

ECAT Physics Online Test

Sr	Questions	Answers Choice
1	The velocity of sound in air depends upon	A. Density and elasticity of gas B. Pressure C. Wavelength D. Amplitude and frequency of sound
2	In stationary waves	A. Energy is uniformly distributed B. Energy is minimum at nodes and maximum at antinodes C. Energy is maximum at nodes and minimum at antinodes D. Alternating maximum and minimum energy producing at nodes and antinodes
3	When temperature increase, the frequency of a tuning fork	A. Increases B. Decreases C. Remains same D. Increase or decreases depending on the material
4	If a wave can be polarized, it must be	A. An electromagnetic wave B. A longitudinal wave C. A progressive wave D. A transverse wave
5	Which one of the following could be the frequency of ultraviolet radiation?	A. 1.0×10^{16} Hz B. 1.0×10^{19} Hz C. 1.0×10^{12} Hz D. 1.0×10^{15} Hz
6	The principle of superposition states that	A. The total displacement due to several waves is the sum of the displacement due to those waves acting individually B. Two stationary waves superimpose to give two progressive waves C. A diffraction pattern consists of many interference patterns superimposed on one another D. Two progressive waves superimpose to give a stationary wave
7	Ultra-violet rays differ from X-rays in that they	A. Cannot be diffracted B. Cannot be polarized C. Have a lower frequency D. Are deviated when they pass through a magnetic field
8	Progressive waves of frequency 300 Hz are superimposed in produced a system of stationary waves in which adjacent nodes are 1.5 m apart. What is the speed of the progressive waves?	A. 100 ms^{-1} B. 200 ms^{-1} C. 450 ms^{-1} D. 900 ms^{-1}
9	Data transmitted along glass-fiber cables is in the form of pulses of monochromatic red light each of duration 2.5 ns. Which of the following is the best estimate of the number of wavelength in each pulse?	A. 10^3 B. 10^6 C. 10^9 D. 10^{12}
10	There is no net transfer of energy by particle of medium in	A. Longitudinal wave B. Transverse wave C. Progressive wave D. Stationary wave
11	Through which character we can distinguish the light waves from sound waves	A. Interference B. Refraction C. Polarization D. Reflection
12	Decibel is unit of	A. Intensity of light B. x-ray radiation capacity C. sound loudness D. Energy of radiation
		A. 2 m

13	A stationary sound wave has frequency 165 Hz (speed of sound in air = 330 m/s) then distance between two consecutive nodes is	<p>B. 1 m</p> <p>C. 0.5 m</p> <p>D. 4 m</p>
14	Sound waves in air always	<p>A. Longitudinal</p> <p>B. Transverse</p> <p>C. Stationary</p> <p>D. Electromagnetic</p>
15	The waves moving from a sitar to a listener in air are	<p>A. Longitudinal progressive</p> <p>B. Longitudinal stationary</p> <p>C. Transverse progressive</p> <p>D. Transverse stationary</p>
16	The velocity of sound at same temperature is maximum in	<p>A. $H^{>2}$</p> <p>B. $N^{>2}$</p> <p>C. $O^{>2}$</p> <p>D. $NH^{>3}$</p>
17	If two waves of amplitude 'a' produce a resultant wave of amplitude a, then the phase difference between them will be	<p>A. 60°</p> <p>B. 90°</p> <p>C. 120°</p> <p>D. 180°</p>
18	Two sound waves of slightly different frequencies propagating in the same direction produce beats due to	<p>A. Interference</p> <p>B. Diffraction</p> <p>C. Polarization</p> <p>D. Refraction</p>
19	When two progressive waves of nearly same frequencies superimpose and give rise to beats, then	<p>A. Frequency of beat changes with time</p> <p>B. Frequency of beat changes with location of observer</p> <p>C. All particles of medium vibrate simple harmonically with frequency equal to the difference between frequencies of component waves</p> <p>D. Amplitude of vibration of particles at any point changes simple harmonically with frequency equal to difference between two component waves</p>
20	In the production of beats by 2 waves of same amplitude and nearly same frequency, the maximum intensity to each of the constituent waves is	<p>A. Same</p> <p>B. 2 times</p> <p>C. 4 times</p> <p>D. 8 times</p>
21	The velocity of sound is greatest in	<p>A. Water</p> <p>B. Air</p> <p>C. Vacuum</p> <p>D. Metal</p>
22	Velocity of sound in vacuum (in m/s) is	<p>A. 330</p> <p>B. 1000</p> <p>C. 156</p> <p>D. 0</p>
23	What is frequency of radio waves transmitted by a station, if the wavelength of those waves is 300 m?	<p>A. 1 MHz</p> <p>B. 10 Hz</p> <p>C. 1 GHz</p> <p>D. 100000 Hz</p>
24	Energy is not carried by	<p>A. Transverse progressive waves</p> <p>B. Longitudinal vibration</p> <p>C. Stationary waves</p> <p>D. Electromagnetic</p>
25	Which one is not produced by sound waves in air?	<p>A. Polarization</p> <p>B. Diffraction</p> <p>C. Refraction</p> <p>D. Reflection</p>
26	Which of the following is the longitudinal waves?	<p>A. Sound waves</p> <p>B. Waves on plucked string</p> <p>C. Water waves</p> <p>D. Light waves</p>
27	Laplace formula is derived from	<p>A. Isothermal change</p> <p>B. Adiabatic change</p> <p>C. Isobaric change</p> <p>D. None of these</p>

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28 Which waves are used in sonography?

- A. Microwaves
- B. Infra red waves
- C. Sound waves
- D. Ultrasonic waves

29 Mechanical waves on the surface of a liquid are

- A. Transverse
- B. Longitudinal
- C. Torsional
- D. both transverse and longitudinal

30 Velocity of sound in a diatomic gas is 300 m/sec. what is its rms velocity?

- A. 400 m/sec
- B. 40 m/sec
- C. 430 m/sec
- D. 300 m/sec