm) crystallises in a face-centred unit cell. What is the length of a side of the cell?
49. Calculate the efficiency of packing in case of a metal crystal for (i)simple cubic (ii)body –centered cubic (iii)face –centered cubic (with the assumptions that atoms are touching each other) or hcp or ccp Structures.
50. Calculate the packing fraction for the Ca unit cell, given that Ca crystallizes in a face-centered cubic unit cell.
51. How can you determine the atomic mass of an unknown metal if you know its densityand the dimension of its unit cell? Explain.
52. Silver crystallizes in fcc lattice. If edge length of the cell is 4.07×10^{-8}cm and density is 10.5 g cm^{-3}, calculate the atomic mass of silver.
53. Niobium crystallises in body-centred cubic structure.If density is 8.55 g cm^{-3}, calculateatomic radius of niobium using its atomic mass 93 u.
54. X-ray diffraction studies show that copper crystallises in an *fcc* unit cell with cell edgeof 3.608×10^{-8} cm. In a separate experiment, copper is determined to have a density of 8.92 g/cm^3, calculate the atomic mass of copper.
55. Silver forms *ccp* lattice and X-ray studies of its crystals show that the edge length of itsunit cell is 408.6 pm. Calculate density of silver (Atomic mass = 107.9 u)
56. An element (atomic mass = 60) having FCC unit cell has a density of 6.23g/cm^3 .What isthe edge length of the unit cell?

57. An element (atomic mass = 27) has a density of 2.7 g/cm^3 . If edge length of the cell is 4.07×10^{-8}cm. what is the nature of the cubic unit cell?
58. Iron has bcc unit cellwith cell edge of 286.65 pm.The density of iron is 7.874 g/cm^3 . Calculate the value of Avogadro constant (atomic mass of Fe = 56gmol^{-1})
59. Determine the type of cubic lattices to which the iron crystal belongs if its unit cell has an edge length of 286 pm and the density of iron crystals is 7.86 g/cm^3.
60. The well known mineral fluorite is chemically calcium fluoride. It is known that in one unit cell of this mineral there 4 Ca^{2+} ions & 8 F^- ions and that Ca^{2+} ions are arranged in a fcc lattice.The F^- ions fill all the tetrahedral holes in the fcc lattice of Ca^{+2} ions.The edge of the unit cell is 5.46 X 10^{-8} cm in length.The density of solid is 3.18 g/cm^3 in length.Using this information Calculate the value of Avogadro constant (Molar mass of CaF_2= 78.08 gmol^{-1}).
61. An element has a body –centered cubic structure with a cell edge of 288pm.The density of the element is 7.2 g/cm^3 .How many atoms are present in 208 g of the element?
62. An element with molar mass 2.7×10^{-2} kg mol^{-1}forms a cubic unit cell with edge length 405 pm. If its density is 2.7×10^3 kg m^{-3}, what is the nature of the cubic unit cell?
63. An element crystallizes into a structure which may be described by a cubic lattice of unit cell having one atom on each corner of the cube and two atoms on one of its diagonals.If the volume of this unit cell is 24 x 10^{-24} cm^3 and density of element is 7.2gm cm^{-3},calculate the number of atoms present in 200 g of the element.
64. The density of copper metal is 8.95 g/cm^3 .If the radius of copper atom be 127.8pm,is the copper unit cell simple cubic,body centred cubic or face centred cubic?
65. An element X with an at.mass 60 g/mol has density 6.23 g/cm^3 If the edge length of cubic unit cell is 400pm.Identify the type of cubic unit cell. Calculate the radius of an atom of this element.
66. An element crystallizes in BCC structure.If the edge length of the cell is 1.469 x 10^{-10} m. & density is 19.3 g/cm^3. Calculate the at. Mass of this element. Also calculate the radius of an atom of this element.
67. Ag crystallizes in FCC lattice. The edge length of its unit cell is 4.077 x 10^{-8} cm. & its density is 10.5 g/cm^3 Calculate the at. Mass of Ag.
68. An element has a body –centered cubic structure with a cell edge of 314 pm.The density of the element is 10.3 g/cm^3. Calculate the atomic mass of element.
69. Gold has a close-packed structure which can be viewed as-spheres 0.74 occupying of the total volume. If the density of gold is 19.3 g/cc, calculate the apparent radius of a gold ion in the solid
70. The edge length of a unit cell of a metal having molecular mass 75g/mol is 5Ą which crystallizes in a cubic lattice .If the density is 2 gm cm^{-3},then find the radius of metal atom.
71. KF has ccp structure.Calculate the radius of unit cell if the side of the cube or edge length is 400pm.How many F^- ions and octahedral voids are there in this unit cell.
72. Calculate the value of Avogadro constant from the following data. Density of NaCl = 2.165 g/cm^3. Distance b/w Na^+ & Cl^- is 281 pm.
73. What is meant by the term 'coordination number'?
74. What is the coordination number of atoms in a cubic close-packed structure.
75. What is the coordination number of atoms in a Hexagonal close packing hcp in 2-D & 3-D.
76. What is the two dimensional coordination number of a molecule in Sqaure close packed layer.What is the coordination number of atoms in a Body centered cubic & Face centered cubic.
77. Write the 'coordination number' of Rock salt(NaCl) CsCl, ,ZnS,CaF_2 Flourite .
78. How will you distinguish between the following pairs of terms: (i) Hexagonal close- packing and cubic close-packing (ii)Tetrahedral void and octahedral void
79. A cubic solid is made of two elements P and Q. Atoms of Q are at the corners of the cube and P at the body-centre. What is the formula of the compound? What are the coordination numbers of P and Q?
80. A cubic solid is made of two elements A and B. Atoms of A are at the corners of the cube and B at the Face-centre. What is the formula of the compound?

