SHIKSHA CLASSES

Subject : Physics **Question Paper** **Total Marks :25**

Class : XI **8 : Sound** **Time : 1 Hour**

SECTION - A

Q.1 : Choose the correct option : 4

i) If speed of sound in air at 0 ^{0}C is 331 m/s. What will be its value at 35^{0}C?

a) 331 m/s b) 366 m/s

c) 351.6 m/s d) 332 m/s

ii) The Laplace's correction in the expression for velocity of sound given by Newton is needed because sound waves

a) are longitudinal

b) propagate isothermally

c) propagate adiabatically

d) are of long wavelength

iii) The walls of the hall built for music concerns should

a) Amplify sound b) reflect sound

c) Transmit sound d) absorb sound

iv) The factor that helps to recognise a person by his voice is

a) intensity b) pitch

c) loudness d) quality

Q.2 : Answer the following : 2

i) Define Doppler effect.

ii) Define Amplitude.

SECTION B

: Answer the following : (ANY 3) 6

Q.3 : With the help of a diagram, explain phase and phase difference of a wave.

Q.4 : A wave disturbance has a wavelength of 0.05 m. Find the number of waves in a distance of 1 metre.

Q.5 : State any four points of difference between a transverse wave and longitudinal wave.

Q.6 : Define reverberation. State the measures to decrease reverberation.

Q.7 : Show that velocity of sound increase by 0.61 m/s when temperature increase by 1 ^{0}C

SECTION C

: Answer the following : (ANY 3) 9

Q.8 : Define : i) Frequency

ii) Velocity

iii) Wavelength

Q.9 : A sounding source has a frequency of 256 Hz. If the temperature of air is 27 ^{0}C, what is the wavelength of waves sent by the source? (Velocity of sound in air at 0^{0}C = 331 m/s)

Q.10 : State Newton's formula for velocity of sound. State its limitations. State the assumptions made by Newton.

Q.11 : Explain in detail pitch of a sound.

Q.12 : A man standing between 2 parallel cliffs fires a gun. He hears two echoes one after 4 seconds and other after 6 seconds. The separation between the two cliffs is 1400 m, what is the speed of sound?

SECTION D

: Answer the following : (ANY 1) 4

Q.13 : Derive the expression fo apparent frequency

when listener is stationary and source is

i) Moving towards the listener.

ii) Moving away from the listener.

Q.14 : State the expression for apparent frequency when source is stationary and listener is :

i) Moving towards the source.

ii) Moving away from the source.

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