Physics - ICS Part 1 Physics Chapter 8 Short Questions Test

Q1. Which is richer in harmonic, and why:
(A) an open organ pipe (B) A closed organ pipe.

Ans 1: The pipe, which is open at both ends, is richer in harmonics.
At open end molecules of the air are free to move and an antinode is formed while the movement of air molecules is restricted at the closed end and a node is formed.
Therefore, the pipe open at both ends have antinode at each end and is richer in harmonics.

Q2. State the principal of superposition.

Ans 1:

Q3. Explain the term "Beats" .

Ans 1: Two waves that are travelling in the same direction with a slight difference in frequencies will produce beats.Number of beats per second is equal to the difference in frequencies.

Q4. Give any two applications of Doppler Effect.

Ans 1: Doppler effect is used:

1. In radar systems, the Doppler effect is used to determine the elevation and speed of aero plane.
2. Astronomers use the Doppler Effect to calculate the speed of distant stars and galaxies.

Q5. What are the factors on which speed of sound in air depends?

Ans 1:

1. Speed of sound is inversely proportional to the square root of densities of gases.
2. Speed of sound increases with the increase in temperature
3. Speed of sound is not affected by a variation in the pressure of the gas.

Q6. Why can micro waves not detect under water objects?

Ans 1: Microwave are strongly absorbed by sea water within feet of their transmission Ultrasonic is a high frequency sound wave. Its is not part of electromagnetic spectrum. They are preferred on microwaves for the use of undersea communication because they can travel longer distance in water.

Q7. What feature do longitudinal waves have in common with transverse waves?

Ans 1: The common features are:

1. Bothe are mechanical waves.
2. Both transport energy from one place to another.
3. Both satisfy the equation

Q8. Why "stationary waves" are called standing waves?

Ans 1: In stationary waves energy cannot flow past the nodes and remains "standing" in the medium between nodes. Therefore stationary waves are called standing waves.

Q9. Explain the term red shift and blue shift in Dopplers Effect.

Ans 1: Stars moving away from the Earth show red shift. The emitted waves have a longer wavelength than if the star had been at rest. So the spectrum is shifted towards longer wavelength.
Stars moving towards the Earth show blue shift. This is because the wavelength of light emitted by the star is shorter than if the star had been at rest. So the spectrum is shifted towards shorter wavelength.

Q10. What do you mean by the term progressive waves?

Ans 1: A wave which tr5ansfer energy by moving away from the source of disturbance is called progressive wave.For example, longitudinal and transverse waves.
