

**ARMY PUBLIC SCHOOL JAMMU CANTT
HOLIDAYS HOMEWORK-XII (2021-22)**



ENGLISH (301)



Dear Children

We wish you happy and safe summer break. To maintain the educational continuum and to keep boredom at bay, your teachers have designed enriching assignments and projects which will keep you constructively busy.

So, don your thinking cap and wear your magic mantle to unleash your creative side.

Have Fun!!!

WRITING SECTION

1. Write your views on the contemporary topic ‘Will virtual learning actually replace the offline learning?’ (100-120 words)
2. Write your views on ‘The positive and negative effects of the COVID-19 on Education System’ in 100-120 words.
3. COVID-19 pandemic has brought massive drastic changes in human psychological behavior worldwide. Write a letter to Editor of ‘The Tribune’ and discuss problems faced by an ordinary man during this phase and suggest ways to combat this virus and need of ‘self-protection’.

LITERATURE SECTION

Revise the syllabus done in the class & prepare yourself for the assessment to be held post summer vacation.

ART INTEGRATED ACTIVITIES

I know you can do wonders, my highly creative children..!

1. Create illustrated comic strips representing events from history or work of fiction or a chapter or poem from your literature book. You can either unleash your creativity by drawing comics or use apps to create them.
2. Prepare a PPT for the chapter The Third Level.

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**PHYSICS (042)**

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Read textbook material for chapters

1. Electric charges and fields (pdf provided)
2. Electrostatic potential and capacitance (pdf provided)
3. Current electricity (pdf provided)
4. Moving charges and magnetism (pdf provided)

THEORY ASSIGNMENT

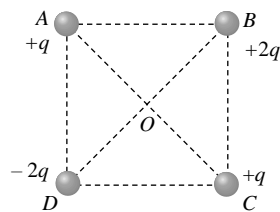
Solve NCERT exercises of the following chapters

1. Electric charges and fields
2. Electrostatic potential and capacitance
3. Current electricity
4. Moving charges and magnetism

Solve the following numerical:

Charge and Coulomb's Law

1. When the distance between the charged particles is halved, then find force between them.
2. There are two charges +1 microcoulombs and +5 microcoulombs. What is the ratio of the forces acting on them?
3. F_g and F_e represents gravitational and electrostatic force respectively between electrons situated at a distance 10 cm. The ratio of F_g / F_e is of the order of -----.
4. Four charges are arranged at the corners of a square ABCD, as shown in the adjoining figure. Find the force on the charge kept at the centre O i

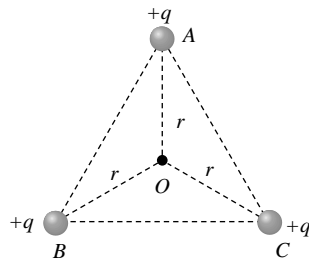


5. A total charge Q is broken in two parts Q_1 and Q_2 and they are placed at a distance R from each other. What is condition for maximum force of repulsion between them?
6. Three charges $4q, Q$ and q are in a straight line in the position of 0, $l/2$ and l respectively. The resultant force on q will be zero, if $Q =$ -----.
7. $+2C$ and $+6C$ two charges are repelling each other with a force of $12N$. If each charge is given $-2C$ of charge, then what is value of the force?
8. Dielectric constant of pure water is 81. What is its permittivity?

Electric Field and Potential

1. Charges of $+\frac{10}{3}\times 10^{-9} C$ are placed at each of the four corners of a square of side 8 cm . Then what is the potential at the intersection of the diagonals
2. Three charges $2q, -q, -q$ are located at the vertices of an equilateral triangle. At the center of the triangle
 - (a) The field is zero but potential is non-zero
 - (b) The field is non-zero but potential is zero
 - (c) Both field and potential are zero
 - (d) Both field and potential are non-zero
3. ABC is an equilateral triangle. Charges $+q$ are placed at each corner. The electric intensity at O will be

- (a) $\frac{1}{4\pi\epsilon_0} \frac{q}{r^2}$
- (b) $\frac{1}{4\pi\epsilon_0} \frac{q}{r}$
- (c) Zero
- (d) $\frac{1}{4\pi\epsilon_0} \frac{3q}{r^2}$



