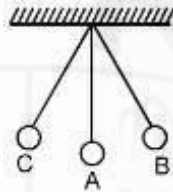


- What is transferred in wave motion:
  - (A) matter
  - (B) energy
  - (C) both A and B
  - (D) none of these
- The maximum displacement of an oscillating body from its mean position is called :
  - (A) amplitude
  - (B) one meter
  - (C) frequency
  - (D) a wave
- Which of the following is visible to a naked eye :
  - (A) light waves
  - (B) sound waves
  - (C) water waves
  - (D) none of these
- Which of the following is not a wave motion :
  - (A) ripples on water
  - (B) sound propagation
  - (C) moving bus
  - (D) radio waves
- In the given figure, which point represents the mean position of the pendulum :



- (A) A
  - (B) B
  - (C) C
  - (D) (B) and (C) both
- Sound is produced due to :
    - (A) heating
    - (B) vibrations
    - (C) running
    - (D) walking
  - Sound waves cannot travel through :
    - (A) glass
    - (B) air
    - (C) water
    - (D) vacuum
  - Transverse waves travel in the form of :
    - (A) compressions and rarefactions
    - (B) crests and troughs
    - (C) crests and compressions
    - (D) troughs and rarefactions
  - Transverse waves can be:
    - (A) Mechanical
    - (B) Non Mechanical
    - (C) Both A and B
    - (D) None of these
  - Light waves are :
    - (A) mechanical waves
    - (B) longitudinal waves
    - (C) transverse waves
    - (D) none of these
  - Define wave motion.
  - Define amplitude.
  - Give two examples which are both periodic and oscillatory motion.
  - Give an example which is periodic but not oscillatory.
  - Differentiate between periodic and oscillatory motion.

**Sound**

**DPP – 2**

1. Velocity of sound in air is:
 

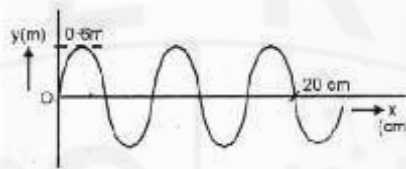
(A) 330 m/s	(C) 380 m/s
(B) 360 m/s	(D) 400 m/s
2. On moon, sound is:
 

(A) like a thunder	(C) louder than on Earth
(B) inaudible	(D) same as on earth
3. Pitch of A is more than that of B, then frequency of :
 

(A) $A = B$	(C) $A < B$
(B) $A > B$	(D) $A < B$
4. 1 KHz is equal to:
 

(A) 10 Hz	(C) 1000 Hz
(B) 100 Hz	(D) 10000 Hz

Directions for questions 5 to 6:



5. What is the amplitude of wave, shown in figure?
 

(A) 0.6 m	(B) 0.3 m	(C) 20 cm	(D) 4 cm
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6. What is the wavelength of the wave, shown in above figure:
 

(A) 20 cm	(C) 0.08 m
(B) 10 cm	(D) 0.6 m
7. A radio station broadcasts at 760 KHz. What is wavelength of the station:
 

(A) 395 m	(C) 760 m
(B) 790 m	(D) 197.5 m
8. A series of ocean waves, each 5.0 m from crest to crest, are moving past the observer at a rate of 2 waves per second. What is the velocity?
 

(A) 2.5 m/s	(C) 8.0 m/s
(B) 5.0 m/s	(D) 10.0 m/s
9. Sound waves of wavelength  $\lambda$  travelling with velocity ' $v$ ' in a medium enter into another medium in which their velocity is ' $4v$ '. The wavelength in 2nd medium is:
 

(A) $4\lambda$	(C) $\lambda / 4$
(B) $\lambda$	(D) $16\lambda$
10. Rarefractions are the regions of:
 

(A) Maximum pressure	(C) Maximum density
(B) Minimum pressure	(D) Minimum density
11. Define wavelength.
12. Give relation between wave velocity, frequency and wavelength.
13. Why do we hear sound of a horn of an approaching car before the car reaches us?
14. The wavelength of sound in air is 5 cm. Find its frequency. (Take velocity of sound = 330 m/s)
15. Find the frequency of sound waves in air if the distance between a compression and an adjacent rarefaction is 0.5 mm. Speed of sound waves in air is 330 m/s.

