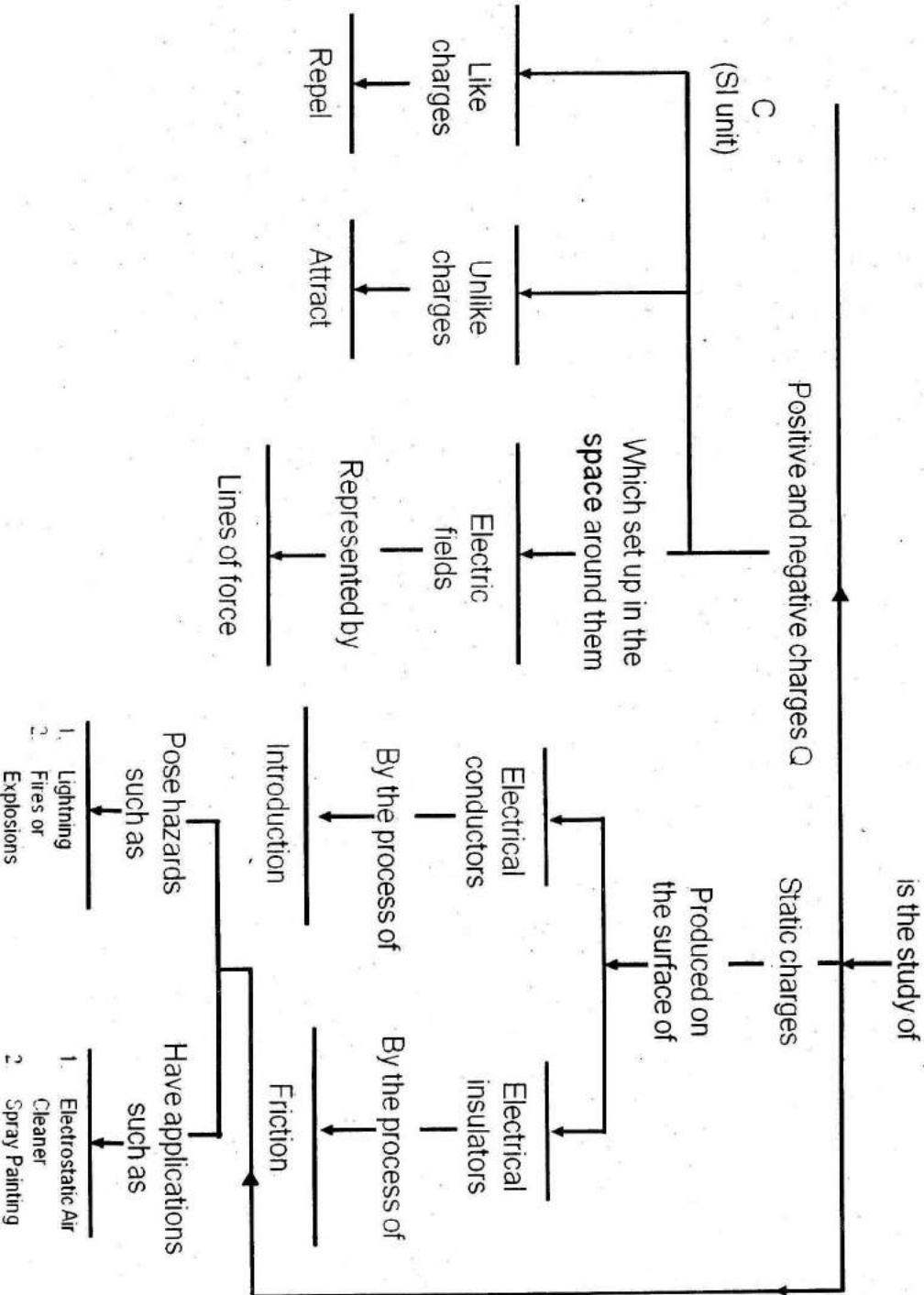


### CONCEPT MAP

### STATIC ELECTRICITY



## TOPICAL MULTIPLE CHOICE QUESTIONS

### 13.1 and 13.2 Production of Electric Charges and Electrostatic Induction

- Study of charges at rest is called \_\_\_\_\_**  
(a) Electrostatics (b) Magnetism (c) Electrochemistry (d) Electric Current
- An insulating rod is charged positively by rubbing. This is due to**  
(a) Deficiency of protons (b) Excess of protons  
(c) Deficiency of electrons (d) Excess of electrons
- When an insulating rod is charged negatively, this is due to**  
(a) Deficiency of protons (b) Excess of protons  
(c) Deficiency of electrons (d) Excess of electrons
- If we run a plastic comb through hair and then bring it near shell pieces of paper. The comb \_\_\_\_\_**  
(a) Attract them (b) repel them (c) Both a and b (d) None of these
- Electric charges can be produced by rubbing a neutral body with**  
(a) Charged body (b) Another neutral body (c) Both a and b (d) None of these
- SI unit of electric charge is \_\_\_\_\_**  
(a) Coulomb (b) Ampere (c) Volt (d) Watt
- A positive charge**  
(a) Attract other positive (b) Repel other positive charge  
(c) Attract the natural charge (d) Repels a neutral charge
- An object gain excess negative charge after being rubbed against another object**  
(a) Neutral (b) Negative charged (c) positively charge (d) Object
- A body can be charged by**  
(a) Rubbing with another body (b) Conduction  
(c) Electrostatic induction (d) All of these
- Only \_\_\_\_\_ type charges exist**  
(a) One (b) Two (c) Three (d) Four
- When a glass rod is rubbed with a silk cloth, then**  
(a) Glass rod acquires negative charge while silk acquires positive charge  
