

MDCAT Physics Chapter 4 Waves Online Test

Sr	Questions	Answers Choice
1	The wavelength of light observed on the earth, from a moving star is found to decrease by 0.05%. Relative to the earth the star is	A. moving away with a velocity of $1.5 \times 10^5 \text{ m/s}$ B. moving away with a velocity of $1.5 \times 10^4 \text{ m/s}$ C. coming closer with a velocity of $1.5 \times 10^5 \text{ m/s}$ D. coming closer with a velocity of $1.5 \times 10^4 \text{ m/s}$
2	The frequency of the fundamental mode of open at one organ pipe is 400 Hz. If one end of pipe is closed the fundamental frequency will be	A. 800 Hz B. 600 Hz C. 400 Hz D. 200 Hz
3	A closed organ pipe and an open organ pipe have their first overtone identical in frequency. Their lengths are in ratio	A. 3:4 B. 1:2 C. 2:3 D. 3:5
4	When passes from medium to another, deviate from its path is called	A. reflection B. refraction C. diffraction D. transmission
5	A whistle is revolved with high speed in a horizontal circle of radius R. to an observer at the centre of the circle the frequency of the whistle will appear to be:	A. Decreasing B. Increasing C. Both D. Constant
6	The fundamental frequency in a stretched string is 10 Hz. To double the frequency, the tension in it must be changed to:	A. $T_2 = 2T_1$ B. $T_2 = 4T_1$ C. $T_2 = T_1$ D. none of these
7	The frequency of an open pipe is f. if one end is closed then its fundamental frequency will be:	A. $f/2$ B. $3f/4$ C. f D. 2f
8	Where in standing wave, do the vibrations of the medium occur?	A. Only at the nodes B. Only at the antinodes C. At all points between the nodes D. At all points between the antinodes
9	A sonar depth finder in a boat uses sound signals to determine the depth of water. Four seconds after the sound leaves the boat it returns to the boat because of reflection from the bottom. Assume the speed of sound in water is 1,460 meters per second. The depth of the water is, in meters, :	A. 2,200 B. 4,800 C. 4,400 D. 2,920
10	A string vibrates in 1 loop has frequency 25 Hz if it moves in 2 loops its frequency would be:	A. 25 Hz B. 50 Hz C. 12.5 Hz D. 5 Hz
11	A progressive sound wave is a means of transferring energy. A progressive sound wave of constant frequency is generated in air. The intensity of energy transfer is directly proportional to another of the wave parameters. Which of the following is correct?	A. $\text{Intensity} \propto (\text{amplitude})^2$ B. $\text{Intensity} \propto (\text{frequency})^2$ C. $\text{Intensity} \propto (\text{wavelength})^2$ D. $\text{Intensity} \propto (\text{pressure amplitude})^2$
12	If a transverse wave has a speed of 10 m/sec and frequency of 10 cycle/sec its wavelength is:	A. 1 m B. 10^{-2} cm C. 10 m D. 10 cm
13	An organ pipe open at both ends and another organ pipe, closed at one end will resonate with each other, if their lengths are in ratio of	A. 1:1 B. 1:4 C. 2:1 D. 1:2

14	The fundamental frequency of a closed organ pipe is 50 Hz. The frequency of second overtone is	A. 100Hz B. 150Hz C. 60Hz D. 250Hz
15	A sonometer wire 100 cm in length has a fundamental frequency of 330 Hz. The velocity of propagation of waves along the wire is	A. 115m/sec B. 115m/sec C. 660m/sec D. 990m/sec
16	A particular wavelength received from a galaxy is measured on earth and is found to be 5% more than that its wave length on earth. Hence galaxy is	A. Moving towards earth B. Going away from earth C. Stationary with respect to earth D. None
17	A stationary wave is established in a string which vibrates in four segments at a frequency of 120 Hz. Its fundamental frequency is:	A. 15Hz B. 60Hz C. 30Hz D. 430Hz
18	In which of the following, Doppler's effect is not applicable?	A. To find speed of satellite B. To find objects under water C. To find speed of star D. To tune a musical instrument
19	Bats navigate and find food by:	A. Ultrasonic B. Echolocation C. Refraction
20	A church organ consists of open ended pipes ranging from 4m to 4 mm, if the speed of sound is considered as 400 m/s then the min and max frequency is:	A. 400 Hz and 4 kHz B. 100 Hz and 100 kHz C. 50 Hz and 50kHz D. 400 Hz and 400 kHz