Assignment:

1. Which of the following waves does not travel in vacuum?
   a. Seismic waves b. X-rays c. Light d. Radio waves
2. A transverse wave consists of
   a. only crests b only troughs
   c. both crests and troughs d. rarefactions and compressions
3. Sound wave in rocks is:
   a. *Longitudinal stationary* b.*Transverse stationary*
   c. *Longitudinal & transverse wave* d. *Wave in rock does not propagate*
4. Which of the following is a mechanical wave?
   a. *Radio wave* b. $X-rays$ c. *Light wave* d. *Sound* waves
5. Which of the wave is transverse wave?
   a. *Sound in air* b. waves produced in rod rubbed along its length
   c. *Waves in wire* d. waves in spring.
6. Which of the following properties of a wave is independent of others?
   a. Velocity b. Frequency c. wavelength d. Amplitude
7. When the propagation of a longitudinal wave through a material medium takes place, the quantities transmitted in the direction of propagation are:
   a. energy, momentum and mass b. energy
   c. energy and mass d. energy and linear momentum

8. A wave is propagating along a string and the displacement of particle along y-axis is given by $y(x,t) = A\cos(\omega t + kx)$. This represents:
   a. A transverse wave along $+ve$ x-axis b. A transverse wave along $-ve$ x-axis
   c. A longitudinal wave along $+ve$ x-axis d. A longitudinal wave along $-ve$ x-axis
9. The distance between two consecutive crests in a wave train produced in a string is 5 cm. If 2 complete waves pass through medium per second, then the velocity of wave is:
   a. 2.5 cms^{-1} b. 5 cms^{-1} c. 10 cms^{-1} d. 15 cms^{-1}
10. The equation of a wave is represented by: $y = 10\,sin(100t - x/10)$. The velocity of the wave will be:
    a. 100 m/s b. 250 m/s c. 750 m/s d. 1000 m/s
11. The distance between two points differing in phase by 60° on a wave having a wave velocity 360 m/s & frequency 500 Hz is:
    a. $0.72m$ b. $0.18m$ c. $0.36m$ d. 0

12. The equation of a traveling wave is $y = 60\,cos\,(1800t - 6x)$ where y is in microns t in secs and x in meter. The ratio of maximum particle velocity to wave velocity is
    a. 3.6×10^{-11} b. 3.6×10^{-6} c. 3.6×10^{-4} d. 3.6×10^{-2}
13. Figure shows a sinusoidal wave at a given instant which points are in phase?
    a. A, B b. B, D c. C, E d. B, C