(b) Glass rod acquires positive charge while silk acquires negative charge  
(c) Both glass rod and silk acquire negative charge  
(d) Both glass rod and silk acquire positive charge
- If a glass rod is rubbed with a silk cloth, it receives charge by the process of:**  
(a) Heating (b) Separation of charge  
(c) Rubbing (d) electric force
- Which one of the following statements is correct?**  
(a) Similar charges attract each other  
(b) Similar charges repel each other  
(c) Similar charges attract and repel each other  
(d) Similar charges hither attract nor repel each other
- Which one of the following statements is correct?**  
(a) Opposite charges attract each other  
(b) Opposite charges repel each other  
(c) Opposite charges attract and repel each other  
(d) Opposite charges neither attract nor repel each other

15. **Metals are good conductors of electricity, because they have**  
 (a) Large number of bounded electrons (b) Small number of bounded electrons  
 (c) Large number of free electrons (d) Small number of free electrons
16. **Free electrons are**  
 (a) Tightly bound (b) Fixed  
 (c) Loosely bound (d) strongly fixed
17. **The number of electrons in one coulomb charge is equal to**  
 (a)  $6.25 \times 10^{19}$  (b)  $1.6 \times 10^{-19}$   
 (c) Zero (d)  $6.2 \times 10^{21}$
18. **Like charges always \_\_\_\_\_ each other**  
 (a) Attract (b) Repel (c) Attract and repel (d) None of these
19. **In the presence of a charged body an insulated inductor develops positive charge at one end and negative charges at other end, this process is called the \_\_\_\_\_**  
 (a) Electrostatic induction (b) Conduction (c) Friction (d) All of these

