

Department of Physics
University College of Science
Quiz-1
II PC

- 1) Increase in temperature of medium increases velocity of sound in it.
 - a) **True**
 - b) False
- 2) The resultant of superposition of two harmonic oscillations with equal frequencies is a harmonic oscillation with a different frequency
 - a) True
 - b) **False**
- 3) Choose correct statements from the following
 - a) **The amplitude of the resultant of two harmonic oscillation is a maximum if both the oscillations are in phase**
 - b) The amplitude of the resultant of two harmonic oscillation is a minimum if both the oscillations are in phase
 - c) **The amplitude of the resultant of two harmonic oscillation is a minimum if both the oscillations are in out of phase**
 - d) The amplitude of the resultant of two harmonic oscillation is a maximum if both the oscillations are in out of phase
- 4) Beats are formed when two harmonic oscillations with equal frequency are superimposed on each other.
 - a) True
 - b) **False**
- 5) Heat waves are _____ waves and are _____ in nature.
 - a) Mechanical and transverse
 - b) Mechanical and longitudinal
 - c) **Electromagnetic and transverse**
 - d) Electromagnetic and longitudinal
- 6) Fringe width of bright fringe and dark fringes are
 - a) **Same**
 - b) Different
 - c) $\beta(\text{bright}) > \beta(\text{dark})$
 - d) $\beta(\text{bright}) < \beta(\text{dark})$
- 7) Bright and dark fringes in air wedge experiment due to
 - a) Refraction
 - b) Diffraction
 - c) **Interference**
 - d) Polarization
- 8) Phase and path-difference between incident and reflected light when light incident on water surface
 - a) **$\pi, \lambda/2$**
 - b) $\pi/2, \lambda$

- c) $2\pi, \lambda$
d) $0, \lambda$
- 9) Interference due to superposition of _____ waves.
a) 2
b) 3
c) 4
d) Any number
- 10) Due to interference in bubbles, we can observe
a) Colour fringes
b) Bright fringes only
c) Dark fringes only
d) Nothing will observe
- 11) Frequency of the fundamental note of an open organ pipe is _____ of closed organ pipe
a) **2n**
b) n
c) 4n
d) $1/2n$
- 12) First overtone frequency of a closed pipe of length L_1 is equal to the 2nd harmonic frequency of an open pipe of length L_2 . Then the ratio L_1/L_2
a) $3/4$
b) $4/3$
c) **$3/2$**
d) $2/3$
- 13) The phenomenon in which the frequency of the applied force is equal to the natural frequency of the system is known as _____.
a) **Resonance**
b) Interference
c) Beats
d) Standing waves
- 14) Which of the below mentioned properties makes the difference between progressive and stationary waves
a) Frequency
b) Amplitude
c) **Propagation of Energy**
d) Phase of the wave
- 15) Velocity of sound waves in material medium is
a) **$\sqrt{Y/\rho}$**
b) $\sqrt{B/\rho}$
c) $\sqrt{\gamma P / \rho}$
d) $\sqrt{\rho/Y}$
- 16) How many lenses are used in Fraunhofer diffraction setup?
a) **Two convex lenses**

- b) Two concave lenses
 - c) One convex lens
 - d) No lens was used
- 17) If separation between the two slits in double slit Fraunhofer diffraction setup is changed what change will be observed in diffraction pattern?
- a) Fringe width will decrease
 - b) Fringe width will increase
 - c) Fringes will be coloured
 - d) **No change**
- 18) In Fresnel diffraction, the incident wavefront is
- a) Hyperbolic
 - b) Linear
 - c) **Spherical**
 - d) Elliptical
- 19) The radius of half period zone is proportional to
- a) Wavelength of light
 - b) Square root of frequency
 - c) **Square root of wavelength**
 - d) Frequency
- 20) Zone plate behaves like a
- a) Concave lens with multiple foci
 - b) **Convex lens with multiple foci**
 - c) Concave lens with single focus
 - d) Convex lens with single foci