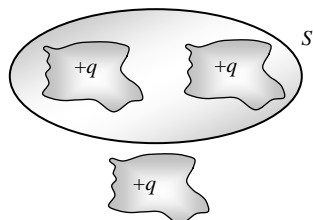
4. The magnitude of electric field intensity E is such that, an electron placed in it would experience an electrical force equal to its weight is given by -----.
5. Two parallel plates have equal and opposite charge. When the space between them is evacuated, the electric field between the plates is $2\times 10^5\text{ V/m}$. When the space is filled with dielectric, the electric field becomes $1\times 10^5\text{ V/m}$. Find the dielectric constant of the dielectric material
6. Two charges $+4e$ and $+e$ are at a distance x apart. At what distance, a charge q must be placed from charge $+e$ so that it is in equilibrium
7. Two plates are 2 cm apart, a potential difference of 10 volt is applied between them, the electric field between the plates is -----.
8. At a certain distance from a point charge the electric field is 500 V/m and the potential is 3000 V . What is this distance
9. What is the magnitude of a point charge due to which the electric field 30 cm away has the magnitude 2 newton/coulomb [$1/4\pi\epsilon_0 = 9\times 10^9\text{ Nm}^2/\text{C}^2$]
10. Two positive charges of 20 coulomb and $Q\text{ coulomb}$ are situated at a distance of 60 cm . The neutral point between them is at a distance of 20 cm from the 20 coulomb charge. Then find Charge Q
11. An alpha particle is accelerated through a potential difference of 10^6 volt . Its kinetic energy will be -----.
12. A charge of 5 C is given a displacement of 0.5 m . The work done in the process is 10 J . Find the potential difference between the two points.

Electric Dipole

1. A given charge is situated at a certain distance from an electric dipole in the end-on position experiences a force F . If the distance of the charge is doubled, the force acting on the charge will be-----.
2. An electric dipole consisting of two opposite charges of $2 \times 10^{-6} C$ each separated by a distance of $3 cm$ is placed in an electric field of $2 \times 10^5 N/C$. what is the maximum torque on the dipole.
3. Two charges $+3.2 \times 10^{-19}$ and $-3.2 \times 10^{-19} C$ placed at 2.4 \AA apart form an electric dipole. It is placed in a uniform electric field of intensity $4 \times 10^5 \text{ volt/m}$. Then what is the electric dipole moment.
4. Electric charges $q, q, -2q$ are placed at the corners of an equilateral triangle ABC of side l . Find the magnitude of electric dipole moment of the system.
5. Two opposite and equal charges $4 \times 10^{-8} \text{ coulomb}$ when placed $2 \times 10^{-2} cm$ away, form a dipole. If this dipole is placed in an external electric field $4 \times 10^8 \text{ newton/coulomb}$, then find value of maximum torque and the work done in rotating it through 180° .
6. The distance between H^+ and Cl^- ions in HCl molecule is 1.28 \AA . What will be the potential due to this dipole at a distance of 12 \AA on the axis of dipole?
7. For a dipole $q = 2 \times 10^{-6} C$ and $d = 0.01 m$. Calculate the maximum torque for this dipole if $E = 5 \times 10^5 N/C$
8. Two charges $+3.2 \times 10^{-19} C$ and $-3.2 \times 10^{-9} C$ kept 2.4 \AA apart forms a dipole. If it is kept in uniform electric field of intensity $4 \times 10^5 \text{ volt/m}$ then what will be its electrical energy in equilibrium
9. What is the angle between the electric dipole moment and the electric field strength due to it on the equatorial line?

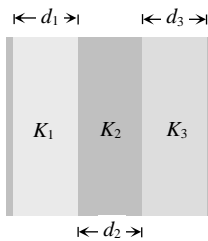
Electric Flux and Gauss's Law

1. A cube of side l is placed in a uniform field E , where $E = E\hat{i}$. Find net electric flux through the cube.
2. Eight dipoles of charges of magnitude e are placed inside a cube. Then what is the total electric flux coming out of the cube.
3. The inward and outward electric flux for a closed surface in units of $N \cdot m^2 / C$ are respectively 8×10^3 and 4×10^3 . Then what is the total charge inside the surface .[where $\epsilon_0 =$ permittivity constant]
4. If the electric flux entering and leaving an enclosed surface respectively is ϕ_1 and ϕ_2 the electric charge inside the surface will be -----.
5. Shown below is a distribution of charges. The flux of electric field due to these charges through the surface S is



Capacitance

1. A parallel plate capacitor has a capacity C . The separation between the plates is doubled and a dielectric medium is introduced between the plates. If the capacity now becomes $2C$, the dielectric constant of the medium is-----.
2. The diameter of each plate of an air capacitor is 4 cm . To make the capacity of this plate capacitor equal to that of 20 cm diameter sphere, the distance between the plates will be-----
3. The expression for the capacity of the capacitor formed by compound dielectric placed between the plates of a parallel plate capacitor as shown in figure, will be (area of plate = A)