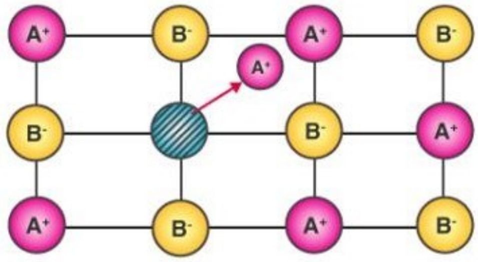
81. In a face centred cubic lattice, atom A occupies the corner positions and atom B occupies the face centre positions. If one atom of B is missing from one of the face centred points. What is the formula of the compound?
82. A compound is formed by two elements X and Y. Atoms of the element Y (as anions) make *ccp* and those of the element X (as cations) occupy all the octahedral voids. Whatis the formula of the compound?
83. Atoms of element B form *hcp* lattice and those of the element A occupy 2/3rd of tetrahedral voids. What is the formula of the compound formed by the elements A andB?
84. A compound forms hexagonal close-packed structure. What is the total number of voids in 0.5 mol of it? How many of these are tetrahedral voids?
85. A compound is formed by two elements M and N. The element N forms *ccp* and atomsof M occupy 1/3rd of tetrahedral voids. What is the formula of the compound?
86. Ferric oxide crystallises in a hexagonal close-packed array of oxide ions with two out ofevery three octahedral holes occupied by ferric ions. Derive the formula of the ferric oxide
87. If the radius of the octahedral void is r and radius of the atoms in close packing is R, derive relation between r and R.
88. Explain the following: (a) Point defect (b) intrinsic or thermodynamic defect (c) vacancy defect (d) interstitial defect
89. Explain the following with suitable examples : (a)Schottky defect (b)Frenkel defect(dislocation defect)
90. What is the effect of Schottky defect and Frenkel defects on the density of crystals.
91. What is the effect of Schottky defect on the density of crystals.
92. Name the crystal defect which lowers the density of an ionic crystal.
93. Which point defect increases the density of crystal?
94. Which point defect does not alters the density of crystal?
95. Why are Frenkel defects not found in pure alkali halides?
96. What type of defect can arise when a solid is heated?
97. Why are Frenkel defects found in AgCl?
98. What type of stoichiometric defect is shown by ZnS
99. What type of stoichiometric defect is shown by AgBr
100. Explain how vacancies are introduced in an ionic solid when a cation of highervalence is added as an impurity in it?
101. What type of defect is produced when NaCl is doped with $SrCl_2$.
102. What is the nature of crystal defect produced when sodium chloride is doped with$MgCl_2$?
103. What type of defect is produced when AgCl is doped with $CdCl_2$
104. Define the term F –centers.
105. Ionic solids which have anionic vacancies due to metal excess develop colour.Explainwith the example.
106. Name the non- stoichiometric defect responsible for colour in alkali halides.
107. What makes the crystal of KCl appear sometimes violet?
108. What is the effect of Frenkel defects on the density of crystals.
109. Why is Lithium chloride sometimes pink in colour?
110. Why common salt is sometime yellow instead of being pure white.
111. Mention one property which is caused due to presence of F –centre in a solid?
112. Zinc oxide is white but it turns yellow on heating .Why
113. What makes alkali metal halides sometimes coloured, which are otherwise colourless
114. Explain the following non- stoichiometric defects: (i) metal excess defect due topresence interstitial cation (ii) Metal deficiency defect.
115. A sample of ferrous oxide has actual formula $Fe_{0.93}O_{1.00}$. In this sample what fractionof metal ions are Fe^{2+} ions?

116. What type of nonstoichiometric defect is present in the sample of $Fe_{0.93}O_{1.00}$?

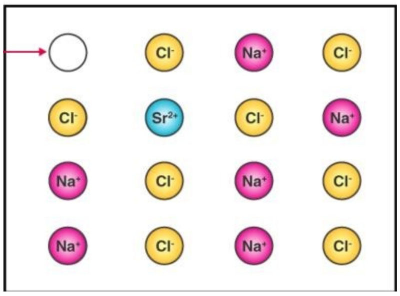
1. If NaCl is doped with 10^{-3} mol % of $SrCl_2$, what is the concentration of cationvacancies.
2. Name a substance which on addition to AgCl causes cation vacancy in it.
3. Why is FeO (s) not formed in stoichiometric composition?
4. Why does zinc oxide exhibit enhanced electrical conductivity on heating ?
5. Name the defect in which equal number of cations and anions are missing from lattice positions .
6. Name the defect in which the smaller ion is dislocated from its normal site to an interstitial site.
7. Name the defect in which a negative ion from the crystal lattice may be missing from its lattice site leaving a hole or vacancy which is occupied by the electron originally associated with the anion
8. Name the defect type of defect generally occurs when metal shows variable valency.
9. Analysis shows that nickel oxide has the formula $Ni_{0.98}.O_{1.00}$. What fractions of nickel exist as Ni^{+2} ions?
10. Identify the type of defects shown in following figures :



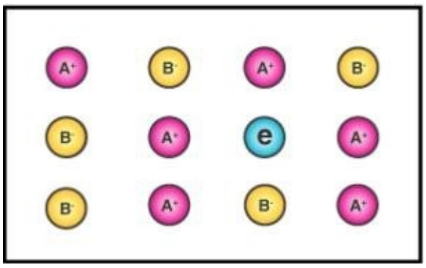
(a)



(c)



(b)



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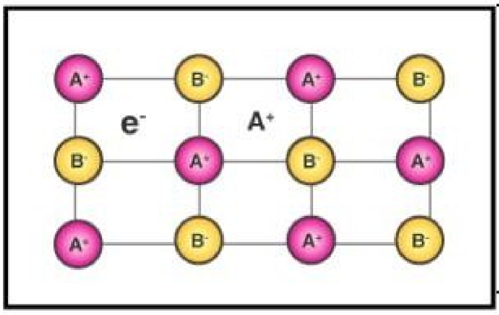
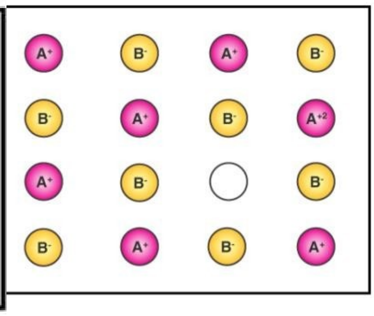


(e)



(f)

UNIT: 2:-SOLUTIONS

1. Give one example of solution having gas as solute & gas as solvent.
2. Give one example of solution having liquid as solute & gas as solvent
3. Give one example of solution having solid as solute & gas as solvent.
4. Give one example of solution having gas as solute & liquid as solvent.
5. Give one example of solution having liquid as solute & liquid as solvent
6. Give one example of solution having solid as solute & liquid as solvent.
7. Give one example of solution having gas as solute & solid as solvent.
8. Give one example of solution having liquid as solute & solid as solvent
9. Give one example of solution having solid as solute & solid as solvent
10. Amongst the following compounds, identify which are insoluble, partially soluble and highly soluble in water?(i) phenol (ii) toluene (iii) formic acid(iv) ethylene glycol (v) chloroform (vi) Pentanol.

