# PHYSICS

# BOOKS - HC VERMA

# SOUND

## Question Bank

**1.** When we say 'sound travels in a medium', we mean

A. the particles of the medium travel

B. the source travels

C. the disturbance travels

D. the medium travels

**Answer: C**

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**2.** A sound wave consists of

A. a number of compression pulses one after the other

B. a number of rarefaction pulses one after the other

C. compression and rarefaction pulse one after the other

D. a compression and a rarefaction pulse separated by a distance equal to one wavelength

**Answer: C**

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**3.** The time period of a sound wave travelling in a medium is t. At a given instance (t=0) a particular region in the medium has minimum density . The density of this region will be minimum again at

A. t=T

B. t=T/2

C. t=T/3

D. t=T/4

**Answer: A**

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**4.** The frequency , wavelength and speed of a sound wave are related as

A. $v - v\lambda$

B. $\lambda = uv$

C. $v = \frac{\lambda}{v}$

D. $u = v\lambda$

**Answer: D**

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**5.** Hertz stands for

A. second

B. $\text{second}^{-1}$

C. metre

D. $\text{metre}^{-1}$

**Answer: B**

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**6.** The frequency of a source is 20 kHz. The frequencies of the sound waves produced by it in water and air will

A. be the same as that of the source

B. depend upon the velocity of the waves in these media

C. depend upon the wavelength of the waves in these media

D. depend upon the density of the media

**Answer: A**

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**7.** If the density of air at a point through which a sound wave is passing is maximum at an instant, the pressure at that point will be

A. minimum

B. same to the atmospheric pressure

C. equal to the atmospheric pressure

D. maximum

**Answer: D**

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**8.** When we increase the loudness of sound produced by ardio, the property of the sound wave that changes is its

A. amplitude

B. frequency

C. speed

D. wavelength

**Answer: A**

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**9.** The term that describes how the brain interprets the frequency of a sound is called

A. amplitude

B. frequency

C. pitch

D. pinna

**Answer: C**

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**10.** An object moving at a speed greater than that of sound is said to be moving at

A. ultrasonic speed

B. sonic speed

C. infrasonic speed

D. supersonic speed

**Answer: D**

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**11.** In a stethoscope, sound of heartbeats travel through the stethoscope tube

A. by bending along the tube

B. in a straight line

C. by undergoing multiple reflections

D. as a sonic boom

**Answer: C**

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**12.** The properties of ultrasound that make it useful are

A. high power and high speed

B. good directionality and high power

C. high speed and frequency

D. good directionality and ability to move around objects

**Answer: B**

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**13.** Ultrasonic waves are used for detecting objects under water. What technique/device is used for this ?

A. Ultrasonography

B. Echocardiography

C. Phacoemulsification

D. Sonar

**Answer: D**

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**14.** The eardrum is a

A. bone

B. coiled tube

C. stretched membrane

D. fluid

**Answer: C**

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**15.** The part of the ear that is filled with a liquid is the

A. cochlea

B. ear canal

C. anvil

D. hammer

**Answer: A**

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**16.** Find the time period of the source of a sound wave whose frequency is 400 Hz.

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**17.** A sound wave causes the density of air at a place to oscillate 1200 times in 2 minutes. Find the time period and frequency of the wave .

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**18.** A sound wave travels at a speed of 340 m/s. It its wavelength is 2 cm, what is the frequency of the wave ? Will it be in the audible range ?

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