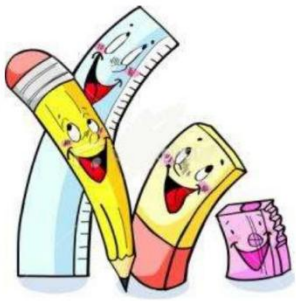
DEEPIKA PUBLIC SCHOOL

MANESAR

SESSION:- 2025-26

CLASS:- 12th

Dear Students



Summer vacations are synonymous with fun, frolic, getting up late in the morning, going for picnics, spending time with friends, exploring new places, and watching fun filled shows on television. But there is lot more you can do to make your vacations more meaningful, interesting, and fun while still doing your favourite activities.

Here are some suggestions you may like:

- Go out for morning walk and spend time to observe nature.
- Watch your mom working in the kitchen and help her keep the house clean.
- Visit your grandparents, spend time with them.
- Teach them to operate some useful applications in mobile phones.
- Plant a sapling and watch it grow.
- Play any sport with your parents which they played during their school days.
- Devote some time for reading during the summer break. Some suggested books:

Summer vacation is the time when you can be more candid and creative. The Holiday assignments are focused to let the creative and latent talents, skills and desires of the children come to the surface in a joyful and experiential manner.So dear children, Get… Set… Go… Enjoy doing the activities and ensure timely completion of the given assignments.

English (Core)

1. Complete the written work of the chapters in your notebook taught in the class till date. Also learn and revise them.
2. Go through all the poems done in the class till date. Also learn and revise all the question answers.
3. A student's anxieties never end. After clearing the Board Examination of class xii , there is the uncertainty of getting admission in a college and a course of one's choice. The ct office percentage in good colleges rises every year . There are hardly any openings for average students.
4. Write a letter to the Editor of a national daily stating the above problems . You are Reena/ Rohit from New Delhi.
5. While shopping at a popular fashionable market , you were distressed to see the harassment faced by some foreigners at the hands of self-proclaimed guides , greedy shopkeepers , vendors and even beggars.
6. Write a letter to the Editor of Indian Express, mentioning that we have forgotten our culture of hospitality and are responsible for spoiling the image of our country.

Write an article on the following topics in 200 words each :

A. Need for Counselling Before Board Examination
B. Reducing Pollution _ Need of the Hour
C. Role of Media _ What should it be
D. Vocational Training as part of the School Curriculum

7. Prepare a project on the topic ' The Saga of Industrialization and Urbanization '.

हिंदी

1-प्रदत्त विषय पर फीचर लिखिए।

(क) विज्ञापनों की लुभावनी दुनिया

(ख) बाल-श्रमिकों की समस्या

(ग) नशाखोरी की बढ़ती प्रवृत्ति

2. संचार से आप क्या समझते हैं? संचार के तत्वों, प्रकार, विशेषताएँ व कार्य पर प्रकाश डालिए ।

3-निम्नलिखित में से किन्हीं दो पर अनुच्छेद लिखिए।

(क) समाचार पत्र

(ख) रेडियो

(ग) इंटरनेट

5 भक्तिन, सिल्वर वैडिंग, आत्म-परिचय, पतंग पाठ के समस्त प्रश्न उत्तर याद कीजिए।

6-भारतीय संस्कृति में हिंदी का महत्व:

भारतीय संस्कृति में हिंदी भाषा की भूमिका और इसके महत्व पर एक परियोजना तैयार करिए। नोटः परियोजना कार्य ए-4 साईज शीट पर करना है तथा पृष्ठों को फाइल में लगाकर दें। अन्य कार्य अपनी उत्तर पुस्तिका में करें।

Mathematics

Chapter-4 (Determinent)

Que1) If $\begin{vmatrix} x-2 & -3 \\ 3x & 2x \end{vmatrix} = 3$ find the value of x

Que2) If the points (a1, b1), (a2, b2) and (a1+a2, b1+b2) are collinear, then show that a1b2=a2b1.

Que3) If the points (x, -2), (5, 2) and (8, 8) are collinear, find x using det.

Que4) Solve the following system of linear equations by using det.

(i) x+y+z=1 , x+2y+3z=4 , x+3y+5z=7

(ii) x+y+z=1 , ax+by+cz=k, $a^2x+b^2y+c^2z=k^2$

Que5) The sum of three numbers is 6. If we multiply the third number by 2 and add the first number to the result, we get 7. By adding second and the third numbers to the three times of the first number we get 12. Use matrices to find the number.

