**Chapter 11**

**Electric Charges at Rest**

1. I took a dry plastic ruler rubbed it against my hair. After rubbing when I bought it near bits of paper I observed that bits of paper get attracted towards the plastic ruler. Suggest why do bits of paper get attracted to the ruler?
2. Which property of Amber led to discovery of electricity?
3. The student should pick up any four items used by them and list them .Then rub these materials against dry hairs and note whether they get charged on rubbing or not.
4. Fill in the blanks
5. An object is said to be\_\_\_\_\_\_\_\_\_\_\_\_\_, if it has acquired the property of attracting light objects.
6. \_\_\_\_\_\_\_\_\_ materials normally do not get charged on rubbing because it allows the electric charge to flow through them with ease.
7. \_\_\_\_\_\_\_\_ is a process when a charged object is in contact with earth and loses its charge to earth.
8. Charges are always \_\_\_\_\_\_\_\_\_\_ in pairs.
9. Charging of an object can be done by \_\_\_\_\_\_\_\_\_ or friction
10. \_\_\_\_\_\_\_\_\_ acts as source or sink that is responsible for charging an object by induction.
11. Both \_\_\_\_\_\_\_\_\_ and thunder occur together or simultaneously.
12. Lightning can result in the formation of \_\_\_\_\_\_\_\_\_\_\_\_\_ from oxygen.
13. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a device to protect tall buildings from lightning.
14. State whether given statements are true/false
15. An object is said not to be electrically charged when on rubbing it has the ability to attract lighter objects.
16. On observing the signs of lightning and thunder go to a safe place immediately.
17. Earthing has many practical application in our daily life
18. Charges are never produced in pairs.
19. An uncharged object can be charged by bringing it in direct contact with charged object.
20. Define the following
21. Earthing
22. Electrical Induction
23. Conductors
24. Insulators
25. Give reasons for the following
26. We always earth the metallic body of all electrical appliances and devices we use.
27. Metals do not get charged up on rubbing.
28. Plastic comb gets charged on rubbing.
29. Lightning may cause tall buildings and TV tower to get burnt out.
30. An uncharged can be charged when brought in contact of charged object.
31. Multiple choice questions
32. Whenever we bring two similarly charged body together, they will
33. Repel b) attract c) nothing will happen
34. Metals are good conductors because they
35. get charged b)allow the charge to flow through c) do not allow the charge to flow d) none
36. The method by which an uncharged object can be charged without being in contact of charged body is
37. Rubbing b) Conduction c) Induction d) none
38. \_\_\_\_\_\_\_\_\_\_\_ is an outcome of charges in nature
39. Clouds b) Rain c) lightning d) snow
40. Write down an activity to show that like charges repel and unlike charges attract.
41. Two charged up objects, if brought simultaneously near tiny pieces of paper, the combination is not able to attract, why?
42. We say charges always produced in pairs, justify.
43. What is earthing? Why do we need to carry on earthing of the various electrical appliances?
44. Write down the steps involved in charging of an object by induction.
45. Differentiate conductors from insulators on the basis of the charge they are able to acquire.
46. We can say that the earth acts as source or sink for charges, justify.
47. How can charge on a body be detected?
48. Lightning and thunder are due to production of very large amounts of charges on the clouds, explain
49. Name the three methods used for charging an object.
50. What is lightning conductor? Why is it fixed on tall buildings?
51. State the precautions person should take during lightning if he is caught outside in the open.
52. What helps the earth to maintain a balance in the total electric charges contained in it?
53. How is lightning beneficial for us?
54. If we suspend two charged rods what will happen if a) both the rods have similar charge
55. If both the rods have dissimilar charge.