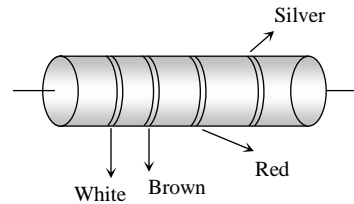


4. The capacity of a condenser in which a dielectric of dielectric constant 5 has been used, is C . If the dielectric is replaced by another with dielectric constant 20, then what is capacity?
5. A charge of 10^{-9} C is placed on each of the 64 identical drops of radius 2 cm . They are then combined to form a bigger drop. Find its potential
6. What is the area of the plates of a 3 F parallel plate capacitor, if the separation between the plates is 5 mm
7. A 10 pF capacitor is connected to a 50 V battery. How much electrostatic energy is stored in the capacitor
8. What is the radius of a metallic sphere if its capacitance is $1/9\text{ F}$?

Electric current

1. The specific resistance of a wire is ρ , its volume is 3 m^3 and its resistance is 3 ohms , then what is its length.
2. 62.5×10^{18} Electrons per second are flowing through a wire of area of cross-section 0.1 m^2 , then what is the value of current flowing?
3. A piece of wire of resistance 4 ohms is bent through 180° at its mid-point and the two halves are twisted together, then the resistance is -----.
4. When a piece of aluminum wire of finite length is drawn through a series of dies to reduce its diameter to half its original value, its resistance will become-----.
5. In hydrogen atom, the electron makes 6.6×10^{15} revolutions per second around the nucleus in an orbit of radius $0.5 \times 10^{-10}\text{ m}$. It is equivalent to a current nearly -----.
6. The resistance of a wire is 10Ω . Its length is increased by 10% by stretching. Then what is new resistance.
7. Resistance of tungsten wire at 150°C is 133Ω . Its resistance temperature coefficient is $0.0045/^\circ\text{C}$. find resistance of this wire at 500°C .
8. A metal wire of specific resistance $64 \times 10^{-6}\text{ ohm-cm}$ and length 198 cm has a resistance of 7 ohm , then what is radius of the wire.
9. Calculate the amount of charge flowing in 2 minutes in a wire of resistance 10Ω when a potential difference of 20 V is applied between its ends
10. There is a current of 40 ampere in a wire of 10^{-6} m^2 area of cross-section. If the number of free electron per m^3 is 10^{29} , then find drift velocity.

11. In the figure a carbon resistor has bands of different colours on its body as mentioned in the figure. The value of the resistance is



12. Masses of 3 wires of same metal are in the ratio 1: 2: 3 and their lengths are in the ratio 3: 2: 1. The electrical resistances are in ratio-----.
13. What is the resistance of a carbon resistance which has bands of colors brown, black and brown
14. The color sequence in a carbon resistor is red, brown, orange and silver. The resistance of the resistor is -----.
15. If a rod has resistance 4Ω and if rod is turned as half cycle then find the resistance along diameter.

PRACTICAL WORK

The record, to be submitted by the students, at the time of their submission of holiday's homework has to include Record of following practical.

(As demonstrated by the teacher).

1. To determine resistance per cm of a given wire by plotting a graph for potential difference versus current.
2. To find resistance of a given wire using metre bridge and hence determine the resistivity (specific resistance) of its material.
3. To verify the laws of combination (series) of resistances using a metre bridge.
4. To verify the Laws of combination (parallel) of resistances using a metre bridge.
5. To compare the EMF of two given primary cells using potentiometer.
6. To determine the internal resistance of given primary cell using potentiometer.

Note: All work should done on respective copy/practical file in a neat and proper order as provided above.

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**CHEMISTRY (043)**

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Read textbook material for chapters

1. Types of unit cell and defects(pdf provided)
2. Properties of solid conductance and magnetic (pdf provided)
3. Vapour pressure and ideal solution (pdf provided)
4. Colligative properties and abnormal molar mass (pdf provided)

THEORY ASSIGNMENT

Solve NCERT exercises of the following chapters:

1. Solid state
2. Solution(colligative properties)
3. Electro chemistry

Solve at least five numerical based on each given formulas:

1. Density of unit cell
$$D = \frac{ZM}{N_A(a)^3}$$
2. Raoult's law for volatile solute and solvent
$$P_s = P_1 + P_2 \quad (1 \text{ solvent}, 2 \text{ solute})$$
3. Raoult's law for non volatile solute
$$\frac{(P_0 - P_s)}{P_0} = X_2^i \quad (X_2 \text{ mole fraction of solute})$$
4. Elevation in boiling point.
$$T_s - T_1 = K_b(m)_i \quad (T_s - T_1 \text{ is change in bp of solution})$$
5. Depression in freezing point
$$T_1 - T_s = K_f(m)_i$$
6. Osmotic pressure
$$P_i = CRT_i$$

PRACTICAL WORK

The record, to be submitted by the students, at the time of their submission of holiday's homework has to include Record of following practical.

