

MULTIPLE CHOICE QUESTIONS (MCQs):

- (1) Wave transport:
* Energy * Matter * Mass * None of these
- (2) The waves which do not require any medium for their propagation are called:
* Matter waves * Sound waves
* Electromagnetic waves * Water waves
- (3) The waves which require a medium for their propagation are called:
* Mechanical waves * Matter waves
* Carrier waves * Electromagnetic waves
- (4) In transverse waves:
* The particles of the medium are vibrating along the direction of wave motion
* The particles of the medium are vibrating at right angle to the direction of wave motion
* The particles of the medium do not vibrate at all
* The particles of the medium are vibrating in the opposite direction of wave motion
- (5) In longitudinal waves:
* The particles of the medium are vibrating along the direction of wave motion
* The particles of the medium are vibrating at right angle to the direction of wave motion
* The particles of the medium do not vibrate at all
* The particles of the medium are vibrating in the opposite direction of wave motion
- (6) Water wave are:
* Longitudinal wave * Complex wave
* Transverse wave * Both longitudinal wave and transverse wave
- (7) When stationary Waves are set up in a stretched string it has fundamental frequency 1000 Hz.
What would in the new fundamental frequency if the tension in the string is increased four times.
* 980Hz * 500Hz * 1010Hz * 2000Hz
- (8) When two identical traveling wave are superposed the velocity of resultant wave.
* Increases * Decreases * Becomes zero * Remains constant
- (9) Wave transmit from one place to another:
* Mass * Weight * Momentum * Energy
- (10) A uniform string of length L, mass m is fixed at both ends under tension T. Then it can vibrate with lowest frequency given be:
* $v = \frac{1}{2L} \sqrt{\frac{T}{\mu}}$ * $v = \frac{1}{2} \sqrt{\frac{T}{\mu}}$ * $v = L \sqrt{\frac{T}{\mu}}$ * $v = 2L \sqrt{\frac{T}{\mu}}$
- (11) The speed of a transverse wave along a string of length L and stretched with tension T is given by:
* $\sqrt{\frac{T}{m}}$ * $\sqrt{\frac{\mu}{T}}$ * $\sqrt{\frac{T}{\mu}}$ * $\sqrt{T\mu}$
- (12) The distance between two consecutive nodes of a stationary wave:
* λ * $\lambda/2$ * $\lambda/4$ * $\lambda/6$

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- (13) The distance between a node and its successive antinode is:
 * 2λ * $\lambda/2$ * $\lambda/4$ * λ
- (14) In a sonometer if the Linear density of the wire increased four times, the frequency of vibration:
 * Remains the same * Increases four times
 * Increases two times * Decreases half
- (15) If a string of length 'L' vibrates in one loop, its wave length is given of:
 * $\lambda = \frac{L}{2}$ * $\lambda = L$ * $\lambda = \frac{L}{4}$ * $\lambda = 2L$
- (16) When two exactly similar waves travel in a medium in opposite direction they produce:
 * Standing wave * Beats * Resonances * Diffraction
- (17) Which of the following represents longitudinal wave:
 * Light wave * Sound wave * Radio wave * X-rays
- (18) If the period of wave motion is 4 sec. and speed 8 m/s. then its frequency is:
 * 0.25 Hz * 0.5 Hz * 1 Hz * 2 Hz
- (19) The waves which require a medium for their movement are called:
 * Mechanical waves * Matter waves
 * Carrier waves * Electromagnetic waves
- (20) A wave generator produces 20 waves in 4 sec. its frequency:
 * 2Hz * 4Hz * 5Hz * 6Hz
- (21) The wave speed of transverse wave in terms of its wave length λ and period T is:
 * $V = \lambda T$ * $V = \lambda T^2$ * $V = \lambda^2 T$ * $V = \frac{\lambda}{T}$
- (22) A transverse wave has a wave length 1m and period of 2 sec. its speed:
 * 0.5m/Sec * 0.5cm/Sec * 1.0m/Sec * 2.0m/Sec
- (23) If a transverse wave has speed of 20m/Sec and a frequency of 20Hz, its wave length:
 * 1cm * 1m * 10m * 10cm
- (24) With increase in stretching force a wire, its frequency:
 * Decreases * Increases
 * Does not change * Sometimes increase or decrease
- (25) The waves which do not require any medium for their movement are called:
 * Compressional wave * Mechanical waves
 * Matter waves * Electromagnetic waves
- (26) Frequencies which are multiples of fundamental are called:
 * Beat frequency * Nodal frequency * Harmonics * Doppler frequency
- (27) When the tension in a string is increased four times the speed of wave in the string is:
 * Halved * Doubled
 * Reduced to one fourth * Increased 4 times
- (28) The frequency of wave produced in a stretched string depends upon:
 * Length * Tension * Linear density * All of these
- (29) A wave enters from one medium to another no change occurs in:
 * Frequency * Wavelength * Amplitude * Speed

ANSWER KEY

(1) Energy	(2) Electromagnetic waves
(3) Mechanical waves	(4) The particles of the medium are vibrating at right angle to the direction of wave motion
(5) The particles of the medium are vibrating along the direction of wave motion	(6) Transverse wave
(7) 2000Hz	(8) Remains constant
(9) Energy	(10) $v = \frac{1}{2L} \sqrt{\frac{T}{\mu}}$
(11) $\sqrt{\frac{T}{\mu}}$	(12) $\lambda/2$
(13) $\lambda/4$	(14) Decreases half
(15) $\lambda = 2L$	(16) Standing wave
(17) Sound wave	(18) 0.25Hz
(19) Mechanical waves	(20) 5Hz
(21) $v = \frac{\lambda}{T}$	(22) 0.5m/sec
(23) 1m	(24) Increases
(25) Electromagnetic waves	(26) Harmonics
(27) Doubled	(28) All of these
(29) Frequency	