**Chapter 12**

**Light**

1. Ram takes a pen and places it in front of mirror he gets an image of the pen. State what will be the size of the image. b) Will he be able to obtain the image on a screen.
2. Suppose I am wearing a watch on my left arm it appears to be right arm when I see in the plane mirror, why?
3. Explain the difference in the reflection of light when it falls on a) regular shiny surface and b) falls on irregular surface.
4. Fill in the blanks
5. The \_\_\_\_\_\_\_\_\_\_\_\_\_ is that point on the surface of mirror where the incident ray falls.
6. When the image is formed by plane mirror then the image is as far \_\_\_\_\_\_\_ the mirror as the object is in \_\_\_\_\_\_\_\_\_\_\_ of it.
7. \_\_\_\_\_\_\_\_\_\_\_ image is an image that appears to be formed through apparent intersection of the reflected rays.
8. A \_\_\_\_\_\_\_\_\_\_ mirror is special type of mirror whose surface is part of a sphere.
9. The \_\_\_\_\_\_\_\_\_\_\_ of a spherical mirror is the line joining the pole of the mirror and its centre of curvature.
10. The \_\_\_\_\_\_\_\_\_\_ is situated midway between the pole and the centre of curvature of the mirror.
11. When the object is at centre of curvature in case of concave mirror than the image is formed at \_\_\_\_\_\_\_\_\_\_\_\_.
12. \_\_\_\_\_\_\_\_\_\_\_ mirrors are used in kaleidoscope.
13. \_\_\_\_\_\_\_\_\_ is a simple device that enables us to overhead objects that are directly not in the range of our sight.
14. State whether given statements are true/false
15. Periscope a device that uses concave mirrors.
16. Ophthalmoscope is special instrument is fitted with a concave mirror having a small hole near its centre.
17. The angle of incidence is equal the angle of reflection.
18. In case of plane mirror image formed has same size as the object.
19. The ray of light coming towards the mirror is called reflected ray.
20. Define the following
21. Reflection
22. Plane reflection
23. Diffused reflection
24. Lateral inversion
25. Real image
26. Multiple choice question
27. In case of plane mirror the size of image is \_\_\_\_\_\_\_\_\_\_ the object.
28. Same as b) smaller than b) bigger than
29. When we try to see a distant object with the help of concave mirror the image is formed
30. At focus b) between P and F c) at C d) Between F and C
31. Which mirror is used in Opthalmoscope?
32. Convex mirror b)Concave mirror c) Plane mirror
33. When the plane mirror moves towards stationary object with a speed u than image will move with a speed \_\_\_\_ in same direction as that of the mirror.
34. u b) 2u c) 3u d) 4u
35. Give reasons for the following
36. The light is reflected when it falls on plane mirror.
37. In the plane mirror the image of left side appears to be on right side.
38. The opthalmoscope is fitted with concave mirror having small hole near its centre.
39. When we into large shinning stainless spoon kept nearby our face may appear bigger or smaller than its normal size.
40. Convex mirror is used as a rear view mirror in vehicles.
41. Complete the given table for concave mirror

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| --- | --- | --- |
| S.N | Position of Object | Nature and position of image |
| 1 | Beyond C |  |
| 2 | Between F and P |  |
| 3 | At C |  |
| 4 | At F |  |

1. State the 2 laws of reflection.
2. How is the image of our face formed in plane mirror similar to that formed in convex mirror?
3. How can find the focus of a concave mirror?
4. Dr aw ray diagram to show the nature and position of image formed
5. When object is placed between F and C of concave mirror
6. Object is place beyond C of convex mirror
7. Object is placed at distance of 5cm from a plane mirror
8. Differentiate between a real and virtual image.
9. Name the kind of mirror used in case of
10. Looking mirror
11. Kaleidoscope
12. Periscope
13. Rear view mirror of vehicles
14. State the uses of different mirrors in our daily life.
15. How can plane mirror help us to see full image of large object?
16. What helps us to see back of head at the hair salon?
17. How can we get multiple images using plane mirror? State the practical use of the idea of multiple images.
18. Using the plane mirror and placing a pencil in front of it draw the position of normal , incident ray and reflected ray.
19. State the laws reflection with respect of spherical mirrors.

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