11. Suggest the most important type of intermolecular attractive interaction in the following pairs.(i) n-hexane and n-octane(ii) I_2 and CCl_4(iii) $NaClO_4$ and water(iv) methanol and acetone (v) Acetonitrile (CH_3CN) and acetone (C_3H_6O).
12. Based on solute-solvent interactions, arrange the following in order of increasing solubility in n-octane and explain. Cyclohexane, KCl, CH_3OH, CH_3CN.
13. Define: Molality, Molarity, Mass percentage, Volume percentage, Parts per million (ppm), Mole fraction. Write their formulas also.
14. Which out of the Molality & Molarity is better way to express the concentration of solution and why?
15. How does a change in temperature influence values of molarity and molality.
16. Concentration terms such as mass percentage, ppm, mole fraction and molality are independent of temperature, however molarity is a function of temperature.Explain.
17. Under what conditions molarity and molality of a solution nearly the same.
18. A solution is heated from 25°C to 50°C.Will its molarity be same less or more.Comment.
19. What is the sum of the mole fractions of all the components in a three componentsystem?
20. State Henry law with its mathematical expressions. Explain the significance of Henry's law constant. At same temperature, hydrogen is more soluble in water than helium .Which will have larger value of K_H
21. What is the significance of Henry's Law constant *K*H?
22. Mention some of important applications Henry law.
23. Why do gases always tend to be less soluble in liquids as the temperature is raised?
24. What is the effect of rise in temperature on solubility of a gas?
25. Why do aquatic species remain more comfortable in lakes in winters than in summers?
26. Explain the following phenomena with the help of Henry's law.(i) Painful condition known as bends. (ii) Feeling of weakness and discomfort in breathing at high altitude.
27. Why soda water bottle kept at room temperature fizzes on opening?
28. State Raoults law for a solution of volatile liquids .Give its mathematical relationship.
29. How is the vapour pressure of a solvent affected when a non volatile solute is dissolvedin it.
30. Why is vapour pressure of a solution of glucose in water lower than that of Water?
31. What is an ideal solution? What type of solutions are likely to behave as ideal solutions? Draw the plot of vapour pressure and mole fraction of an ideal solution at constant temperature.
32. Explain along with diagrams the conditions for the Non ideal solutions exhibiting Positive deviations. Write some examples of Non ideal solutions exhibiting Positive deviations.
33. Explain along with diagrams the conditions for the Non ideal solutions exhibiting Negative deviations. Write some examples of Non ideal solutions exhibiting Negative deviations
34. Draw a diagram to iilustrate the relationship between vapour pressure and mole fraction of a components in a solution to represent negative deviation.
35. What role does the molecular interaction play in solution of alcohol and water?
36. When X and Y are mixed the solution becomes warmer and Y and Z are mixed the solution becomes cooler? Which of these solutions will exhibit positive deviation and solutions will exhibit negative deviation?
37. What type of non idealities are exhibited by cyclohexane –ethanol and acetone- chloroform mixtures? Give reasons for your answer.
38. Why a mixture of carbondisulphide and acetone shows positive deviation from Raoults law? What type of azeotropic mixture will be formed by this solution.
39. What are Azeotropes? Give one example each of minimum boiling and maximum boiling azeotropes.
40. In non ideal solution what type of deviation shows the formation of maximum boiling azeotrope.
41. In non ideal solution what type of deviation shows the formation of mimimum boiling azeotrope.
42. Components of a binary mixture of two liquids A and B were being separatedby distillation. After

some time separation of components stopped and composition of vapour phase became same as that of liquid phase. Both the components started coming in the distillate. Explain why this happened.

43. What general name is given to binary mixtures which show deviation from Raoult'slaw and whose components cannot be separated by fractional distillation. How many types of such mixtures are there?
44. Acetone (bp329K) and carbon disulphide (bp320K) are mixed in a definite composition so that the mixture of two behaves like pure liquid and boils at 312 what name can be given to such a mixture?
45. 10cc of a liquid A is mixed with 10 cc of liquid B.The volume of resulting solution was found to be 19.9cc.what do you conclude.
46. What type of azeotropic mixture will be formed by the solution of acetone-chloroform mixtures?Justify on the basis of strength of intermolecular interactions that develop in the solution.
47. Define colligative properties.
48. Show that Relative Lowering of vapour pressure is a colligative property.
49. Why does a solution containing no volatile solute have higher boiling point than pure solvent. Show that Elevation of boiling point is a colligative property
50. How will you determine the molecular mass of a non volatile substance by study of Elevation of boiling point of a solution?
51. Out of 1M glucose and 2M glucose which one has a higher boiling point and why.
52. What is molal elevation constant? What are its units? How is it related to enthalpy of vaporization of solvent?
53. Why common salt is added to water used for boiling eggs to get hard boiled eggs?
54. 10 g of sucrose and 10 g of glucose are dissolved in same volume of water to preparetwo solutions X and Y .will they have same or different boiling points?
55. Show that depression of freezing point is a colligative property.
56. How will you determine the molecular mass of a non volatile substance by study of depression of freezing point of a solution.
57. An aqueous solution of sodium chloride freezes below 273 K.Expalin the lowering infreezing point of water with the help of a suitable diagram.
58. What is molal depression constant? What are its units? How is it related to enthalpy offusion of solvent?
59. How does sprinkling of salt help in clearing the snow covered roads in hilly areas?Explain the phenomenon involved in the process.
60. What are antifreeze solutions? Which substance is commonly used as antifreeze?
61. What is osmotic pressure? Show that it is a colligative property.
62. Define (i)Semi permeable membrane(ii) osmosis (iii) isotonic (iv) Hypertonic (v)Hypotonic solution.
63. What is edema.
64. What is reverse osmosis? Give its application.
65. When kept in water, raisin swells in size. Name and explain the phenomenon involvedwith the help of a diagram. Give three applications of the phenomenon.
66. Discuss biological and industrial importance of osmosis.
67. How can you remove the hard calcium carbonate layer of the egg without damaging its semiprermiable membrane? Can this egg be inserted into a bottle with a narrow neck without distorting its shape? Explain the process involved
68. Give an example of a material used for making semipermeable membrane for carrying out reverse osmosis
69. What care is generally taken during intravenous injection and why?
70. What happens when the external pressure applied becomes more than the osmoticpressure of the solution.
71. How will you determine the molecular mass of a substance by study of osmoticpressure

