

NEO CONVENT SR. SEC. SCHOOL

SUMMER HOLIDAYS HOMEWORK

CLASS XII

ENGLISH

Read the Novel and do the assignments put on the school website.

MATHS (NCERT)

Do all NCERT examples and questions of below mentioned chapters:

Chap 1 (Sets) and Chap 3 (Trigonometry).

[Do in a separate register]

ECONOMICS-XII

1)REVISE UNIT 1 AND UNIT 2 WITH CBSE BOARD QUESTION PAPERS AND NCERT

2)MAKE A PROJECT AS PER THE GUIDELINES GIVEN IN THE CLASS

BUSINESS STUDIES-XII

1)REVISE CHAPTER 1,2,3,4 WITH CBSE BOARD QUESTION PAPERS AND NCERT

2)MAKE A PROJECT AS PER THE GUIDELINES GIVEN IN THE CLASS

ACCOUNTANCY XII

- Revise NPO and Part B – Analysis of Financial Statements thoroughly.
- Attempt Illustrations from D.K.Goyal especially of Ratio Analysis and Cash Flow Statement.
- Complete the given Project as per guidelines.

CHEMISTRY-XII

Name: _____

Class/Sec: _____

Subject : _____

Date : _____

Teacher's Sign : _____

Parent's Sign : _____

1. Practice NCERT questions of Ch-1 , 2, 3, 4 and 5
2. Prepare an investigatory project file
3. Solve the assignment which will be uploaded on portal on 20.05.18

BIOLOGY - XII-A

1. DO ALL NCERT QUESTIONS OF UNIT VI AND UNIT VII.
2. DRAW DIAGRAMS OF ALL THE CHAPTERS OF NCERT TEXTBOOK AS PER THE SCHEDULE DISCUSSED IN THE CLASS.
3. MAKE A PROJECT ON THE TOPIC DISCUSSED IN THE CLASS.
4. MAKE SHORT NOTES OF ALL CHAPTERS OF NCERT CLASS 11.

Summer Assignment # 1 (PHYSICS)

Class- XII

ELECTRIC CHARGES AND FIELDS:

1. The branch of physics which deals with electrical charges at rest, is called -----.
2. The word **electric** comes from Greek word for -----meaning **electron**.
3. -----charges -----and -----charges -----each other.
4. Franklin suggested that the charge on glass rod is to be called -----and that on the rubber rod is to be called -----.
5. A body is charged by friction, it can be used to charge other conducting bodies by ----- and -----.
- 6.----- is touching the charged body with an uncharged body and -----is bringing the charged body close to an uncharged conductor and earthing it.
7. The total charge of the system is----- . It is neither created nor----- . It is only transferred from one body of the system to the other.
8. The transfer of charges takes place due to increase in the thermal energy of the system when the glass rod is rubbed; the less tightly bound -----from the glass rod are transferred to silk.

9. The glass rod becomes ----- charged and silk, which now has excess -----, becomes ----- charged.

10. Charge always occurs as some integral multiple of a fundamental unit of charge, which is taken as the charge on an electron. This means that if q is the charge on an object, it can be written as $q = ne$, where n is an integer and e is charge on an electron. Then, charge is -----.

11. The electrical force between two static point charges q_1 and q_2 placed some distance apart is ----- proportional to their product ;
----- proportional to the square of the distance r between them;
----- along the line joining the two charged particles ; and
----- for same kind of charges and ----- for opposite charges.

12. If the same system of charges is kept in a material medium, the ----- of Coulomb force will be different from that in -----.

13. If two equal charges separated by one metre experience a force of ----- N, each charge has a magnitude of ----- coulomb.

14. Coulomb's law is also an ----- square law like Newton's law of Gravitation.

15. The Coulomb's law holds good for ----- charges only and Coulomb's force acts at a -----, unlike mechanical -----.

16. The magnitude of force between two charges, each of one coulomb, placed at a distance of one metre from one another is ----- N.

17. The ratio of forces between two point charges q_1 and q_2 separated by a distance r , when kept in free space (vacuum) and material medium, is equal to ----- where ----- is known as relative permittivity or **dielectric** ----- . Its value is always ----- than one.

18. The Coulomb's law obeys the principle of action and reaction between two charges q_1 and q_2 . Therefore, $F_{12} =$ -----.

