**Department of Physics**
**University College of Science**
**Quiz-1**

1) Which of the following is not an equation of plane progressive wave
   a) $\Psi(x,t)=a \sin 2\pi/T(t-x/v)$
   b) $\Psi(x,t)=a \sin(\omega t-kx)$
   c) $\Psi(x,t)=a \sin 2\pi(t/T-x/\lambda)$
   **d) $\Psi(x,t)=a \sin 2\pi(t/T-\lambda/x)$**
2) What is the relation between wavelength, time period and velocity?
   a) $\lambda = \frac{T}{V}$
   b) $\lambda = \frac{v}{T}$
   c) $\lambda = Tv/c$
   **d) $\boldsymbol{\lambda = Tv}$**
3) Sound travels faster is
   a) Dry air
   **b) Moist air**
   c) In both
   d) None of the above
4) According to Laplace's Correction, what happens to the velocity of sound if temperature of the medium increases.
   **a) Increases**
   b) Decreases
   c) Remains same
   d) Independent of temperature
5) Which of the following is one-dimensional differential equation of the wave motion
   a) $d\Psi/dt=v^2 d\Psi/dx$
   b) $d^2\Psi/dx^2=v^2 d^2\Psi/dt^2$
   **c) $\boldsymbol{d^2\Psi/dt^{2=} v^2 d^2\Psi/dx^2}$**
   d) $d^2\Psi/dt^{2=} v\, d^2\Psi/dx^2$
6) Wave front is locus of all the point which are vibrating in_____
   **a) Same phase**
   b) Different phase
   c) Phase of pi/2
   d) Phase of pi
7) What should be distance between the source and the split in Fraunhofer diffraction
   a) 10cm
   **b) Infinity**
   c) Zero
   d) 20cm
8) Bending of light around on obstacle is called_____
   **a) Diffraction**

b) Interference.
c) Reflection
d) Polarization

9) The grating constant value for 15000 lines per inch _____
**a) $1.69X10^{-6}\ m^{-1}$**
b) $1.59X\ X10^{-6}\ km^{-1}$
c) $2.69\ X10^{-6}\ m^{-1}$
d) 1.19m

10) In Fraunhofer diffraction at a single slit the centre of the diffraction pattern is always _____
**a) Bright.**
b) Dark.
c) Both
d) None of the above

11) Colour of thin film due to
**a) Interference**
b) Diffraction
c) Polarization
d) Photo electric effect

12) Condition for constructive interference
a) Path difference =nlambda
b) Phase difference=2nπ
**c) Both a) and b) options**
d) None of the above

13) Centre of the Interference pattern always bright because at the centre Of the interference pattern
**a) Path difference is zero**
b) Path difference is (lambda /2)
c) Path difference is 180 m
d) None of the above

14) Coherent sources must emit two light waves of
a) Same phase
b) Constant phase difference
c) **Both a) and b**)
d) Same amplitude

15) Fresnel Biprism is used to calculate
a) **Wave length of light**
b) Phase of light
c) Amplitude of light
d) Velocity of light

16) Length of string lied between two rigid supports is 20cm. maximum wavelength of stationary wave produced is
a) 10cm

b) 20cm
c) 40cm
d) 80cm

17) velocity of a transverse waves given by
a) $v^2 = T/m$
b) $v^2 = m/T$
c) $v^2 = E/T$
d) $v^2 = f/m$

18) When an open organ pipe is dipped in water up to half of its height then its frequency become
a) Half
b) Double
c) Remains same
d) For times

19) Maximum displacement of particles gives
a) Tension
b) Node
c) Antinode
d) Frequency

20) Distance between node and antinode in a stationary wave
a) $\lambda/2$
b) $\lambda$
c) $\lambda/4$
d) $2\lambda$