72. Measurement of osmotic pressure method is preferred for the determination ofmolecular masses of macromolecules such as proteins and polymers.Give two reasons.
73. What will happen if RBC are placed in (i)0.5% NaCl Solution (ii)1% NaCl Solution?
74. What happens when we place the blood cell in water (hypertonic solution).Give reason.
75. Give reason :
    a) A raw mango placed in concentrated salt solution shrivels into pickle.
    b) Wilted flowers revive when placed in fresh water.
    c) A carrot that has become limp placed into the water making it firm once again.
    d) Water movement from soil into plant roots and subsequently into upper portionof the plant
    e) The preservation of meat by salting and of fruits by adding sugar protects againstbacterial action.
76. Calculate the molarity of a solution containing 5 g of NaOH in 450ml solution.
77. Concentrated nitric acid used in the laboratory work is 68% nitric acid by mass in aqueous solution. What should be the molarity of such a sample of the acid if the density of the solution is 1.504 g/ml?
78. Calculate the amount of benzoic acid required for preparing 250 ml of 0.15M solution in methanol.
79. Calculate molality of 2.5g of ethanoic acid (CH_3COOH) in 75g of benzene.
80. Calculate the mass of urea (NH_2CONH_2) required in making 2.5 Kg of 0.25 molal of aqueous solution.
81. Calculate the molarity of each of the following solutions :(a) 30g of $Co(NO_3)_2.6H_2O$ in 4.3L of solution (b) 30ml of $0.5H_2SO_4$ diluted to 500ml.
82. An antifreeze solution is prepared from 222.6g of ethylene glycol. $C_2H_4(OH)_2$ and 200g of water. Calculate molality of solution. If the density of the solution is 1.072 g/ml then what shall be the molarity of the solution?
83. Calculate Molality, Molarity & Mole fraction of KI if the density of 20 %(mass/mass) aqueous KI is 1.202g/ml.
84. A solution of glucose in water is labelled as 10% w/w. What should be the molality and mole fraction of each component in the solution? If the density of solution is 1.2g/ml, thenwhat shall be the molarity of the solution?
85. If the density of some lake water is 1.25 g/ml and contains 92g of Na^+ ions per Kg of water,calculate the molality and molarity of Na^+ ions in the lake.
86. Calculate the mole fraction of ethylene glycol. $C_2H_4(OH)_2$ in a solution containing 20% of ethylene glycol. $C_2H_4(OH)_2$ by mass.
87. Calculate the mole fraction of benzene in solution containing 30% by mass in carbon tetrachloride (CCl_4).
88. A sample of drinking water was found to be contaminated with chloroform ($CHCl_3$) supposed to be carcinogen. The level of contamination was 15ppm (By mass). (i) Express this in percent by mass. (ii)determine the molality of chloroform in the water sample.
89. Calculate the mass percentage of aspirin ($C_9H_8O_4$) in acetonitrile (CH_3CN)when 6.5g of ($C_9H_8O_4$) in dissolved in 450g of (CH_3CN).
90. Calculate the mass percentage of benzene (C_6H_6) and carbon tetrachloride (CCl_4)if 22g of benzene is dissolved in 122g of carbon tetrachloride (CCl_4).
91. Calculate the percentage composition in terms of mass of a solution obtained by mixing 300g of a 25% and 400g of 40% solution by mass
92. If the solubility product of CuS is 6×10^{-16}, calculate the maximum molarity of CuS in aqueous solution.
93. Nalorphene ($C_{19}H_{21}NO_3$), similar to morphine is used to combat withdrawal symptoms in narcotic users .Dose of Nalorphene, generally is 1.5 mg.Calculate the mass of 1.5×10^{-3} molal aqI.
94. If N_2 gas is bubbled through water at 298 K, how many millimoles of N_2 gas would dissolve in 1 litre of water .Assume that N_2 exerts a partial pressure of 0.987 bar . Henry's law constant for N_2 at 293K is 76.48 bar.
95. H_2S a toxic gas with rotten egg like smell is used for the qualitative analysis. If the solubilityof H_2S in water at STP is 0.195m, calculate Henry's law constant

96. Henry's law constant for CO_2 in water is 1.67x 10^8Pa at 298 K .calculate the quantity of CO_2 in 500ml of soda water when packed under 2.5 atm CO_2 pressure at 298 K.
97. The partial pressure of ethane over a solution containing 6.56 x 10^{-3} g of ethane is 1 bar. If the solution contains 5.00 x 10^{-2} g of ethane, then what shall be the partial pressure of the gas?
98. Henry's law constant for the molality of methane in benzene at 298 *K* is 4.27 × 10^5 mm Hg.Calculate the solubility of methane in benzene at 298 *K* under 760 mm Hg.
99. Vapour pressure of chloroform ($CHCl_3$) and dichloroform (CH_2Cl_2) at 298 K are 200 mm Hg and 415 mm Hg respectively. (i) Calculate the vapour pressure of the solution prepared by mixing 25.5 g of $CHCl_3$ and 40.0 g of CH_2Cl_2 at 298 K and (ii) mole fractions of each component in vapour phase.
100. The vapour pressure of pure liquids A and B are 450 and 700 mm Hg respectively at 350 K .Find out the composition of the liquid mixture if total vapour pressure is 600 mmHg .Also find the composition of the vapour phase.
101. Heptane and Octane form ideal solution .At 373 K, the vapour pressures of the two liquid components are 105.2kPa and 46.8kPa respectively. What will be the vapour pressure, in bar of a mixture of 25.0g heptane and 35.0g of octane?
102. Benzene and toluene (C_7H_8)from ideal solution over entire range of composition .The vapour pressure of pure benzene and toluene at 300K are 50.71mmHg and 32.06 mmHg respectively .Calculate mol fraction of benzene in vapour phase if 80 g of benzene is mixedwith 100 g toluene.
103. 100 g of liquid A(molar mass 140g/mol) was dissolved in 1000g of liquid B(molar mass 180g/mol)the vapour pressure of pure B was found to be 500 torr.Calculate the vapour pressure of pure A and its vapour pressure in solution if total vapour pressure of a solutionis recorded as 475 torr.
104. Vapour pressure of water at 293K is 17.535 mm Hg .calculate vapour pressure of waterat 293 K when 25 g of glucose is dissolved in 450 g of water.
105. A solution is prepared by dissolving 10 g of non volatile solute in 200 g of water .It hasa vapour pressure of 31.84 mm of Hg at 308 K.Calculate the molar mass of the solute.(Vapour pressure of pure water at 308K is 32 mm of Hg.)
106. At 25^0C the saturated vapour pressure of water is 3.165 k Pa (23.75 mm Hg).Find the saturated vapour pressure of a 5% aqueous solution of urea at same temperature.(molar mass of urea =60.05 g/mol)
107. The vapour pressure of pure benzene at a certain temperature is 0.850 bar. A non volatile, non electrolyte solid weighing 0.5 g when added to 39.0 g benzene (molar mass 78g/mol).vapour pressure of the solution ,then is 0.845 bar. what is the molar mass of the solid substance?
108. Calculate the mass of a nonvolatile solute (molecular mass = 40) which should be dissolved in 114g octane to reduce its vapour pressure to 80%.
109. A solution containing 30g of non-volatile solute exactly in 90g water has a vapour pressure of 2.8 kPa at 298K. Further 18g of water is then added to solution, the new vapour pressure becomes 2.9kpa at 298 K.Calculate (a) Molecular mass of solute (b)Vapour pressure of water at 298K

An aqueous solution of 2% nonvolatile solute exerts a pressure of 1.004 bar at the boiling point of the solvent .what is the molecular mass of the solute? (Vapour pressure of pure water =1atm=1.013 bar)

89. Vapour pressure of pure water at 298 K is 23.8 mmHg .50 g of urea (NH_2CONH_2)is dissolved in 850 g of water .calculate the vapour pressure of water for this solution and its relative lowering.
90. The vapour pressure of water is 12.3 kPa at 300 *K*. Calculate vapour pressure of 1 molalsolution of a non-volatile solute in it.
91. 18 g glucose $C_6H_{12}O_6$ is dissolved in 1 kg of water in a saucepan. At what temperature will solution boil? K_b for water is 0.512 KKgmol^{-1}.
92. Find the boiling point of a solution containing 0.520 g of glucose dissolved in 80.2 g of water. K_b for water is 0.52 KKgmol^{-1}.
93. A solution of glycerol($C_3H_8O_3$) in water was prepared by dissolving some glycerol in 500g 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^{-1})