Que6) Determine the values of p for which the following system of equations fail to have a unique solution: px+3y-z=1 , x+2y+z=2 , -px+y+2z=-1

Que7) Verify that $\begin{bmatrix} 1 & 4 & 5 \\ 3 & 2 & 6 \\ 0 & 1 & 0 \end{bmatrix}$ **A(adjA) =|A|I=(adjA)A**

Que8) Find the inverse of the following matrices:

(i) $\begin{bmatrix} 8 & 4 & 2 \\ 2 & 9 & 4 \\ 1 & 2 & 8 \end{bmatrix}$. (ii) $\begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$ (iii) $\begin{bmatrix} 1 & -1 & 1 \\ 2 & -1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$.

Que9)

If $A = \begin{bmatrix} \cos\alpha & -\sin\alpha & 0 \\ \sin\alpha & \cos\alpha & 0 \\ 0 & 0 & 1 \end{bmatrix}$

Find (adjA) and verify that A(adjA) = (adjA)A =|A|I

Que10) If |A|= , show that A'A^{-1}=

$$\begin{bmatrix} \cos 2x & -\sin 2x \\ \sin 2x & \cos 2x \end{bmatrix} \qquad \begin{vmatrix} 1 & \tan x \\ -\tan x & 1 \end{vmatrix}$$

Que11) Find the matrix A satisfying the matrix equation

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

Que12) If $A = \begin{bmatrix} \cos x & \sin x \\ -\sin x & \cos x \end{bmatrix}$, **is such that A'=A^{-1}, find x.**

Que13) Find A non singular matrix A, if it is given that

$$adj(A) = \begin{bmatrix} -1 & -2 & 1 \\ 3 & 0 & -3 \\ 1 & -4 & 1 \end{bmatrix}$$

Que14) Find x, y

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

Que15) If $A = \begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$ **verify that A^3-6A^2+9A-4I=0.Hence find A^{-1}**

Que16) If $A = \begin{bmatrix} 1 & -2 & 3 \\ 0 & -1 & 4 \\ -2 & 2 & 1 \end{bmatrix}$, find $(A')^{-1}$

Que17) Find A^{-1} if $A = \begin{vmatrix} 0 & 1 & 1 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{vmatrix}$ and show that $A^{-1} = \frac{A^2 - 3I}{2}$

Que18) If $A = \begin{bmatrix} 2 & 3 & 4 \\ 1 & -1 & 0 \\ 0 & 1 & 2 \end{bmatrix}$, find A^{-1}. Hence, solve the system of linear equation:

2x+3y+4z=17, x-y=3 , y+2z=7

Que19) Determine the product and use itto solve the system. Of equations: $\begin{bmatrix} -4 & 4 & 4 \\ -7 & 1 & 3 \\ 5 & -3 & -1 \end{bmatrix} \begin{bmatrix} 1 & -1 & 1 \\ 1 & -2 & -2 \\ 2 & 1 & 3 \end{bmatrix}$ **x-y+z=4, x-2y-2z=9, 2x+y+3z=1**

Que20) An amount of Rs 5000 is put into three investments at the rate of interest of 6%,7% and 8% per annum respectively. The total annual income is Rs 358. If the combined income from the first taoinvestments is Rs 70 more than the income from the third, find the amount of each investment by matrirx method.

Que21) $A = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$ **Find BA and use this to solve the system linear equations: x-y=3, 2x+3y+4z=17, y+2z=7.**

Ques 22) The sum of three numbers is 9. If twice the second number is added to the sum of first and third, the sum is 1. By adding second and third number to five times the first number, we get 6.Find the three numbers by using matrices.

Ques 23)A company produces three products every day. Their production on a certain day is 45 tons. It is found that the production of third product exceeds the production of first product by 8 tons while the total production of first and third product is twice the production of second product.Determine the production level of each product by using matrix method.

Ques 24)A shopkeeper has 3 varieties of Pen (A), (B), (C).Meenu purchased 1 pen of each variety for a total of Rs 21.Jeen purchased 4 pens of 'A' variety, 3 pens of 'B' variety and 2 pens of 'C' variety for Rs 60.While Shikha purchased 6 pens of 'A' variety,

2 pens of 'B' variety, 3 pens of 'C' variety for Rs 70.Using matrix method, find the cost of each pen.

Ques 25)Two factories decided to award their employees of (a) adaptable to new techniques, (b) careful and alert in difficult situations and (c) keeping calm in tense situations, at the rate of Rs x, Rs y, Rs z per person respectively.The first factory decided to honour respectively 2, 4, and 3 employees with a total prize money of Rs 29000.The second factory decided to honour respectively 5, 2, and 3 employees with the prize money of Rs 30500.If the three prizes per person together cost Rs 9500, then
i) Represent the above situation by a matrix equation and form linear equations using matrix multiplication.
ii) Solve these equations using matrices.
iii) Which values are reflected in the questions?