(As demonstrated by the teacher).

1. To prepare a sample of starch sol.
2. To prepare a double salt of ferrous ammonium sulphate.
3. To prepare 250 ml of M/40 oxalic acid.
4. To prepare a Crystal of potash alum.

Note: All work should done on respective copy/practical file in a neat and proper order as provided above

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**MATHEMATICS (041)**  
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CHAPTER: 1. RELATIONS AND FUNCTIONS

1. If R_1 and R_2 are equivalence relations in a set A, show that $R_1 \cap R_2$ is also an equivalence relation.
2. Let R be the relation on set A of ordered pairs of positive integers defined by $(x, y) R (u, v)$ if and only if $xv = yu$. Show that R is an equivalence relation.
3. Show that the number of equivalence relations in the set $\{ 1, 2, 3 \}$ containing $(1, 2)$ and $(2, 1)$ is two.
4. If $f(x) = \frac{x-1}{x+1}$, $(x \neq -1)$, show that $f \circ f^{-1}$ is an identity function.
5. If the function $f: \mathbb{R} \rightarrow \mathbb{R}$ is given by $f(x) = \frac{x+3}{2}$ and $g: \mathbb{R} \rightarrow \mathbb{R}$ is given by $g(x) = 2x - 3$, find $f \circ g$ and $g \circ f$. Is $f^{-1} = g$.
6. Let $f: \mathbb{N} \rightarrow \mathbb{R}$ be a function defined as $f(x) = 4x^2 + 12x + 15$. Show that $f: \mathbb{N} \rightarrow s$, where s is range of f, is invertible. Find also the inverse of f.

CHAPTER: 2. INVERSE TRIGONOMETRIC FUNCTIONS

1. If $a_1, a_2, a_3, \dots, a_n$ be an arithmetic progression with common difference d, then evaluate the following expression

$$\tan \left[\tan^{-1} \left(\frac{d}{1+a_1 a_2} \right) + \tan^{-1} \left(\frac{d}{1+a_2 a_3} \right) + \tan^{-1} \left(\frac{d}{1+a_3 a_4} \right) + \dots + \tan^{-1} \left(\frac{d}{1+a_{n-1} a_n} \right) \right]$$
2. Solve for x, $\tan^{-1}(x+1) + \tan^{-1}(x-1) = \tan^{-1} \frac{8}{31}$
3. Prove that $\sin^{-1} \frac{4}{5} + \sin^{-1} \frac{5}{13} + \sin^{-1} \frac{16}{65} = \frac{\pi}{2}$
4. Solve for x: $\tan^{-1}(x-1) + \tan^{-1} x + \tan^{-1}(x+1) = \tan^{-1} 3x$
5. Prove that $\tan^{-1} \left(\frac{6x-8x^3}{1-12x^2} \right) - \tan^{-1} \left(\frac{4x}{1-4x^2} \right) = \tan^{-1} 2x$; $|2x| < \frac{1}{\sqrt{3}}$
6. Prove that $2 \tan^{-1} \frac{1}{5} + \sec^{-1} \frac{5\sqrt{2}}{7} + 2 \tan^{-1} \frac{1}{8} = \frac{\pi}{4}$
7. Show that $\cos \left(2 \tan^{-1} \frac{1}{7} \right) = \sin \left(4 \tan^{-1} \frac{1}{3} \right)$

CHAPTER: 3 & 4. MATRICES AND DETERMINANT

1. Value of determinant $\begin{vmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{vmatrix}$ is

| | |
|---------------|-------|
| (A) abc | (B) 0 |
| (C) a + b + c | (D) 1 |

2. If $A = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$, then

(A) $A^3 = A, B^3 \neq B$

(B) $A^3 \neq A, B^3 = B$

(C) $A^3 = A, B^3 = B$

(D) $A^3 \neq A, B^3 \neq B$

3. Let $A = \begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$ and $f(x) = x^2 - 4x + 7$. Show that $f(A) = 0$ and use this result to find A^5 .

4. Using properties of determinants, prove that $\begin{vmatrix} a & b & c \\ a-b & b-c & c-a \\ b+c & c+a & a+b \end{vmatrix} = a^3 + b^3 + c^3 - 3abc$.