### 13.2,13.3 and 13.4 Electrostatics, Coulomb's Law and Electric Field

20. **Electroscope is an instrument used for**  
 (a) Detecting presence of charge (b) To detect the type of charges  
 (c) To identify conductor and insulator (d) All of these
21. **Force of attraction or repulsion acts between**  
 (a) Two charged bodies (b) Neutral bodies (c) Non charged bodies (d) All of these
22. **Who established fundamental law of electric force between two stationary charged particles?**  
 (a) Planks (b) Faraday (c) Quantum (d) Coulomb
23. **According to Coulomb's law**  
 (a)  $F = K \frac{q_1 r^2}{q_2}$  (b)  $F = \frac{k r_1 r_2}{(q)^2}$  (c)  $F = \frac{k q_1 q_2}{r^2}$  (d)  $F = k \frac{q_1 q_2}{r}$
24. **K is constant of proportionality given by**  
 (a)  $K = \frac{1}{4\pi \epsilon_0}$  (b)  $K = \frac{\epsilon}{4\pi}$  (c)  $K = \frac{4\pi}{\epsilon_0}$  (d) None of these
25. **SI unit of K**  
 (a)  $\text{Nm}^2\text{C}$  (b)  $\text{Nm}^2\text{C}^{-2}$  (c)  $\text{N}^2\text{m}^2\text{C}^{-1}$  (d)
26. **The value of K**  
 (a)  $8.85 \times 10^9 \text{ Nm}^2\text{C}^{-2}$  (b)  $9 \times 10^9 \text{ Nm}^2\text{C}^{-2}$  (c)  $6.67 \times 10^9 \text{ Nm}^2\text{C}^{-2}$  (d) none of these
27. **A region around the charge in which it exerts electrostatic force on another charge is called**  
 (a) Gravitational field (b) Magnetic field (c) Electric field (d) All of these
28. **SI unit of electric intensity is**  
 (a)  $\text{Nm}^{-1}$  (b)  $\text{NC}^{-1}$  (c)  $\text{Nm}^{-2}$  (d)  $\text{Nm}$
29. **The spacing between the field lines shows the**  
 (a) Strength of electric field (b) Direction of electric field  
 (c) Both a and b (d) None of these
30. **Electroscope can be charge by the process**  
 (a) Magnetism (b) Internal reflection  
 (c) Electrostatic induction (d) Electromagnetic tension

31. **The value of Coulomb's constant K depends upon**  
 (a) The system of units used  
 (b) Medium between the charges  
 (c) Quantity of the charges  
 (d) The system of units and the medium between the charges
32. **If the distance between the two charged bodies is halved, the force between them becomes**  
 (a) Doubled  
 (b) Half  
 (c) Four times  
 (d) One half
33. **If the distance between two charges is doubled, the electric force between them will become**  
 (a) Four times  
 (b) Twice  
 (c) Half  
 (d) One fourth
34. **Electric charge of  $100\mu\text{C}$  is 13 m apart from another charge  $16.9\mu\text{C}$ . The force between them in Newton is**  
 (a)  $9 \times 10^7$   
 (b) 0.09  
 (c) 90  
 (d)  $9 \times 10^5$
35. **The electric force of repulsion between two electrons at a distance of 1 m is**  
 (a) 1.8 N  
 (b)  $1.5 \times 10^{-9}\text{N}$   
 (c)  $2.30 \times 10^{-27}\text{N}$   
 (d)  $2.30 \times 10^{-27}\text{N}$
36. **The magnitude of the charge on the electron is**  
 (a)  $1.2 \times 10^{-19}\text{C}$   
 (b)  $1.6 \times 10^{-19}\text{C}$   
 (c)  $2.6 \times 10^{-19}\text{C}$   
 (d)  $1.81 \times 10^{-19}\text{C}$
37. **The space around the charge within which other charges are influenced by it is called**  
 (a) electric intensity  
 (b) Electric field  
 (c) Electric flux  
 (d) Electric potential
38. **Force experienced by a unit positive charge placed at a point in the electric field is known as**  
 (a) Electric field intensity  
 (b) Magnetic field intensity  
 (c) Electric potential  
 (d) Capacity
39. **The force per unit charge is known as**  
 (a) Electric flux  
 (b) Electric intensity  
 (c) Electric potential  
 (d) Electric volt
40. **SI unit of electric field intensity is**  
 (a) Coulomb  
 (b) Volt  
 (c) Newton/coulomb  
 (d) Ampere
41. **Electric field intensity is a vector quantity and its direction is**  
 (a) Perpendicular to the direction of field  
 (b) Opposite to the direction of force  
 (c) Along the direction of force  
 (d) At a certain angle
42. **The electric intensity at infinite distance from the point charge is**  
 (a) Zero  
 (b) Infinite  
 (c)  $1 \text{ Volt} - \text{m}^{-1}$   
 (d) Positive

