Chapter-3(Matrix)

Que1- Find x , y, z and w such that $\begin{bmatrix} x-y & 2z+w \\ 2x-y & 2x+w \end{bmatrix} = \begin{bmatrix} 5 & 3 \\ 12 & 15 \end{bmatrix}$

Que 2 – Construct a 3 x 2 matrix A = [aij] whose elements aij is given by :-

aij = $(2i+j)^2/2$ ii) aij = i + i/j

Que 3 – If $\begin{bmatrix} xy & 4 \\ z+6 & x+y \end{bmatrix} = \begin{bmatrix} 8 & w \\ 0 & 6 \end{bmatrix}$ **, then find the value of x,y,z,w .**

Que 4 – Find a matrix A such that 2A-3B+5C=0 , Where
$\begin{bmatrix} -2 & 2 & 0 \\ 3 & 1 & 4 \end{bmatrix}$ and $C = \begin{bmatrix} 2 & 0 & -2 \\ 7 & 1 & 6 \end{bmatrix}$

Que 5 – Solve the matrix equation :[x^2 y^2]-3[x 2y]=[-2, 9]

Que 6 – If $A = \begin{bmatrix} 2 & 1 \\ 1 & 0 \end{bmatrix}, B = \begin{bmatrix} 1 & -1 \\ 2 & 3 \end{bmatrix}$ **, Prove that (A+B)^2 ≠ A^2 + 2AB + B^2 .**

Que 7 – If $A = \begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix}, B = \begin{bmatrix} a & 1 \\ b & -1 \end{bmatrix}$ **and (A + B)^2 =A^2 + B^2 , find a and b .**

Que 8 – If $A = \begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$ **, find x and y such that (XI + YA)^2 = A.**

Que 9 – If $A = \begin{bmatrix} 0 & -\tan\frac{\alpha}{2} \\ \tan\frac{\alpha}{2} & 0 \end{bmatrix}$ **and I be the identify matrix of order 2 . show that**

$(I + A) = (I - A)\begin{bmatrix} \cos\alpha & -\sin\alpha \\ \sin\alpha & \cos\alpha \end{bmatrix}$.

Que 10 – If A is a square matrix such that $A^2 = I$, then find the simplified value of $(A- I)^3 = (A + I)^3 - 7A$.

Que 11 –Solve the matrix equation :

(i) $\begin{bmatrix} 1 & 2 & 1 \end{bmatrix}\begin{bmatrix} 1 & 2 & 0 \\ 2 & 0 & 1 \\ 1 & 0 & 2 \end{bmatrix}\begin{bmatrix} 0 \\ 2 \\ x \end{bmatrix} = O$

ii) $\begin{bmatrix} x & -5 & -1 \end{bmatrix}\begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix}\begin{bmatrix} x \\ 4 \\ 1 \end{bmatrix} = 0$

Que12) $A = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix}$ **then show that A is the root of the polynomial**

$F(x) = x^3-6x^2+7x+2$.

Que13) Let $A = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 1 & 3 \\ 1 & 2 & 1 \end{bmatrix} and B = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 1 & 3 \\ 0 & 1 & 1 \end{bmatrix}$. **Find A' and B' and verify that**

(i) (A'+B') =A'+B' (ii) (AB) '= B'+A' (iii) (2A) '=2A'

Que14) Show that the matrix B'AB is symmetric or skew symmetric according as A is symmetric or skew symmetric.

Que15) Let A and B be symmetric matrices of same order. Then show that

(i) A+B is a symmetric matrix,

(ii) AB-BA is a skew symmetric matrix and

(iii) AB+BA is a symmetric matrix

Make A PPT on

(i) Relation and function (Kunal, Vaibhav, Gourav, Aditya, Krish)

(ii) Determinent(Ritika, Nancy, Anshika, Himesh, Pardeep)

(iii) Matrix (Prem, Khushi, Charu, Hussain, Himanshu)

Biology

- Make a project on given topic.
- Solve MCQs of all chapter from previous NEET exam.
- Learn Chapter-1,2,3,4 & 5.

Accountancy

Solve All the illustrations and practical questions of chapter - Shares and Introduction to Accounting.

- Make a project on given topic.
- Solve MCQs of all chapter from previous neet exam.
- Learn ch - 1, 2, 3, 4, 5

Physics

- Solve questions of chapter- 1,2 & 3 of NCERT in your notebook.
- Revise chapter- 1,2 & 3.
- Make a project on “Series and parallel circuits.

Chemistry

1. Make a project on topic- Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper/ Comparative study of the rate of fermentation of following materials: wheat flour, gram flour,potato juice, carrot juice etc.
2. Solve the ncert questions of chapter 1 and 5.
3. Solve the assignment questions.

