PHYSICS

BOOKS - R G PUBLICATION

WAVES

Exercise

1. What is resonance?

▶ Watch Video Solution

2. What is meant by wave propagation constant?

▶ **Watch Video Solution**

3. Explain free and forced vibration.

▶ **Watch Video Solution**

4. Dudecue an expression for apparent frequency of sound,when the listener moves

towards a stationary source.

5. If the speed of sound 336m/s in air, then find the shortest length of the one end closed tube that will resonate with a fork of frequency 21oHz.

6. What is the minimum distance between a node and an antinode produced in a stationary wave?

▶ **Watch Video Solution**

7. What is resonance?

▶ **Watch Video Solution**

8. Draw a neat diagram showing the fundamental and next two harmonics of the vibration of a stretched string fixed at both ends.

▶ **Watch Video Solution**

9. Dudecue an expression for apparent frequency of sound,when the listener moves towards a stationary source.

▶ **Watch Video Solution**

10. If the speed of sound 336m/s in air, then find the shortest length of the one end closed tube that will resonate with a fork of frequency 21oHz.

▶ **Watch Video Solution**

11. State the principle of superposition of waves. Mentiona phenomenon that occurs due to superposition of two waves.

▶ **Watch Video Solution**

12. Establsih the relation between velocity and wavelength.

▶ **Watch Video Solution**

13. A steel wire 0.72m long has amss of $5.0 \times 10^3 kg$. If the wire is under the tension of 60N, what is the speed of transverse wavs on the wire?

▶ **Watch Video Solution**

14. What are beats?Show analytically how they are produced due to superposition of two sound waves.

▶ **Watch Video Solution**

15. What is matter wave. How it is different from mechanical wave?

▶ **Watch Video Solution**

16. Establsih the relation between velocity and wavelength.

▶ **Watch Video Solution**

17. What is Laplace correction for velocity of sound?

▶ **Watch Video Solution**

18. State the effects of pressure on the speed of sound.

Watch Video Solution

---

19. Explain the difference between progressive

and stationary waves.

Watch Video Solution

---

20. What is Doppler effect in sound?

Watch Video Solution

21. State the difference between a node and an antinode.

▶ **Watch Video Solution**

22. What is organe pipe?

▶ **Watch Video Solution**

23. What are the various properties of elecrto magentic wave?

24. Prove that velocity of gas molecule is directly proportional of the square root of temperature.

25. To obtain the velocity of sound is hydrogen as same as velocity of sound in oxygen at $800^\circ C$, what should be the temperature.

26. A progressive wave is represented as $y = 5\sin 2\pi(20t - 2x)$. Y and x are in meter an t is second. Calculate the wave length and frequency.

27. Write the laws of vibration in stretched string.

28. A listener at rest and heard a sound from a car when away from him and frequency decrease 10% . Calculate the velocity of the car.

▶ **Watch Video Solution**

29. If the tension in a sonometer wire is increased by 2.5 N,its frequency increases in the ratio 3:2.What was the original tension?

▶ **Watch Video Solution**

30. Write the characteristic of prograssive wave and stationary wave.

31. Two organ pipe open in both end of length 50cm and 50.5 cm when sounded, number of beats per sec is 3. Calculate the velocity of sound in air.

32. In a organ pipe closed at one and at $20°C$ the fundamnetal frequency 256 HZ. What is the length of the pipe (velocity of bound in air at $0°C$ is 332 m/s.

33. What is Laplace correction for velocity of sound?

34. Show that fundamental frequency is open organ pipe is twice that of fundamental frequency is organic pipe closed at one end.

▶ **Watch Video Solution**