94. The boiling point of benzene is 353.23K.when 1.80 g of a non volatile solute was dissolved in 90 g of benzene, the boiling point is raised to 354.11K.Calculate the molar mass of the solute? K_b for benzene is 2.53 KKgmol^{-1}.
95. Boiling point of water at 750 mmHg is 99.63^{0}C.How much sucrose is to added to 500 g water such that it boils at 100^o C.
96. What would be the molar mass of a compound if 6.21 g of its dissolved in 24 g of chloroform to form a solution that has a boiling point of 68.04^{o}C .The boiling point of pure chloroform is 61.7^{o}C and K_b for chloroform is 3.63 ^{o}C /m.
97. A solution of 3.800 g of sulphur in 100 g of CS_2 (boiling point = 46.30° C) boils at 46.66° C. What is the formula of sulphur molecule in this solution ? (Atomic mass of sulphur = 32g mol^{-1} and K_b for CS_2 = 2.40 K kg mol^{-1})
98. A solution prepared by dissolving 1.25g of oil of wintergreen in 99.0g of benzene has a boiling point of 80.31^{0}C .Determine the molar mass of this compound(B.P. of purebenzene = 80.10^{0}C and K_b for benzene is 2.53 KKgmol^{-1}..)
99. 1.00 g of non-electrolyte solute is dissolved in 50 g of benzene lowered the freezing point of benzene by 0.40K.The freezing point depression constant of benzene is5.12KKgmol^{-1} .Find the molar mass of the solute.
100. 45g of ethylene glycol ($C_2H_6O_2$)is mixed with 600g of water .calculate(a)Freezing pointdepression (b)Freezing point of the solution. K_f for water = 1.86 K kg mol^{-1}
101. Calculate the mass of ascorbic acid (C6H8O6) to be dissolved in 75g of acetic acid to lower its melting point by 1.5^{o}C. K_f for acetic acid = 3.9 K kg mol^{-1}
102. A solution containing 2.56 gm of sulphur in 100 g of carbon disulphide gave a freezing point lowering of 0.383 K .Calculate the molecular formulae of Sulphur [k_f of carbon disulphide = 3.83 K kg/mol Atomic mass of S =32 amu]
103. 15g of an unknown molecular substance was dissolved in 450g of water.The resulting solution freezes at -0.34^{0}C.What is the molar mass of the substance.
104. What mass of ethylene glycol(molar mass =62) must be added to 5.50kg of water to lower the freezing point from 0^{0}C to -10^{0}C?(K_f for water = 1.86 K kg mol^{-1}
105. Two elements A & B form compounds having molecular formula AB_2 & AB_4. When dissolved in 20g of C_6H_6, 1g AB_2 lowers the freezing point by 2.3 & 1.0g AB_4 lowers it by 1.3K.The molar depression constant for benzene is 5.1Kg mol^{-1}. Calculate atomic mass A & B.
106. A 5% solution (by mass) of cane sugar in water has freezing point of 271.15 K. calculatethe freezing point of 5% glucose in water if freezing point of water is 273.15 K.
107. A 4% solution (by mass) of sucrose in water has freezing point of 271 K. calculate thefreezing point of 5% glucose in water if freezing point of water is 273.15 K.
108. Calculate the temperature at which a solution containing 54g of glucose in 250g ofwater will freeze. K_f for water is 1.86 KKgmol^{-1}.)
109. In a solution of urea, 3.0 g of its is dissolved in 100 ml of water. What will be the freezing point of this solution ? State the approximation made if any. [K_f for water = 1.86 Kkg mol^{-1}, molar mass of Urea = 60 g mol^{-1}]
110. Some ethylene glycol ($C_2H_6O_2$) is added to your cars cooling system along with 5 kgof water.If the freezing point water-glycerol is -15^{o}C ,what is the boiling point of the solution? (K_f=1.86 K kg mol^{-1} & K_b=0.52 K kg mol^{-1} for water)
111. 200 cm^3 of an aqueous solution of a protein contains 1.26 g of the protein .The osmoticpressure of such a solution at 300K is found to be2.57x10^{-3}bar.calculate the molar mass of the protein .
112. 10.0 gm of an organic substance when dissolved in 2 litres of water gave an osmotic pressure of 0.60 atm. at 27 ^{0}C Calculate the molecular mass of substance.
113. Calculate the osmotic pressure in Pascals exerted by a solution prepared by dissolving 1.0 g of polymer of molar mass 185,000 in 450ml of water at 37^{o}C.
114. At 300 k, 36g of glucose present per litre in its solution has an osmotic pressure of

4.98 bar. If the osmotic pressure of solution is 1.52 bars at the same temperature, what would be the concentration?

115. A 5 % solution of canesugar is isotonic with 0.877% of substance X.Find the molecular weight of X.

116. 100 mg of a protein is dissolved in enough water to make 10ml of a solution. If this solution has an osomotic pressure of 13.3 mm Hg at 25^0C,what is the molar mass of protein?(R=0.0821Latmmol^{-1}K^{-1} and 760mmHg=1atm)

117. A solution prepared by dissolving 8.95mg of a gene fragment in 35.0ml of water has an osmotic pressure of 0.335 torr at 25^0C .Calculate its molar mass.

118. A 4% solution (by mass) of sucrose in water has freezing point of 271 K. calculate thefreezing point of 5% glucose in water if freezing point of water is 273.15 K.

119. Calculate the temperature at which a solution containing 54g of glucose in 250g ofwater will freeze. K_f for water is 1.86 KKgmol^{-1}.)

120. In a solution of urea, 3.0 g of its is dissolved in 100 ml of water. What will be the freezing point of this solution ? State the approximation made if any. [K_f for water = 1.86 Kkg mol^{-1}, molar mass of Urea = 60 g mol^{-1}]

121. Some ethylene glycol ($C_2H_6O_2$) is added to your cars cooling system along with 5 kgof water.If the freezing point water-glycerol is -15°C ,what is the boiling point of the solution? (K_f=1.86 K kg mol^{-1} & K_b=0.52 K kg mol^{-1} for water)

122. 200 cm^3 of an aqueous solution of a protein contains 1.26 g of the protein .The osmoticpressure of such a solution at 300K is found to be2.57x10^{-3}bar.calculate the molar mass of the protein .

123. 10.0 gm of an organic substance when dissolved in 2 litres of water gave an osmotic pressure of 0.60 atm. at 27 ^{0}C Calculate the molecular mass of substance.

124. Calculate the osmotic pressure in Pascals exerted by a solution prepared by dissolving 1.0 g of polymer of molar mass 185,000 in 450ml of water at 37°C.

125. At 300 k, 36g of glucose present per litre in its solution has an osmotic pressure of 4.98 bar. If the osmotic pressure of solution is 1.52 bars at the same temperature, what would be the concentration?

