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PHYSICS

REFRACTION

FREE STUDY MATERIAL FOR SSC & RAILWAY EXAMS

PHYSICS

Refraction

1. **Refraction** is the **bending of light** when it goes from one medium to another.
2. When a ray of light enters the glass prism it gets **deviated two times**.
3. When the ray of light passes through the prism it bends **towards its base.**
4. In **1665, Isaac Newton** discovered that white light consists of seven colours**.**
5. When white light is passed through glass prism then it will **split in to seven colours.**
6. The band of seven colours formed when a beam of white light is passes through a glass prism is called **spectrum of white light.**

7. The splitting of white light into seven colours on passing through a transparent medium is called **dispersion of light**.

8. While passing through the transparent medium, **red colour deviates least and violet colour is deviated maximum**

9. A **rainbow** is a meteorological phenom interesting facts about light and scattering enon that is caused by **reflection, refraction and dispersion of light in water droplets.**

10. **Stars twinkle** at night because their light is **refracted** in the atmosphere**.**

11. As the star light falls down the dense air bends it more and thus **stars appear higher than they actually are.**

12. It is due to **refraction** of light that we can see the **sun two minutes**

before sunrise and two minutes after actual sunset.

13. Throwing light in various random directions on various types of suspended particles is called **scattering of light.**

14. When light is scattered due to particles in its path, it is called **Tyndall effect.**

15. The way a beam of sunlight becomes visible when it passes through dust particles in a room is due to **Tyndall effect.**

16. **Sky** is blue is because of **scattering of light**.

17. Sun appears red at sunrise and sunset because of all the blue coloured light is **scattered out**.

18. If our Earth did not have an atmosphere, **the sky would be black like outer space.**

19. **Sound** travels through **a medium**. It **cannot travel in vacuum**.

20. **Larger the amplitude** of the sound, **louder is the sound.**

21. **Higher the frequency** of vibration, the **higher is the pitch,** and shriller is the sound.

22. Unpleasant sounds are called **noise.**

23. Sound is transmitted through gases, plasma, and liquids as **longitudinal waves.**

24. In solids sound can be transmitted as both **longitudinal waves and transverse waves.**

25. **Loudness of sound** is measured in units of **decibel(dB).**

26. The audible range of sound for human beings extends from about **20Hz to 20,000 Hz**

27. Sounds of frequencies below 20 Hz are called **infrasonic sound or infrasound.**

28. The number of vibrations per second is called **frequency.**

29. The SI unit of audio frequency is the **hertz (Hz)**.

30. **Ultrasonic** is a reference to the frequency of sound waves beyond (above) the human hearing range.

31. Ultrasound is produced by **dolphins.**

32. ultrasound is commonly used for **medical diagnosis and therapy, and also as a surgical tool.**

33. Some bats and porpoises are found to use ultrasound for navigation and to locate food in darkness. **- Echolocation**

34. **SONAR means Sound Navigation Ranging.**

35. **Supersonic** is an adjective that describes the speed of something moving faster than sound.

36. **Mach :** the ratio of the speed of a body to the speed of sound in the surrounding medium.

37. When sound waves strike a surface, they return into the same

medium. This phenomenon is called **reflection**.

38. Phenomenon of hearing back our own sound is called an **echo.**

39. The **minimum distance** between the source of sound and the reflecting body should be **17.2 metres for formation of echo.**

40. Persistence of sound after its production is stopped, is called **reverberation.**

41. In dry air at 0°C (32°F), the speed of sound is **331.2 metres per second.**

42. At 20°C (68°F), the speed of sound is **343 metres per second.**

43. Sound usually travels more slowly with **greater altitude**, due to reduced temperature.

44. Speed of sound **increases with increase in temperature**.

45. The study of sound is called **Acoustics.**

46. Optics is the **study of light.**

47. **Phonetics** is the study and classification of speech sounds.

48. **Cat acoustics**' is the study of echoes.

49. Sound travels slower through air than by water. In fact, the speed of sound via water is **4.3 times** faster than by air.

50. Sound does travel far **faster through steel** than both air and water.

51. Flies are **not able to hear any sounds at all.**

52. The fear of music is called **melophobia.**

53. **Phonophobia**, also called **Ligyrophobia** or **Sinophobia**, is a **fear** of or aversion to loud **sounds.**

54. **Heliophobia** is the fear of the sun, sunlight, or any bright light**.**

55. **Photophobia** is not a morbid fear or phobia, is a common **symptom** of visual snow.

56. Brilliance in a diamond is due to **total internal reflection, refraction and dispersion.**

57. A blue iris in an eye is due to **Willis-Tyndall scattering** in a translucent layer in the iris**.**

58. The SI unit of luminous intensity is the **candela** (cd)

59. Our eyes detect light in ROYGBIV, rainbow colour form**.**

60. Objects that produce their own light are called **Luminous objects.**

61. To an astronaut in space, the sky will appear to be **black.**

62. Golden view of sea shell is due to **diffraction.**

63. Mirage is an example **refraction and total internal reflection of light.**

64. Optical fibres are based on the phenomenon of **total internal reflection.**