1. The pitch of a sound depends on its:
 

(A) frequency	(C) resonance
(B) amplitude	(D) intensity
2. Sound vibrations are transmitted from the eardrum directly to the:
 

(A) hammer	(C) stirrup
(B) nerve	(D) cochlea
3. The use of sound waves to determine distance or find objects is called:
 

(A) ultrasound	(C) acoustics
(B) infrasound	(D) sonar
4. The ear structure that converts vibrations into nerve impulses is called:
 

(A) ear canal	(C) anvil
(B) cochlea	(D) eardrum
5. The echo is heard if the original sound reflected by an obstacle reaches our ears after:
 

(A) 10s	(C) 1s
(B) 5s	(D) 0.1 s
6. A dog barks in a park and hears its echo after 0.5 second. If the sound of its bark gets reflected by a nearby building, find the distance between the dog and the building. Take the speed of sound in air as 346 m/s.
 

(A) 173 m	(C) 346 m
(B) 86.5 m	(D) 175 m
7. The deepest recorded point below the sea level is in the Mariana Trench, Pacific Ocean. This point is 11 km below the sea level. A research vessel sends down a sonar signal to confirm this depth. After how long can it expect to get the echo? Take the speed of sound in sea water as 1,520 m/s.
 

(A) 15 s	(C) 14 s
(B) 16 s	(D) 12 s
8. The speed of electromagnetic wave in air is:
 

(A) $3 \times 10^5$ m/s	(C) $3 \times 10^6$ m/s
(B) $3 \times 10^7$ m/s	(D) $3 \times 10^8$ m/s
9. Which of the following statements is correct?
 

(A) Both, sound and light waves in air are longitudinal
(B) Both, sound and light waves in air are transverse
(C) Sound waves in air are transverse and light waves are longitudinal
(D) Sound waves in air are longitudinal and light waves are transverse
10. Which of the following is a wind instrument:
 

(A) Flute	(C) Both A and B
(B) Shehnai	(D) Can't say
11. What is the range of audible frequency for humans?
12. Give the basic conditions of an echo.
13. What causes an echo?
14. Name the organ which makes us listen.
15. Give two examples where the human ear cannot detect a sound.

1. Which of the following is a membrane instrument:
 

(A) Flute	(C) Dolak
(B) Shehnai	(D) Veena
2. Violin is a..... instrument and flute is a ..... instrument
 

(A) Wind, reed	(C) wind, membrane
(B) membrane; wind	(D) stringed, wind
3. Ultrasonic waves are:
 

(A) High frequency waves	(C) High energy waves
(B) Low frequency waves	(D) Both (A) and (C) are correct
4. Which of the following is used in SONAR:
 

(A) Ultrasonic waves	(C) Water waves
(B) Light waves	(D) Radio waves
5. Sonography is based on:
 

(A) Ultrasonic waves	(C) Light waves
(B) Infrasonic waves	(D) None of these
6. A sonar device attached to a ship sends ultrasonic waves in the sea. These waves are reflected from the bottom of the sea. If the ultrasonic waves take 4 seconds to travel from the ship to the bottom of the sea and back to ship (in the form of an echo), what is the depth of the sea? (Speed of sound in water = 1500 m/s.)
 

(A) 1500 m	(C) 3000 m
(B) 30,000 m	(D) 750 m
7. Which of the following is used in SONAR:
 

(A) Ultrasonic waves	(C) Water waves
(B) Light waves	(D) Radio waves
8. Sonography is based on:
 

(A) Ultrasonic waves	(C) Light waves
(B) Infrasonic waves	(D) None of these
9. The pitch of a sound depends on its:
 

(A) frequency	(C) resonance
(B) amplitude	(D) intensity
10. Sound vibrations are transmitted from the eardrum directly to the:
 

(A) hammer	(C) stirrup
(B) nerve	(D) cochlea
11. What are membrane instruments?
12. Give uses of SONAR.
13. Give at least one use of ultrasonic waves in medical science.
14. Name a natural agent which produces ultrasound.
15. A fishing boat using sonar detects a shoal of fish 190 m below it. How much time elapsed between sending the ultra-sonic signal which detected the fish and receiving the signal's echo? (speed of sound in sea water is  $1519 \text{ ms}^{-1}$ )