126. A 5 % solution of canesugar is isotonic with 0.877% of substance X.Find the molecular weight of X.

127. 100 mg of a protein is dissolved in enough water to make 10ml of a solution. If this solution has an osomotic pressure of 13.3 mm Hg at 25^0C,what is the molar mass of protein?(R=0.0821Latmmol^{-1}K^{-1} and 760mmHg=1atm)

128. A solution prepared by dissolving 8.95mg of a gene fragment in 35.0ml of water has an osmotic pressure of 0.335 torr at 25^0C .Calculate its molar mass.

K V NO 2 JALANDHAR CANTT
HOLIDAYS HOME WORK
CLASS XII
SUBJECT ECONOMICS

NAME OF THE TOPIC	ASSIGNMENT
MONEY AND BANKING	Define money and explain evolution of Money. What is barter system? What were its drawbacks? Explain the functions of money. Explain various concepts of money supply. Explain the process of credit creation with the help of a numerical example. Explain various functions of Central bank? Explain any three quantitative & qualitative measures of credit control by the central bank.
National income & Related Aggregates	Explain various concepts / aggregates of national income. Explain the various steps involved in the construction of national income by value added method, income method & expenditure method. Explain various precautions to be kept in mind while calculating national income by value added income & expenditure method. Write the difference between nominal & real national income. Explain any four limitations of taking GDP as an indicator of Economic welfare. Solve 50 numerical on Value added, income & expenditure method
Govt Budget	Define Budget & explain its objectives.

	Write the difference between revenue receipts and capital receipts. Write the difference between revenue expenditure & capital expenditure. Explain various sources of revenue & capital receipts. Define public expenditure. Explain its types. Define fiscal deficit. Explain its implications & explain various measures to control it. Define revenue deficit. Explain its implications & explain various measures to control it.
Indian Economy on the Eve of Independence	Explain the feature of Indian Economy on the Eve of Independence. Explain the demographic profile of India on the Eve of Independence. Explain the occupational structure of Indian Economy.
	Learn & revise the whole syllabus covered in the class & solve board-based questions on the topics covered in the class.

CLASS-XII

ENGLISH

Holidays' Homework (Summer Break)

Section A- Chapter Based

Prepare Pictorial storyboards using matchstick drawings for following chapters:

I. The Last Lesson
II. Lost Spring
III. The Third Level
IV. The Tiger King
V. My Mother at Sixty-Six

Section B- Activity Based

1. Read English newspapers regularly during the 40 days summer holidays and do the following:
   (i)Select at least 05 Letters to Editor, 05 Articles and 05 News reports(Accident, Celebration etc.)
   (ii) Cut and paste them in your notebook.
   (iii)Write the meanings of new words appearing in the editorial/news/article.
2. Watch at least 2 English films and share stories/ reviews when class begins.
3. Read any one book of your interest and write book review of the same.
4. Collect any 3 Invitation Cards related to wedding, marriage, mundan, retirement, birthday celebration etc.

Section C- PISA CCT

Attempt PISA CCT English Reading passages for the months January to May from DIKSHA Portal to improve your reading skills.

Section D- Art Integrated Project Based on EBSB

CULINARY: Prepare a South Indian dish with the assistance of your parents/ elders adopting safety measures. Write your recipe and experience in English language. Take photographs of the same and attach with your project report.

Holidays homework class 12 geography

On Practical file

1 what is data explain sources of data with examples and types of data

2 what is tabulation of data how tally marks are used explain. means of Central tendency at least two sums of all different categories

3 what are bar diagram its importance and uses draw two diagrams of simple bar, comparative bar and multiple bar

4 study GIS

5 Make a file of maps having all India and World maps of syllabus

Learn all the chapters done in class for monthly test to be held on opening of school

Some topics for project of class 12th History

1) The Indus valley civilization-- archaeological exhibitions and new perspectives .
2) History and legacy of mauryan Empire.
3) “Mahabharat “ -the great epic of India.
4) The history and culture of the vedic period.
5) Buddha Charitra.
6) A comprehensive history of Jainism.
7) Bhakti movement - multiple interpretations and commentories.
8) The mystical dimensions of of sufism.
9) Global legacy of Gandhian ideas.
10) The architectural culture of the vijayanagara empire.
11) Life of women in the Mughal rural society.
12) Comparative analysis of the land revenue system introduced by the Britishers in India.
13) The revolt of 1857- causes; planning and coordination ; leadership, vision of unity.
14) The philosophy of Guru Nanak Dev.
15) The vision of Kabir.
16) An insight into the Indian constitution .

HOLIDAYS HOMEWORK

CLASS XII IP

1. Practical questions to be done using pydroid app.
2. Solved questions of Pandas I.
3. Chart/PPT on cyber security.

KENDRIYA VIDYALAYA 2
Jalandhar cantt

SUMMER VACATION HOLIDAY ASSIGNMENT (2022-23)
CLASS- XII
SUBJECT- MATHEMATICS

INSTRUCTIONS:

- *Read all the questions carefully before solving. Write the solution of questions in Mathematics homework or Activity notebook.*
- *Complete the project separately on A4 sheets in neat and clear hand writing and attractive.*
- *Write your name, class and section clearly at the front cover of project file.*

Section A (Questions)

1. If a matrix has 5 elements, write all possible order it can have?
2. If $\begin{bmatrix} 3 & 4 \\ 2 & x \end{bmatrix} \begin{bmatrix} x \\ 1 \end{bmatrix} = \begin{bmatrix} 19 \\ 15 \end{bmatrix}$, find the val
3. Construct a 3x3 matrix A, where $a_{ij} = 2i - 3j$
4. If order of matrix A is 2x3 and order of matrix B is 3x4 , find the order of AB.
5. If A and B are matrices of order $3 \times n$ and $m \times 5$ respectively, then find the order of matrix 5A – 3B, given that it is defined..
6. Let A = $[aij]$ be a square matrix of order 3×3 and |A|= -7. Find the value of $a11\ A11 + a12A12 + a13\ A13$ where Aij is the cofactor of element aij.

7. Find the value of A^2, where A is a 2×2 matrix whose elements are given by

$$aij = \begin{cases} 1, if\ i \neq j \\ 0, if\ i = j \end{cases}$$

8. If $\begin{pmatrix} 2x+y & 3y \\ 0 & 4 \end{pmatrix} = \begin{pmatrix} 6 & 0 \\ 6 & 4 \end{pmatrix}'$, then find x and y.

9. If $A^T = \begin{bmatrix} 3 & 4 \\ -1 & 2 \\ 0 & 1 \end{bmatrix}$ *and* $B = \begin{bmatrix} -1 & 2 & 1 \\ 1 & 2 & 3 \end{bmatrix}$, *then find* $A^T - B^T$.