ASSIGNMENT

Q1. MCQ-

1. What is the term for the process by which a solid dissolves in a liquid?
a) Melting
b) Boiling
c) Dissolution
d) Crystallization

2. Which of the following is an example of a homogeneous mixture?
a) Sand and water
b) Oil and water
c) Sugar and water
d) Air

3. What is the term for the maximum amount of solute that can dissolve in a given amount of solvent at a particular temperature?
a) Solubility
b) Concentration
c) Saturation
d) Dissociation

4. What type of solution is formed when a solid dissolves in a liquid?
a) Gaseous
b) Liquid
c) Solid
d) Homogeneous

5. Which of the following is an example of a strong electrolyte?
a) Sugar
b) Salt
c) Water
d) Oil

6. What is the unit of measurement for molarity?
a) Moles/liter
b) Grams/liter
c) Moles/gram
d) Grams/mole

7. What is the term for the process by which a solute dissolves in a solvent?
a) Dissolution
b) Crystallization
c) Melting
d) Boiling

8. Which of the following is an example of a colloid?
a) Sugar and water
b) Oil and water
c) Milk
d) Air

9. What is the term for the amount of solute present in a given amount of solution?
a) Concentration
b) Solubility
c) Molarity
d) Molality

10. Which of the following is an example of a heterogeneous mixture?

a) Sugar and water
b) Oil and water
c) Sand and water
d) Air

Part B: Short Answer Questions-

1. What is the difference between monodentate and bidendate ligand? Explain with examples.

2. Explain the concept of solubility and how it is affected by temperature and pressure.

3. What is the difference between inner orbital complex and outer orbital complex?

4. Explain different types of isomers with examples.

5. 2 g of benzoic acid (C_6H_5COOH) dissolved in 25 g of benzene shows a depression in Freezing point equal to 1.62 K. Molal depression constant of benzene is 4.9 K kg mol^{-1}. What is the percentage association of acid, if it forms dimmer in solution?

6. With the help of a neat diagram describing reverse osmosis. How can water be purified by this process? Explain its importance in the context of gulf countries.

7. Explain abnormal molar mass giving example of potassium chloride and acetic acid.

8. Phenol associates in benzene to a certain extent to form a dimer. A solution containing 20 g of phenol in 1.0 kg of benzene has its freezing point lowered by 0.69 K. Calculate the fraction of phenol that has dimerised. [Given Kf for benzene is 5.1]

9. Explain the following:
(a) The π-complexes are known for transition elements only.
(b) Nickel(II) does not form low spin octahedral complexes.
(c) $[Fe(CN)_6]^{4-}$ and $[Fe(H_2O)_6]^{2+}$ are of different colours in dilute solutions.

10. Show the possible isomers of the following coordination entities?
(i) $[Cr(C_2O_4)_3]^{3-}$ (ii) $[Co(NH_3)_3Cl_3]$
(iii) $[Co(en)_2Cl_2]Cl$

Part C: Long Answer Questions
1. Calculate the molarity of a solution containing 10g of NaCl in 250ml of water.

2. Give reasons:
1) $K_3[Fe(CN)_6]$ is weakly paramagnetic whereas $K_3[FeF_6]$ is highly paramagnetic.
2) Though CO is a weak lewis base yet it forms a number of stable metal carbonyls . Explain.

3. Calculate the number of moles of solute present in 500ml of a 0.5M solution.

4. A solution of salt in water has a concentration of 3.5g/100ml. What is the concentration of the solution in terms of molarity?

5. Calculate the volume of a 2M solution of sugar in water that contains 1 mole of sugar.

6. Calculate the coordination number of the central metal atom in the complex [Co(NH3)6]3+.

7. Calculate the oxidation state of the central metal atom in the complex [Cu(NH3)4]2+.

8. Calculate the crystal field splitting energy of the complex [Ni(CN)4]2-.

9. Calculate the magnetic moment of the complex [Co(NH3)6]3+.

10. Calculate the number of unpaired electrons in the complex [Cu(NH3)4]2+.

Political Science

1. **Learn** all the chapters completed so far.
2. **Write** 30 MCQs or one-word answer type questions from **each completed chapter** in a separate notebook.
3. **Prepare a project** on the topic: **SAARC (Kashish, Mohit)**

   ASEAN (Kavita, Suraj, Rohit)

   UN Agencies- UNICEF, UNESCO, WHO. (Nancy, Pradeep)

   Current updates should be highlighted.

History

***Prepare a project on the topics "Beads,bricks & bones"**
"Kinship, cast & class"
"Thikers, beliefs & thebuildings"
***Complete your N/B of ch. 1.,2,3,4**
Question/Answer & notes.
*Learn ch. 1,2,3,4 complete.
*Locate the different sites of Harappan civilisation on the map of India.
*Empire of the great king Ashoka.
*Different locations of the Stupas
on the map of India.

Business studies

1) Make an assignment on Consumer Protection.
2) Revise Ch - 4,5,6.

Economics

1) Make a project on given topics.

Yoga

1. Do practice of ‘Surya Namaskar’ for mid-term practical.