19. If there are more than two charges, i.e., there are several charges q_1, q_2, q_3, q_4 etc. The resultant of all these forces, i.e., the total force F experienced by q_1 is their vector sum:
 $F = F_{12} + \dots + F_{14} + \dots$. This is known as principle of -----.

20. The electric field E at a point is defined as the electric force F experienced by a positive test charge ----- placed at that point divided by the magnitude of the test charge. Mathematically, we write $E =$ ----- . This is analogous to the definition of acceleration due to gravity, $g =$ experienced by mass m_0 in the gravitational field F .

21. The electric field E is a vector quantity and has the ----- direction as the electric force. The electric field is due to an ----- charge and not due to the test charge.

22. The test charge ----- should be so small in magnitude that it does not disturb the field due to external charge. In practice, however, even the ----- test charge will disturb the external field.

23. If charge is positive, the field E will be directed away from it. If charge is negative, the field E will be directed towards it.

24. By the principle of superposition, if there are a number of charges, $q_1, q_2, q_3 \dots$, then the total field at point due to all charges is the -----sum of all fields. Thus, $\mathbf{E} = \mathbf{E}_1 + \dots + \mathbf{E}_3 + \dots$
25. The force on a charge q in an electric field \mathbf{E} is $\mathbf{F} = \dots$.
26. The product of the magnitude of charge and separation between the charges is called -----**moment**, p given by $p = \dots$. Its SI unit is-----.
27. The dipole moment is a -----quantity and its direction is from -----charge to -----charge along the line joining the two charges (axis of the dipole).
28. The electric field of a dipole at a point which lies on the axis of the dipole, is known as ----**on** ----- or -----**position**.
29. Electric field due to a dipole at a point on the perpendicular bisector is known as -----on position or -----position.
30. The magnitude of electric field in end-on-position is -----the field in the broad-on position.
31. The direction of the field in the end-on position is -----the direction of dipole moment, whereas in the broad-on position, they are -----directed.
32. An electric dipole when placed in a uniform electric field then two equal, unlike and parallel forces form a couple and tend to rotate the dipole in clockwise direction.
33. This couple tends to align the dipole in the direction of the external electric field \mathbf{E} . The magnitude of torque is ----- = Force \times -----of the couple.
34. Torque = $pE \sin \theta$ which may be written in vector form as ----- . when $\theta = 0$, the torque is zero, and $\theta = 90^\circ$, the torque on the dipole is maximum, equal to ----- . So, it may be concluded that the electric field tends to rotate the dipole and align it along -----direction.
35. A -----at any point on electric field line gives the direction of electric field at that point and -----field lines never cross each other.
36. The electric flux ----- is defined as the -----product of -----and E given by-----=----- .
37. Gauss's law states, the net -----flux through a closed gaussian surface is equal to the total charge -----inside the surface divided by----- . Gauss' law is a useful tool for determining the----- field.
38. The total charge enclosed in the cylinder is $q = \dots$. The area of the curved surface of the cylinder is -----.
39. For a point external to the spherical shell, the entire -----on the shell can be treated as though located at its----- . The electric field -----with distance.
40. The electric field at an internal point of the shell is -----.
41. The electric field due to a plane sheet of charge is -----of the distance from the sheet.
42. Electric charge is produced when glass rod is rubbed with -----or rubber is rubbed with-----.

43. The electric field due to a dipole in end-on position and broad-on position is respectively given by -----and -----.

44. Electric field lines (line of force) are only a pictorial way of depicting-----.

45. The electric field due to a line charge is given by -----.

ELCTROSTAIC POTENTIAL AND CAPACITANCES:

46. The -----at any point in an electric field is equal to the work done against the electric force in moving a unit positive charge from outside the electric field to that point. Electric potential is a -----quantity.

47. The potential at a point is taken positive when work is done -----the field by a positive charge but negative when work is done -----the electric field in moving the unit positive charge from infinity to the point in the field.

48. $W_{AB} = q_0(V_B - V_A)$ is the amount of work done by the external force if a test charge ----is moved from point A to point B along any path by an external force.