10. If $A = \begin{pmatrix} 4 & x+2 \\ 2x-3 & x+1 \end{pmatrix}$ *is symmetric Find* x.:

11. Find the product $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} \begin{bmatrix} 2 & 3 & 4 \end{bmatrix}$

12. Show that A = $\begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$ satisfies $A^2 - 4A - 5I = 0$

13. Prepare 10 MCQ TYPE QUESTIONS from CHAPTER-3 and 4. Also write the solution.

Section B (activities)

14. Perform following activities and write in activity

notebook:

Activity 1: <u>OBJECTIVE</u> : To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l ⊥ m} is symmetric but neither reflexive nor transitive

.

Activity 2: <u>OBJECTIVE</u> : To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l || m} is an equivalence relation.

Activity 3: <u>OBJECTIVE:</u> To demonstrate a function which is not one-one but is onto.

Activity 4: <u>OBJECTIVE:</u> To demonstrate a function which is one-one but not onto.

15. <u>CCT QUESTIONS</u>

CASE STUDY1

A manufacture produces three stationery products Pencil, Eraser and Sharpener which he sells in two markets. Annual sales are indicated below

Market	Products (in numbers)		
	Pencil	Eraser	Sharpener
A	10,000	2000	18,000
B	6000	20,000	8,000

If the unit Sale price of Pencil, Eraser and Sharpener are Rs. 2.50, Rs. 1.50 and Rs. 1.00 respectively, and unit cost of the above three commodities are Rs. 2.00, Rs. 1.00 and Rs. 0.50 respectively, then,

Based on the above information answer the following:

1. Total revenue of market A

a. Rs. 64,000

b. Rs. 60,400

c. Rs. 46,000

d. Rs. 40600

2. Total revenue of market B

a. Rs. 35,000

b. Rs. 53,000

c. Rs. 50,300

d. Rs. 30,500

3. Cost incurred in market A

a. Rs. 13,000

b. Rs.30,100

c. Rs. 10,300

d. Rs. 31,000

4. Profit in market A and B respectively are

a. (Rs. 15,000, Rs. 17,000)

b. (Rs. 17,000, Rs. 15,000)

c. (Rs. 51,000, Rs. 71,000)

d. (Rs. 10,000, Rs. 20,000)

5. Gross profit in both market

a. Rs.23,000

b. Rs. 20,300

c. Rs. 32,000

d. Rs. 30,200

CASE STUDY 2

Amit, Biraj and Chirag were given the task of creating a square matrux of order 2.

Below are the matrices created by them. A, B , C are the matrices created by Amit, Biraj and Chirag respectively.

$A = \begin{bmatrix} 1 & 2 \\ -1 & 3 \end{bmatrix}$ $B = \begin{bmatrix} 4 & 0 \\ 1 & 5 \end{bmatrix}$ $C = \begin{bmatrix} 2 & 0 \\ 1 & -2 \end{bmatrix}$

If a = 4 and b = −2, based on the above information answer the following:

1. Sum of the matrices A, B and C , $A+(B+C)$ is
   a. $\begin{bmatrix} 1 & 6 \\ 2 & 7 \end{bmatrix}$
   b. $\begin{bmatrix} 6 & 1 \\ 7 & 2 \end{bmatrix}$
   c. $\begin{bmatrix} 7 & 2 \\ 1 & 6 \end{bmatrix}$
   d. $\begin{bmatrix} 2 & 1 \\ 7 & 6 \end{bmatrix}$
2. $(A^T)^T$ is equal to

a. $\begin{bmatrix} 1 & 2 \\ -1 & 3 \end{bmatrix}$

b. $\begin{bmatrix} 2 & 1 \\ 3 & -1 \end{bmatrix}$

c. $\begin{bmatrix} 1 & -1 \\ 2 & 3 \end{bmatrix}$

d. $\begin{bmatrix} 2 & 3 \\ -1 & 1 \end{bmatrix}$

3. $(bA)^T$ is equal to

a. $\begin{bmatrix} -2 & -4 \\ 2 & -6 \end{bmatrix}$

b. $\begin{bmatrix} -2 & 2 \\ -4 & -6 \end{bmatrix}$

c. $\begin{bmatrix} -2 & 2 \\ -6 & -4 \end{bmatrix}$

d. $\begin{bmatrix} -6 & -2 \\ 2 & 4 \end{bmatrix}$

4. $AC - BC$ is equal to

a. $\begin{bmatrix} -4 & -6 \\ -4 & 4 \end{bmatrix}$

b. $\begin{bmatrix} -4 & -4 \\ 4 & -6 \end{bmatrix}$

c. $\begin{bmatrix} -4 & -4 \\ -6 & 4 \end{bmatrix}$

d. $\begin{bmatrix} -6 & 4 \\ -4 & -4 \end{bmatrix}$

5. $(a + b)B$ is equal to

a. $\begin{bmatrix} 0 & 8 \\ 10 & 2 \end{bmatrix}$

b. $\begin{bmatrix} 2 & 10 \\ 8 & 0 \end{bmatrix}$

c. $\begin{bmatrix} 8 & 0 \\ 2 & 10 \end{bmatrix}$

d. $\begin{bmatrix} 2 & 0 \\ 8 & 10 \end{bmatrix}$

केन्द्रीय विद्यालय क्रमांक 2 जालंधर छावनी।

ग्रीष्मकालीन अवकाश कार्य।

दिनांक 9 मई से 17 जून 2022 तक

कक्षा बारहवीं.

1. काव्यखंड की समस्त कविताओं पर आधारित सार लिखना।
2. गद्य के समस्त पाठों पर आधारित सार लिखना।
3. वितान के समस्त पाठों को पढ़कर उनका सार लिखना।
4. पढ़ी गई पुस्तकों की समीक्षा लिखना।
5. घूमने गए स्थल का यात्रावृतांत लिखना।
6. ग्रीष्मकालीन अवकाश में सीखें जाने वाले कार्य के बारे में रिपोर्ट लिखना।

उक्त कार्य पृथक फाइल में लिखकर करें।
अवकाश के बाद विषय शिक्षक को जमा करें।

द्वारा
डॉ० सुशील कुमार
स्नातकोत्तर शिक्षक
(हिन्दी)

K V NO 2 JALANDHAR CANTT
HOLIDAYS HOME WORK
CLASS XII
SUBJECT ECONOMICS

NAME OF THE TOPIC	ASSIGNMENT
MONEY AND BANKING	Define money and explain evolution of Money. What is barter system? What were its drawbacks? Explain the functions of money. Explain various concepts of money supply. Explain the process of credit creation with the help of a numerical example. Explain various functions of Central bank? Explain any three quantitative & qualitative measures of credit control by the central bank.
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	Solve 50 numerical on Value added, income & expenditure method
Govt Budget	Define Budget & explain its objectives. Write the difference between revenue receipts and capital receipts. Write the difference between revenue expenditure & capital expenditure. Explain various sources of revenue & capital receipts. Define public expenditure. Explain its types. Define fiscal deficit. Explain its implications & explain various measures to control it. Define revenue deficit. Explain its implications & explain various measures to control it.
Indian Economy on the Eve of Independence	Explain the feature of Indian Economy on the Eve of Independence. Explain the demographic profile of India on the Eve of Independence. Explain the occupational structure of Indian Economy.
	Learn & revise the whole syllabus covered in the class & solve board-based questions on the topics covered in the class.