5. For what value of x , the matrix A is singular, if $A = \begin{bmatrix} 1+x & 7 \\ 3-x & 8 \end{bmatrix}$?

6. Using properties of determinants, prove that $\begin{vmatrix} a & a+b & a+b+c \\ 2a & 3a+2b & 4a+3b+2c \\ 3a & 6a+3b & 10a+6b+3c \end{vmatrix} = a^3$

7. For a 3×3 matrix A , given that $|A| = 3$, then find $|\text{adj}(A)|$.

Prove the following

8. $\begin{vmatrix} -bc & b^2 + bc & c^2 + bc \\ a^2 + ac & -ac & c^2 + ac \\ a^2 + ab & b^2 + ab & -ab \end{vmatrix} = (bc + ca + ab)^3$

9. $\begin{vmatrix} (b+c)^2 & ab & ca \\ ab & (a+c)^2 & bc \\ ac & bc & (a+b)^2 \end{vmatrix} = 2abc(a+b+c)^3$

10. Find the product AB , where $A = \begin{bmatrix} -4 & 4 & 4 \\ -7 & 1 & 3 \\ 5 & -3 & -1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -1 & 1 \\ 1 & -2 & -2 \\ 2 & 1 & 3 \end{bmatrix}$ and use it

to solve the equations $x - y + z = 4$, $x - 2y - 2z = 9$ and $2x + y + 3z = 1$.

11. Using elementary transformations, find the inverse of $\begin{vmatrix} 1 & 2 & 3 \\ 2 & 5 & 7 \\ -2 & -4 & -5 \end{vmatrix}$

12. For what value of k , the matrix $\begin{bmatrix} 2-k & 4 \\ -5 & 1 \end{bmatrix}$ is not invertible?

13. Using properties of determinants show that $\begin{vmatrix} y+z & x & y \\ z+x & z & x \\ x+y & y & z \end{vmatrix} = (x+y+z)(z-x)^2$.

14. If A is a matrix of order 2 x 3 and B is a matrix of order 3 x 5, then what is the order of matrix $(AB)^T$?

15. For keeping Fit X people believes in morning walk, Y people believe in yoga and Z people join Gym. Total no of people are 70. further 20% 30% and 40% people are suffering from any disease who believe in morning walk, yoga and GYM respectively. Total no. of such people is 21. If morning walk cost Rs 0 Yoga cost Rs 500/month and GYM cost Rs 400/ month and total expenditure is Rs 23000.

- a) Formulate a matrix problem.
- b) Calculate the no. of each type of people.
- c) Why exercise is important for health.

Note: Formulate 10 MCQs from each chapter and write them on the notebook with correct option number.

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**BIOLOGY (044)**

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Revise the following Chapters:

1. Reproduction in Organisms
2. Sexual Reproduction in flowering plants.
3. Reproduction in Humans
4. Reproductive Health

THEORY BASED QUESTIONS

1. Where fertilization does normally takes place in a human female.
2. Name the substance present in the sperm acrosome & which help in sperms entry into egg.
3. Name the layer of cells that forms the outer wall of blastocyst
4. At what stage is the mammalian embryo implanted in uterus?
5. Despite the presence of So many sperms in the vicinity of an egg cell, only one sperm enters the ovum. Why?
6. How many polar bodies are given out in production of one egg during oogenesis?
7. What is corpus luteum? How does it functions as endocrine gland?
8. Where are leydig cells located? What do they secrete?
9. Draw a labelled diagram of sperm.
10. Draw well labeled diagram of T.S. of ovary?
11. Briefly describe the stages of spermatogenesis in human?
12. Describe the hormonal control of human male reproduction system with the help of a flow chart & highlight the inhibitory & stimulatory directions in it?
13. What is menstruation? What are the specific actions of FSH, LH, estrogen & progesterone in menstrual cycle?
14. Why testes of human males are considered extra abdominal? What is the significance of this condition?
15. What is foetal ejection reflex? Explain how it leads to parturition?
16. How many sperms will be produced from 10 primary spermatocytes and how many eggs will be produced from 10 primary oocytes?
17. Draw a diagram of the T.S. of seminiferous tubule of testis of an adult human male & label any four parts in it.
18. Except endocrine function, what are the other functions of placenta?
19. What is colostrum? What is its significance to new born baby?
20. A sperm has just fertilized a human egg in the fallopian tube. Trace the events that the fertilized eggs will undergoes up to implantation of blastocyst in the uterus.
21. Where oogenesis does takes place. Describe the stages of this process?
22. A woman has conceived & implantation has occurred within her uterus. Discuss the sequence of changes up to parturition which will take place within her body under the influence of various hormones.
23. What is meant by L.H. Surge? Write the role of L.H.

