Chapter 15

MULTIPLE CHOICE QUESTIONS

1. a	2. c	3. c	4. c
5. d	6. a	7. a	8. c
9. d	10. a		

VERY SHORT ANSWER QUESTIONS

11. (a) True (b) True (c) True (d) False (e) True

12. No

13. The two will attract each other.

14. No divergence of strips will take place.

15. They will repel each other.

SHORT ANSWER QUESTIONS

16. No, it will not be effective. Since lightning conductor was not connected properly to the earth, therefore, the charge will not pass through to the earth.

17. No, it will not occur. The charge separation cannot take place in conductors. Therefore charges will not accumulate on clouds and so lightning cannot take place.

18. A is the lightning conductor and B is the copper plate.

19. No. There is no need to install lightning conductor in the building.

20. Electric charge gets accumulated on the screen. On touching the screen the charge discharges through our body. Thus, we get a slight shock.

21. Lightning conductor does not allow the charge to accumulate on a building as it conducts the charge to the earth, protecting building from being struck by lightning.

22. If a positively charged object is brought in contact with the clip of an electroscope, the negative charge given earlier will be neutralised and the strips will collapse.

23. The charge that was in the electroscope strips will get discharged through our hand. The strips will come back to the original state.

LONG ANSWER QUESTIONS

24. During the development of a thunderstorm, the air currents move upwards while the water droplets move downwards. These vigorous movements of air currents cause separation of charges. The positive charges collect near the upper edges of the clouds and the negative charges accumulate near the lower edges. There is accumulation of positive charges near the ground also. When the magnitude of the accumulated charges become large, the air cannot resist their flow. As a result negative and positive charges meet producing a streak of bright light and sound, called lightning.

25. (i) Take shelter under a table and stay there till the shaking stops.
(ii) Stay away from tall and heavy objects that may fall on you.
(iii) If you are in bed, do not get up. Protect your head with a pillow.
(If a child gives any other reasonable precautions, it should be accepted)

26. Lightning is an electrical discharge. During lightning atmospheric electric charge may discharge through landline telephone wires and may become dangerous. Therefore it is safer to use a wireless telephone instead of a landline telephone during lightning.

27. (i) Stay away from poles or other metallic objects.
(ii) Stay away from tall trees.
(iii) Stay away from open vehicles like motorbikes, tractors, construction machinery etc.
(If a child gives any other reasonable precautions, it should be accepted)

28. The aluminium strips will not show any repulsion. The charged body will not transfer any charge to the ebonite rod as ebonite rod is an insulator. As a result there will be no charge on the aluminium strips and no repulsion will occur.