# MDCAT Physics Chapter 4 Waves Online Test

| Sr | Questions | Answers Choice |
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| 1 | The spectrum of a star's light is measured and the wavelength of one of the lines as thesodium's line is found to be 589 nm. The same line has the wavelength of 497 nm whenobserved in the laboratory. This means the star is | A. Moving away from the earth<br>B. Moving towards the earth<br>C. Stationary<br>D. Revolving around the planet |
| 2 | Which one is the case when the wavelength is actually changed? | A. When source move relative to observer<br>B. When observer move relative to source<br>C. When observer moves around a stationary source at the center of circle<br>D. When the relative displacement between source and observer is zero |
| 3 | The maximum wavelength of a transverse wave that can be set up in a string of length Lis | A. L<br>B. 2L<br>C. V<br>D. 4L |
| 4 | When an observer moves towards a stationary source with a speed equal to 1/5 timesof speed of sound, the percentage increase in the frequency of sound is: | A. 20%<br>B. 40%<br>C. 5%<br>D. 10% |
| 5 | In closed end organ pipe, the frequency of first harmonic is 300 Hz. The frequency ofthird overtone is : | A. 900 Hz<br>B. 1500 Hz<br>C. 2100 Hz<br>D. 600 Hz |
| 6 | If source and observer are moving towards each other with same speed and aftercrossing they are receding each other then frequency observed by observer: | A. Decreases<br>B. Remains constant<br>C. Increases<br>D. First Increases then decreases |
| 7 | A listener observes the frequency "f" of stationary source. If it move toward with 3 times of velocity of sound. Then the apparent frequency of the sound will be | A. f<br>B. 3f<br>C. f/2<br>D. 4f |
| 8 | A closed organ pipe and an open organ pipe have their first overtones of identicalfrequency. Their respective lengths are in the ratio: | A. 1 : 2<br>B. 4 : 3<br>C. 2 : 3<br>D. 3 : 5 |
| 9 | In a closed organ pipe, the fundamental frequency is f. What will be the ratio of thefrequencies of the next three overtones? | A. 2 : 3 : 4<br>B. 3 : 7 : 11<br>C. 3 : 4 : 5<br>D. 3 : 5 : 7 |
| 10 | When temperature increases, frequency of organ pipe: | A. Decreases<br>B. Remains the same<br>C. Increases<br>D. Becomes zero |
| 11 | A 4 m long string fixed at its ends resonate in 4 segments. The wavelength of the waveis: | A. 4m<br>B. 0.5m<br>C. 2m<br>D. 0.25 m |
| 12 | With the propagation of longitudinal waves through a material medium, the quantitiestransferred in the direction of propagation are: | A. Energy, momentum and mass<br>B. Energy and momentum<br>C. Energy and mass<br>D. Energy |
| 13 | It is a common characteristic of all types of wave motion that | A. Particles move up and down<br>B. Particles move back and forth<br>C. Energy is transferred without the transport of particles<br>D. A material medium transmits the disturbance |
| 14 | A wave which consists of a single, non-repetitive disturbance is called a | A. Continuous wave<br>B. Longitudinal wave |

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| | | C. Pulse<br>D. Transverse wave |
| 15 | If the tension in a string stretched between two fixed points is made four times, the frequency of the fundamental harmonic will become: | A. Two times<br>B. Three times<br>C. Four times<br>D. Six times |
| 16 | Wavelength of the wave is the distance between the particles of the medium having adifference of: | A. Zero<br>B. n<br>C. 2n<br>D. □2 |
| 17 | A longitudinal sinusoidal wave has wavelength of 1cm and a period of 2sec. Its wavevelocity is: | A. 50 cm/ sec<br>B. 0.5 cm/ sec<br>C. 5 m/ s<br>D. 0.005 m/ sec |