24. How many eggs are released by a human ovary in a month? How many eggs do you think would have been released if the mother gave birth to identical twins? Would your answer change if the twins born were fraternal?
25. What is lactational amenorrhoea?
26. Write the scientific name of causative agents of :--
 - i) Syphilis
 - ii) Gonorrhoea.
27. Name the technique by which one can disorder any possible chromosomal or metabolic disorders in foetus.
28. Expand the following :-- i) GIFT ii) ICSI iii) IUCD
29. Name the fluid from which foetal cells are extracted for chromosomal analysis.
30. "Removal of Gonads cannot be a contraceptive option". Why?
31. What are MTPs? Under what conditions MTPs are legally permitted?
32. Describe the technique which is used for sex determination in foetus?
33. What are test tube babies? Are they different from normal babies?
34. Mention any four objectives of RCHC.
35. Describe the three manners in which fertilization of human ovum by sperm can be prevented?
36. Suggest some methods to assist infertile couples to have children?
37. Give another name for sexually transmitted diseases. Name two sexually transmitted diseases which are Curable and two diseases which are not curable.
38. Differentiate between Vasectomy and Tubectomy.
39. Name the techniques which are employed in following cases :
 - i) 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.
 - ii) Embryo is formed in laboratory in which sperm is directly injected into ovum.
 - iii) Semen collected either from husband or a healthy donor is artificially introduced either into vagina or uterus.
40. Amniocentesis for sex determination is banned in our country. Is this ban necessary? Comment.
41. What is the significance of progesterone-estrogen combination as a contraceptive measure?
42. Copper ions-releasing IUDs are more efficient than non-medicated methods. Why?
43. What is apomixis? What is its importance?
44. Discuss various out breeding devices in plants.
45. Explain the process of microsporogenesis.
46. Explain the process of megasporogenesis.
47. Draw the structure of :
 - i) Apocarpous and syncarpous ovary
 - ii) Mature anther
 - iii) Mature embryo sac
 - iv) Monocot seed and Dicot seed.
 - v) Monocot embryo and dicot embryo

48. Discuss the process of embryogenesis.
49. Discuss the characters of air pollinated plant, water pollinated plant and insect pollinated plants.

PRACTICAL WORK

1. To study pollen germination on the slide.
2. To study adaptations to pollination by different agencies (wind, insects and birds)
3. To identify the stages of gamete development i.e. T.S of Testes, T. S of Ovary through the permanent slides.
4. To study T. S of blastula through the permanent slide.

PROJECT WORK

1. Collect material for the investigatory project of your choice except for human diseases.
2. Make a SEWA project on the topics from the Environmental Issues.

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**COMPUTER SCIENCE (083)**

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Revise the following chapters:

1. Python Revision Tour-I
2. Python Revision Tour-II
3. Working with Functions
4. Using Python Libraries
5. File Handling

PRACTICAL WORK

Instructions regarding CS Practical File.

1. Purchase Computer Science Practical File (Sangam).
2. Write all the following programs in the file in the same sequence.
3. You have to write the code on the ruled sheet and the output on the plain sheet of the file.
4. Don't write two programs on the same sheet.
5. Use blue pen to write the code and pencil to write the output.
6. You have to also perform the practical and make a pdf of the executed code as well as output.

| S. No. | NAME OF PRACTICAL |
|-----------|---|
| 1 | Write a program in python to check a number whether it is prime or not. |
| 2 | Write a program to check a number whether it is palindrome or not. |
| 3 | Write a program to display ASCII code of a character and vice versa. |
| 4 | Write a function SwapNumbers() to swap two numbers and display the numbers before swapping and after swapping. |
| 5 | Write a program to find the sum of all elements of a list using recursion. |
| 6 | Write a program to calculate the factorial of an integer using recursion. |
| 7 | Write a program to print Fibonacci series using recursion. |
| 8 | Write a recursive python program to test if a string is palindrome or not. |
| 9 | Write a program to generate random numbers between 1 to 6 and check whether a user won a lottery or not. |
| 10 | Write a program to count the number of vowels present in a text file. |
| 11 | Write a program to write those lines which have the character 'p' from one text file to another text file. |
| 12 | Write a program to count number of words in a file. |
| 13 | Write a python program to write student data in a binary file. |
| 14 | Write a python program to read student data from a binary file.. |
| 15 | Write a python program to modify/update student data in a binary file. |
| 16 | Write a python program to delete student data from a binary file. |

| | |
|----|---|
| 17 | Write a python program to search a student record in a binary file. |
| 18 | Write a program to perform read and write operation with .csv file. |
| 19 | Write a program to create a library in python and import it in a program. |
| 20 | Write a program for linear search. |
| 21 | Write a program for bubble sort. |
| 22 | Write a menu based program to perform the operation on stack in python. |
| 23 | Write a menu based program to perform the operation on queue in python. |
| | SQL Queries : |
| 24 | Queries using Create database, Show databases, USE, Create table, Show Tables, Describe, Rename, Alter, Select, From, Where, Insert, Update commands. |
| 25 | Queries using DISTINCT, BETWEEN, IN, LIKE, IS NULL, ORDER BY, GROUP BY, HAVING. |
| 26 | Queries for Aggregate functions- SUM(), AVG(), MIN(), MAX(), COUNT(). |
| 27 | Write a program to connect Python with MySQL using database connectivity and perform the following operations on data in database: Fetch, Update and delete the data. |

