

~~138~~
74

- 1) Electromagnetic
- 2) Restoring force
- 3) Amplitude
- 4) Period
- 5) Spring Constant
- 6) Frequency
- 7) Simple Harmonic motion
- 8) WAVE
- 9) Megahertz
- 10) Interference
- 11) Hooke's LAW
- 12) Mechanical or Physical, *Transverse*
- 13) WAVE, wavelength
- 14) A) Longitudinal
- 14) B) Rarefaction, *Expansion*
- 14) C) Compression,
- 14) D) Parallel

15)



Total Constructive Interference

16)

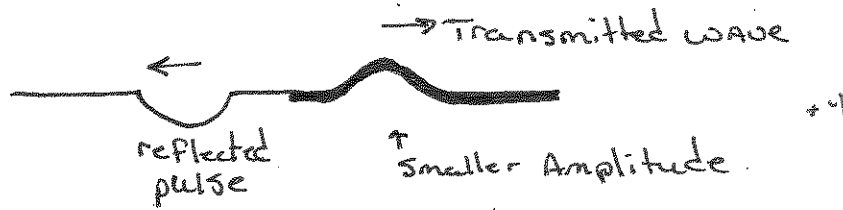


destructive Interference

- 17) A) Normal
- 17) B) Angle of Incidence
- 17) C) Angle of Reflection

skip

- 18) reflected, Inverted +2
 19) refraction
 20) Diffraction ~~SKIP~~
 21)



- 22) A) Antinodes +4
 B) Nodes
 23) Standing wave +2
 Amplitude, Frequency, wavelength +6
 24) A) constructive: A + B +12
 B) Destructive: C, D, E, F
 25) A) constructive: G, J, M, N +18
 B) Destructive: H, I, K, L, O

26) A

27) Given: +2
 $m = 17g$
 $K = 81.5 \text{ N/m}$
 $x = ?$

Soln: $F = Kx$ +2
 $F = mg$
 $mg = Kx$
 $x = \frac{mg}{K} = \frac{(0.017kg)(9.81 \text{ m/s}^2)}{(81.5 \text{ N/m})}$
 $x = 2.0 \times 10^{-3} \text{ m}$ +2

28) Given: +2
 $K = 3.40 \times 10^{-2} \text{ N/m}$
 $x_1 = 4.25 \times 10^3 \text{ m}$
 $x_2 = 1.25 \times 10^4 \text{ m}$
 $F = ?$

Soln:
 $F = Kx$ +2
 $= K(x_2 - x_1)$
 $= 3.40 \times 10^{-2} \text{ N/m} [1.25 \times 10^4 \text{ m} - 4.25 \times 10^3 \text{ m}]$
 $F = 281 \text{ N}$ +2

29) Given:

$f_B = 92.0 \text{ Hz}$ Bird
 $k = 2.55 \times 10^2 \text{ N/m}$
 $m = ?$
 $f_m = 3.21 \times 10^{-2} \times f_B$

Soln:

$T = 2\pi \sqrt{\frac{m}{k}}$ need to 2 to get mass out of $\sqrt{\quad}$
 $T^2 = 4\pi^2 \left(\frac{m}{k}\right)$

$m = \frac{T^2}{4\pi^2} k$ $T = 1/f$

$m = \frac{\left(\frac{1}{(3.21 \times 10^{-2})(92.0)}\right)^2 (2.55 \times 10^2 \text{ N/m})}{4\pi^2}$

$m = 0.741 \text{ Kg}$

30) Given:

$f = 125 \text{ Hz}$
 $d = ?$
 $v = 334 \text{ m/s}$
 \therefore

Soln:

$v = f d$
 $d = \frac{v}{f} = \frac{334 \text{ m/s}}{(125 \text{ 1/s})}$

$d = 2.67 \text{ m}$