49. Potential difference between points A and B will be $V_{AB} = V_B - V_A =$ -----.

50. The work done in moving a test charge from one point to another in an electric field is ----- of the path followed.

51. A potential difference is said to exist between two points in an electric field, if work is done against the electric force in -----from one point to the other..

52. The SI unit of potential and potential difference is-----.

53. The potential at all points will be same, such a surface is referred to as-----The electric field is always -----to an equipotential surface. No work is done in moving a charge from one point to another on the equipotential surface.

54. The electric field is equal to negative rate of change of potential with distance called ----- at that point in the direction of field.

55. This property of a conductor is used in----- a phenomenon of protecting a certain region of space from external electric fields.

56. Two conductors having equal but opposite charges +Q and - Q on them. There is a potential difference V between them. Such a system of conductors is called a -----.

57. The -----is defined as the ratio between the charge on either of the conductors and the potential difference between them. It is a measure of the capability of a ----- to store charge. In SI system of units, capacitance is measured in -----.

58. Capacitance of a dielectric filled parallel plate capacitor becomes ----times the capacitance with air or vacuum as dielectric.

59. Equivalent capacitance of a number of capacitors joined in parallel is equal to the -----of the individual capacitances.

60. The reciprocal of equivalent capacitance of any number of capacitors connected in series is equal to the sum of the -----of individual capacitances.

Numericals:

61. The capacitance of a parallel plate air capacitor is $22.0 \mu\text{F}$. The separation between the plates is d . A dielectric slab of thickness $d/2$ is put inbetween the plates. Calculate the effective capacitance, if the dielectric constant $K = 5$.

62. Four point charges $q_A = 2 \mu\text{C}$, $q_B = -5 \mu\text{C}$, $q_C = 2 \mu\text{C}$, and $q_D = -5 \mu\text{C}$ are located at the corners of a square ABCD of side 10 cm. What is the force on a charge of $1 \mu\text{C}$ placed at the centre of the square?

63. Two point charges $q_A = 3 \mu\text{C}$ and $q_B = -3 \mu\text{C}$ are located 20 cm apart in vacuum. What is the electric field at the midpoint O of the line AB joining the two charges?

64. A system has two charges $q_A = 2.5 \times 10^{-7} \text{ C}$ and $q_B = -2.5 \times 10^{-7} \text{ C}$ located at points A: (0, 0, -15 cm) and B: (0, 0, +15 cm), respectively. What are the total charge and electric dipole moment of the system?

65. A regular hexagon of side 10 cm has a charge $5 \mu\text{C}$ at each of its vertices. Calculate the potential at the centre of the hexagon.

66. A spherical conductor of radius 12 cm has a charge of $1.6 \times 10^{-7} \text{ C}$ distributed uniformly on its surface. What is the electric field?

(a) Inside the sphere.

(b) Just outside the sphere.

(c) At a point 18 cm from the centre of the sphere?

68. Three capacitors each of capacitance 9 pF are connected in series.

(a) What is the total capacitance of the combination?

(b) What is the potential difference across each capacitor if the combination is connected to a 120 V supply?

69. A charge of 8 mC is located at the origin. Calculate the work done in taking a small charge of $-2 \times 10^{-9} \text{ C}$ from a point P (0, 0, 3 cm) to a point Q (0, 4 cm, 0), via a point R (0, 6 cm, 9 cm).

70. A charge $+q_1 = 12 \text{ C}$ is placed at a distance of 4.0 m from another charge $+q_2 = 6 \text{ C}$, where should a negative charge q_3 be placed on the line joining q_1 and q_2 so that the charge q_3 does not experience any force?

COMPUTER SCIENCE - XII-A

1. Chapter – XI Revision Tour, Class & Object, Object Oriented Features, Function overloading and Inheritance Question from book

2. Prepare notes of chapter networking.

3. Q1,2,3(1D and 2D array function) from board paper 2008-2018

Do all HW in separate copy.

INFORMATICS PRACTICES - XII- C

1. Prepare notes of chapter 1 and 2.

2. Do Q from board paper 2008-2018 of Ch – 1, 2 and 3.

Do all HW in separate copy.

Remember:

Road has Speed Limit, Bank has Money Limit, Exam has Time Limit, Tower has Height Limit, But Thinking has No Limit...So Think Big and Achieve Big.

Wish You all Happy Holidays! God Bless all.