ART INTEGRATED ACTIVITY

Make a PowerPoint presentation on the following topics:

| GROUP | GROUP MEMBERS | TOPIC |
|--------------|---------------------------------|---------------------------------------|
| Group-I | Ajaypal, Aanchal, Ankit & Arman | Computer Network and its Types. |
| Group-II | Aryan, Avikash, Ayush & Mudit | Mobile Telecommunication Technologies |
| Group-III | Nirmal, Samanwai & Shubrat | Wired and Wireless Transmission Media |
| Group-IV | Manjila, Arpita & Vighyat | Network Topologies and its Types. |

Note: Each group member has to prepare his/her own PowerPoint presentation.

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**PHYSICAL EDUCATION (048)**  
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Revise and complete the notes of the following chapters:

1. Sports and Nutrition
2. Yoga and Lifestyle
3. Planning in Sports.

Note: Frame at least 10 MCQ'S from each above-mentioned chapters and write them in your notebook.

PRACTICAL WORK

Make a Record File that shall include:

1. Labelled Diagram of Athletic track with specifications, history, and types of events, Rules, Terminologies and skills used in athletics.
2. Physical fitness test administration.
3. Labelled Diagram of Field and Equipment, History, Rules, Terminologies and Skills of any Game of your Choice out of the list given below:
 - a) Volleyball
 - b) Basketball
 - c) Football
 - d) Handball
 - e) Hockey
 - f) Kho Kho
 - g) Kabaddi
 - h) Cricket
 - i) Bocce
4. Procedure for Asanas, Benefits & Contraindication for any five Asanas for each Lifestyle disease studied in the chapter "Yoga and lifestyle".
5. Procedure for administering Senior Citizen Fitness Test for 5 elderly family members.


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**NCC (076)**  
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Revise all the chapters done so far and complete your notes.

1. National Integration
2. Drill
3. Weapon Training
4. Personality Development
5. Armed Forces
6. Map – Reading

Do the following in your NCC notebook:

1. Cut and paste or draw all the ten Standard Obstacle Courses in your NCC notebook, explain each of them. [Unit -8 Common Subject - Adventure and Obstacle Training (same as you did in class 11)]
2. Write types of Pollution, Effect of different types of Pollution, Measures to control the different types of Pollution, in your NCC notebook. (From unit-9)
3. Explain waste management and types of Waste. (From unit-9)

ART INTEGRATED ACTIVITY

Make a pdf of the following chapters as per your roll numbers.

- a) Weapon Training (1-2)
- b) Drill (3-4)
- c) Map Reading (5,6,7,8)
- d) Personality Development (9,10,11)

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ACCOUNTANCY (055)  
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Revise all the chapters done so far and complete your notes.

- 1. Do 10 numerical (from the exercise) of each of the following chapters, in your note book.**
 1. Issue and forfeiture of shares.
 2. Issue of Debentures and Redemption of Debentures.
 3. Financial statements of company
 4. Tools for Financial analysis.
 5. Ratio analysis.

- 2. Every student has to compulsorily undertake project on the following topics:**
 1. Ratio analysis
 2. Cash flow statement.

Note:

- ❖ *The project must be made on the assignments sheets.*
- ❖ *It must not be less than 20 pages.*
- ❖ *Use of pictures is mandatory.*

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**BUSINESS STUDIES (054)**  
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Revise chapters 1 to 5 and complete your notes.

- 1. Do at least 10 case studies each of chapter 1 to 5 in your notebooks.

PROJECT WORK

Make a project report on any one of the following topics:

- Principles of Management
Or
Marketing Management
Or
Stock Exchange

Note:

- ❖ *The project to be made on assignment sheets.*
- ❖ *Use of pictures is mandatory.*
- ❖ *It must not be less than 20 to 25pages.*

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**ECONOMICS (030)**

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Revise the following units for UT-1 and complete your notebook.

1. Aggregates related to national income.
2. Money and Banking.

PROJECT WORK

Every student has to compulsorily undertake one project work. Following topics for project work are allotted to you according to your roll nos.