ENGLISH

Holidays' Homework (Summer Break)

Section A- Chapter Based

Prepare Pictorial storyboards using matchstick drawings for following chapters:

I. The Last Lesson
II. Lost Spring
III. The Third Level
IV. The Tiger King
V. My Mother at Sixty-Six

Section B- Activity Based

1. Read English newspapers regularly during the 40 days summer holidays and do the following:
   (i)Select at least 05 Letters to Editor, 05 Articles and 05 News reports(Accident, Celebration etc.)
   (ii) Cut and paste them in your notebook.
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Section C- PISA CCT

Attempt PISA CCT English Reading passages for the months January to May from DIKSHA Portal to improve your reading skills.

Section D- Art Integrated Project Based on EBSB

CULINARY: Prepare a South Indian dish with the assistance of your parents/ elders adopting safety measures. Write your recipe and experience in English language. Take photographs of the same and attach with your project report.

\

Subject: Accountancy

Class: XII C

1) Solve all questions given in the exercise of Chapter: Fundamentals of Partnership
2) Solve questions of the same chapter from CBSE last 5 year's papers.

Subject: Business Studies

1) Solve short answer type and long answer type questions of ncert of Chapter: Nature and significance of management and Principles of Management.
2) Solve questions of the same chapters of CBSE last 5 year's papers.

CLASS XII IP

1. Practical questions to be done using pydroid app.
2. Solved questions of Pandas I.
3. Chart/PPT on cyber security.

SUMMER VACATION HOLIDAY ASSIGNMENT (2022-23)

CLASS- XII

SUBJECT- MATHEMATICS

INSTRUCTIONS:

- *Read all the questions carefully before solving. Write the solution of questions in Mathematics homework or Activity notebook.*
- *Complete the project separately on A4 sheets in neat and clear hand writing and attractive.*

- *Write your name, class and section clearly at the front cover of project file.*

Section A (Questions)

1. If a matrix has 5 elements, write all possible order it can have?
2. If $\begin{bmatrix}3 & 4\\ 2 & x\end{bmatrix}\begin{bmatrix}x\\ 1\end{bmatrix} = \begin{bmatrix}19\\ 15\end{bmatrix}$, find the val
3. Construct a 3x3 matrix A, where $a_{ij} = 2i - 3j$
4. If order of matrix A is 2x3 and order of matrix B is 3x4 , find the order of AB.
5. If A and B are matrices of order $3 \times n$ and $m \times 5$ respectively, then find the order of matrix 5A – 3B, given that it is defined..
6. Let A = $[aij]$ be a square matrix of order 3×3 and |A|= -7. Find the value of $a11\ A11 + a12A12 + a13\ A13$ where Aij is the cofactor of element aij.
7. Find the value of A^2, where A is a 2×2 matrix whose elements are given by

$$aij = \begin{cases}1, if\ i \neq j\\ 0, if\ i = j\end{cases}$$

8. If $\begin{pmatrix}2x+y & 3y\\ 0 & 4\end{pmatrix} = \begin{pmatrix}6 & 0\\ 6 & 4\end{pmatrix}'$, then find x and y.
9. If $A^T = \begin{bmatrix}3 & 4\\ -1 & 2\\ 0 & 1\end{bmatrix}$ $and\ B = \begin{bmatrix}-1 & 2 & 1\\ 1 & 2 & 3\end{bmatrix}, then\ find\ A^T - B^T.$
10. If A = $\begin{pmatrix}4 & x+2\\ 2x-3 & x+1\end{pmatrix}$ $is\ symmetric\ Find\ x.$:
11. Find the product $\begin{bmatrix}1\\ 2\\ 3\end{bmatrix}[2 \quad 3 \quad 4]$
12. Show that A = $\begin{bmatrix}1 & 2 & 2\\ 2 & 1 & 2\\ 2 & 2 & 1\end{bmatrix}$ satisfies $A^2 - 4A - 5\ I = 0$
13. Prepare 10 MCQ TYPE QUESTIONS from CHAPTER-3 and 4. Also write the solution.

Section B (activities)

14. Perform following activities and write in activity notebook:

Activity 1: <u>OBJECTIVE</u> : To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l ⊥ m} is symmetric but neither reflexive nor transitive

.

Activity 2: <u>OBJECTIVE</u> : To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l || m} is an equivalence relation.

Activity 3: <u>OBJECTIVE:</u> To demonstrate a function which is not one-one but is onto.

Activity 4: <u>OBJECTIVE:</u> To demonstrate a function which is one-one but not onto.

15. <u>CCT QUESTIONS</u>

CASE STUDY1

A manufacture produces three stationery products Pencil, Eraser and Sharpener which he sells in two markets. Annual sales are indicated below

CASE STUDY 2

Amit, Biraj and Chirag were given the task of creating a square matrux of order 2.

Below are the matrices created by them. A, B , C are the matrices created by Amit, Biraj and Chirag respectively.

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If a = 4 and b = −2, based on the above information answer the following:

1. Sum of the matrices A, B and C , $A+(B+C)$ is
   a. $\begin{bmatrix} 1 & 6 \\ 2 & 7 \end{bmatrix}$
   b. $\begin{bmatrix} 6 & 1 \\ 7 & 2 \end{bmatrix}$
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3. $(bA)^T$ is equal to

a. $\begin{bmatrix} -2 & -4 \\ 2 & -6 \end{bmatrix}$

b. $\begin{bmatrix} -2 & 2 \\ -4 & -6 \end{bmatrix}$

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d. $\begin{bmatrix} -6 & -2 \\ 2 & 4 \end{bmatrix}$

4. $AC - BC$ is equal to

a. $\begin{bmatrix} -4 & -6 \\ -4 & 4 \end{bmatrix}$

b. $\begin{bmatrix} -4 & -4 \\ 4 & -6 \end{bmatrix}$

c. $\begin{bmatrix} -4 & -4 \\ -6 & 4 \end{bmatrix}$

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5. $(a + b)B$ is equal to

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b. $\begin{bmatrix} 2 & 10 \\ 8 & 0 \end{bmatrix}$

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d. $\begin{bmatrix} 2 & 0 \\ 8 & 10 \end{bmatrix}$

केन्द्रीय विद्यालय क्रमांक 2 जालंधर छावनी।

ग्रीष्मकालीन अवकाश कार्य।

दिनांक 9 मई से 17 जून 2022 तक

कक्षा बारहवीं.

1. काव्यखंड की समस्त कविताओं पर आधारित सार लिखना।
2. गद्य के समस्त पाठों पर आधारित सार लिखना।
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   उक्त कार्य पृथक फाइल में लिखकर करें।
   अवकाश के बाद विषय शिक्षक को जमा करें।

द्वारा
डॉ० सुशील कुमार
स्नातकोत्तर शिक्षक
(हिन्दी)