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| 1. | When a ray of light after incidenting on a boundary separating two media comes back into the same media, then this phenomenon, is called reflection of light.  (Refraction / Reflection) |
| 2. | Light affects the eye to produce the sensation of vision.  (T/F) |
| 3. | Is light a electromagnetic wave?  (T/F) |
| 4. | Speed of light is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| 5. | Arrange the speed of light in ascending order with their respective medium. Vs , Vl , Vg .  (Vs > Vl >Vg / Vs < Vl < Vg / Vs < Vl > Vg ) |
| 6. | Write Three example of luminous object. |
| 7. | Write three example of non-luminous object. |
| 8. | a)\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ c)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ d)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Name the Different beam of light. |
| 9. | What is a real image? |
| 10. | What is a virtual image? |
| 11. | What do you mean by rectilinear propagation of light? |
| 12 | A point source of light will always produce:  ( a single ray / a parallel beam / a divergent beam) |
| 13. | Write two example of each medium. Transparent, Translucent and opaque. |
| 14. | Formation of shadows and eclipses are the direct consequences of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of light.  (rectilinear propagation / electromagnetic waves) |
| 15. | Rectilinear propagation of light means light travels in a straight line path.(T/ F) |
| 16. | A point source of light will always produce:  (a single ray / a parallel beam / a divergent beam) |
| 17. | What is the focal length of a plane mirror?  (infinite / on the mirror / at 1cm) |
| 18. | A concave mirror is placed in water. Will there be any change in focal length? Give reason. |
| 19. | Is light a E.M. wave? |
| 20. | What is the radius of a plane mirror?  (infinite / on the mirror / at 1cm) |
| 21. | What is the angle of reflection if a ray falls normally on a plane mirror?  (900 / 00 / not define) |
| 22. | Relate the focal length f and radius of curvature R.  [ (f=R/2) , / (f=2R), / (R=f/2) ] |
| 23. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of light is the process which enables us to see different objects around us.  (Refraction / diffraction / reflection ) |
| 24. | The return of light into the different medium after striking a surface is called reflection. check out the statement, is true or false. If false rewrite it. |
| 25. | Write the Laws of reflection. |
| 26. | Due to irregular reflection we can see an object through all direction.(T / F) |
| 27. | If object is at 2m from the mirror then image is at \_\_\_\_\_\_\_\_m.  (4 / 2 / 1 / 1.5) |
| 28. | Tick on the letters which does not show the property of lateral inversion.  (A / B / U / X / Y/ C / R / O / T / H/G / Q) |
| 29. | Write the characteristics of the image formed by a plane mirror. |
| 30. | A lighted candle S stands in front of a vertical plane mirror as shown in the diagram below.  a) show by means of a ray diagram, the position of the image of the candle S.  b) An observer at A can see the image, but an observer at B is unable to do so. Explain this. Mirror  B **⋅**  A **⋅**  S **⋅** |
| 31. | Number of images formed by the two parallel mirrors is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  ( one / two / three / infinite) |
| 32. | Draw the ray diagram of Simple Periscope. And at what angle mirror is placed with the frame.  (900 / 450 / 500) |
| 33. | When an object is placed between two plane mirrors inclined at an angle of 750, the number of images formed is  (2 / 3/ 4/ 5) |
| 34. | Write down the formula for find out the no. of images formed by the two mirrors. |
| 35. | Define a focus. Also draw a ray diagram for it. |
| 36. | It is the straight line joining the pole of the mirror to its centre of curvature.  (Aperture / principal axis / Pole) |
| 37. | Differentiate between concave and convex mirror. |
| 38. | If a ray passing through the centre of curvature is reflected back along its own path. Show through the ray diagram. (T / F) |
| 39. | If a Ray passing through the focus gets reflected and become parallel to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| 40. | Where will the image be if the object is at focus of the concave mirror? Draw the diagram. |
| 41. | Where will the image be if the object is at centre of curvature of the concave mirror? Also give its characteristics of the image. |
| 42. | Distinction between a plane mirror, concave mirror and convex mirror without touch. |
| 43. | Which mirror is used for a rear view mirror in vehicles? |
| 44. | Write the use of concave mirror. |
| 45. | Where we place the object in concave mirror, so that the image is magnified and upright. And also draw the diagram. Image is virtual or Real. |
| 46. | The radius of curvature of a spherical mirror is 20cm. What is its focal length? |
| 47. | No matter how far you stand from a mirror and its principal focus appears erect. The mirror is likely to be  (plane / concave / convex) |
| 48. | When the object moves with speed *u* towards (or away) from the plane mirror then image also moves toward (or away) with speed *u*. But relative speed of image *w.r.t.* object is 2*u. (True / False)* |
| 49. | A person is in a room whose ceiling and two adjacent walls are mirrors. How many images are formed:  (2 / 3/ 4/ 5) |
| 50. | A plane mirror and a person are moving towards each other with same velocity *v*. Then the velocity of the image is :  (v / 2v / 3v) |

(4) **Position, size and nature of image formed by the spherical mirror**

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| **Mirror** | **Location of the object** | **Location of the image** | **Magnification,**  **Size of the image** | **Nature** | |
| **Real**  **virtual** | **Erect**  **inverted** |
| **(a) Concave** | At infinity  *i.e.* *u* = ∞ | At focus *i.e. v* = *f* | *m* << 1, diminished | Real | inverted |
|  | Away from centre of curvature (*u* > 2*f*) | Between *f* and 2*f* *i.e.*  *f* < *v* < 2*f* | *m* < 1, diminished | Real | inverted |
| *P*  *F*  *C*  ∞ | At centre of curvature *u* = 2*f* | At centre of curvature *i.e.* *v* = 2*f* | *m* = 1, same size as that of the object | Real | inverted |
|  | Between centre of curvature and focus :  *F* < *u* < 2*f* | Away from the centre of curvature  *v* > 2*f* | *m* > 1, magnified | Real | inverted |
|  | At focus *i.e.* *u* = *f* | At infinity *i.e.* *v* = ∞ | *m* = ∞, magnified | Real | inverted |
|  | Between pole and focus *u* < *f* | *v* > *u* | *m* > 1 magnified | Virtual | erect |
| **(b) Convex**  *C*  *F*  *P*  ∞ | At infinity *i.e.* *u* = ∞ | At focus *i.e.*, *v* = *f* | *m* < 1, diminished | Virtual | erect |
|  | Anywhere between infinity and pole | Between pole and focus | *m* < 1, diminished | Virtual | erect |

*Note* : ❑ In case of convex mirrors, as the object moves away from the mirror, the image becomes smaller and moves closer to the focus.

❑ Images formed by mirrors do not show chromatic aberration.

* For convex mirror maximum image distance is it’s focal length.
* In concave mirror, minimum distance between a real object and it's real image is zero.   
  (*i.e.* when *u* = *v* = 2*f*)

*Note : We observe number of images in a thick plane mirror, out of them only second is brightest.*

Incident light (100%)

10%

**80%**

9%

0.9%

Brightest image