XII-C

| S.NO. | TOPICS | ROLL NO |
|--------------|--|----------------|
| 1 | Organic Farming – Back to the Nature | 1,14 |
| 2 | Sustainable development a need of time. | 2,15 |
| 3 | Rural Development a mission of Government in India. | 3,16 |
| 4 | Infrastructure an engine of economic growth. | 4,17 |
| 5 | Bumper Production- Boon or Bane for the farmer | 5,18 |
| 6 | COVID-19 and its impact on Indian economy | 6,19 |
| 7 | Contemporary Employment situation in India | 7,20 |
| 8 | Made In India Programme | 8,21 |
| 9. | Role of Agriculture in Indian Economy | 9,22 |
| 10 | Disinvestment policy of the government | 10,23 |
| 11 | Food Supply Channel in India | 11,24 |
| 12 | Exchange Rate determination – Methods and Techniques | 12,25 |
| 13 | Alternate fuel – types and importance | 13,26 |

XII-D

| Sr.No | TOPICS | ROLL NO |
|--------------|--|----------------|
| 1 | Health Expenditure (of any state) | 2,17,33 |
| 2 | Rain Water Harvesting – a solution to water crises | 4,20 |
| 3 | Bumper Production- Boon or Bane for the farmer | 7,21 |
| 4 | Digital India- Step towards the future | 9,22 |
| 5 | Micro and Small Scale Industries | 10,23 |
| 6 | Livestock – Backbone of Rural India | 11,24 |
| 7 | Human Development Index | 12,31 |
| 8 | MGNRAGA – Cost Ratio Benefits | 14,32 |

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**POLITICAL SCIENCE (028)**

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Revise the following units for UT-1 and complete your notebook.

1. Cold war era.
2. End of bipolarity.
3. New centers of power.
4. South Asia and the contemporary world.

PROJECT WORK

Every student has to compulsorily undertake one project work. Following Topics for project work are allotted to you according to your roll nos:

| TOPICS | ROLL NO |
|--|----------------|
| India's Relations with its neighbor | 01-05 |
| India's Relations with China | 06-10 |
| United Nations in the 21 st Century | 11-15 |
| Partition of India | 16-20 |
| Indira Gandhi and the National Emergency | 21-25 |
| Cold War and Nonaligned Movement | 25-30 |
| India -Pakistan Relations | 31-33 |

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**GEOGRAPHY (029)**

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Revise the following chapters:

BOOK 1 (Fundamentals of Human Geography)

1. Human Geography Nature and Scope
2. The World Population Distribution, Density and Growth
3. Population Composition
4. Human Development

Book 2 (India People and Economy)

1. Population : Distribution, Density, Growth and Composition
2. Migration : Types, Causes and Consequences
3. Human Development

MAP WORK

Do practice map work of the chapters (both India and World)

1. State with highest level of urbanization and lowest level of urbanization
2. One state with highest level of HDI & One lowest level of HDI
3. State with higher level of population density & one state with lowest level of population density (2011) and largest country of each continent

PRACTICAL WORK

Do first two chapters of practical work.

1. Data – its source and compilation
2. Data processing

ART ACTIVITY

- ❖ Make a PPT of 10-15 slides on Human Geography.
- ❖ Make a brochure on World population Distribution, Density & Growth
- ❖ Make a poster on Migration.

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**HISTORY (027)**

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Revise the following chapters:

1. Indus valley civilization
2. Mahatma Gandhi and the Nationalist Movement
3. Understanding Partition
4. Framing the Constitution

Frame twenty five MCQ's from each of the following chapters and write it on your notebooks.

1. Indus valley civilization
2. Mahatma Gandhi and the Nationalist Movement
3. Understanding Partition
4. Framing the Constitution

MAP WORK

On an outline map of India locate the following:

a) Mature Harappan sites:

Harappa, Banawali, Kalibangan, Balakot, Rakhigarhi, Dholavira, Nageshwar, Lothal, Mohenjodaro, Chanhudaro, KotDiji.

b) Important centres of the National Movement:

Champaran, Kheda, Ahmedabad, Banaras, Amritsar, Chauri-Chaura, Lahore, Bardoli, Dandi, Bombay (Quit India Resolution), Karachi.

c) Main centres of the Revolt of 1857:

Delhi, Meerut, Jhansi, Lucknow, Kanpur, Azamgarh, Calcutta, Banaras, Gwalior, Jabalpur, Agra, Avadh.

PROJECT WORK

| GROUP | ROLL NOS | TOPICS FOR PROJECT |
|--------------|-----------------|--|
| 1 | 1 to 8 | “Mahatma Gandhi” – A legendary Soul |
| 2 | 9 to 16 | To reconstruct the History of Vijayanagar through the Archaeology of Hampi |
| 3 | 17 to 24 | Help, Humanity and Sacrifices during Partition |
| 4 | 25 to 32 | Buddha’s Path to Enlightenment |

*******STAY HOME STAY SAFE*******
