Mohamud Harbi Primary and secondary school		**Grade: Form four**
Subject: Physics		**Date: 20/2/2019**
Chapter (6): Refraction of light		**Teacher: Mohamed Hassan Abdullahi (Daacad)**

1) Define refraction of light ?

- Refraction of light is when the ray of light is travelling from one optical medium to another optical medium.

2) Define incident ray ?

- Incident ray is a ray of light travelling towards another optical medium.

3) Define point of incidence ?

- Point of incidence is the point where an incident ray strikes another optical medium.

4) Define normal ?

- Normal is a perpendicular drawn at the point of incidence.

5) Define angle of incidence ?

- Angle of incidence is the angle made by the incident ray with the normal at the point of incidence.

6) Define refracted ray ?

- Refracted ray is a ray of light which deviates from its path on entering another optical medium.

7) Define angle of refraction ?

- Angle of refraction is the angle that the refracted ray makes with the normal.

8) Define emergent ray ?

- ❖ Emergent ray is a ray of light which emerges out from another optical medium, into the original optical medium.

9) Define angle of emergence ?

- ❖ Angle of emergence is the angle that the emergent ray makes with the normal.

10) Define lateral displacement ?

- ❖ Lateral displacement is the perpendicular shift in the path of incident ray, while emerging out of a rectangular optical slab.

11) State laws of refraction (Snell's law) ?

- ❖ Laws of Refraction (Snell's law) :
  - ✓ The incident ray, the refracted ray and the normal to the surface of the separation of two media at the point of incidence, all lie in the same plane.
  - ✓ The ratio of the sine of angle of incidence to the sine of angle of refraction is a constant, for the light of given colour, for the given pair of media.

12) Define refractive index ?

- ❖ Refractive index is the ratio between the sine of angle of incidence in one optical medium to the sine of angle of refraction in another optical medium.

13) Define optical density ?

- ❖ The ability of a medium to refract light is expressed in terms of optical density.

14) How to Distinguish between a Rare and Dense Medium?

- ❖ The media with lesser refractive index is rare and the medium with more refractive index is dense.

15) Define lens ?

- ❖ A lens is defined as a portion of a transparent optical material, having one or two spherical surfaces.

16) List types of lens ?

- ❖ Lenses are divided into two broad classes:
  - ✓ Converging lens or convex lens.
  - ✓ Diverging lens or concave lens.

17) Define converging lens or convex lens ?

- ❖ A piece of transparent optical material, having one or two spherical surfaces, such that it is thicker in the middle and tapering (thinner) at the edges.

18) Convex lens are classified into three what are they ?

- ❖ They are:
  - ✓ Double convex lens.
  - ✓ Plano-convex lens.
  - ✓ Concavo-convex lens.

19) What are the characteristics of convex lens ?

- ❖ Convex lens are thicker in the middle and tapering at their edges.

20) Define diverging or concave lens ?

- ❖ A piece of transparent optical material, having one or two spherical surfaces, such that it is tapering (thinner) in the middle and thicker at its edges.

21) Concave lens are classified into three what are they ?

- ❖ They are:
  - ✓ Double concave lens.
  - ✓ Plano-concave lens
  - ✓ Ponvexo-concave lens.

22) What are the characteristics of concave lens ?

- ❖ Concave lens are thicker at their edges and tapering in the middle.

23) Define power of a lens ?

- ❖ Power of a lens is a measure of degree of convergence or divergence of light rays incident on it.

24) What is the SI unit of power of a lens ?

- ❖ The SI unit of power of a lens is dioptre. It is denoted by the letter D.

25) What is the linear magnification ?

- ❖ Linear magnification is the ratio between the height of the image produced by a lens to the height of the object.

26) List common defects of the eye ?

- ❖ Common defects of the eye are:
  - ✓ Short sightedness (Myopia)
  - ✓ Long sightedness (Hypermetropia)
  - ✓ Presbyopia

27) How can be corrected short sightedness ?

- ❖ Short-sightedness can be corrected by using a concave lens.

28) How can be corrected long sightedness ?

- ❖ Long sightedness can be corrected by using convex lens.

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