73. Two long parallel wires, each carrying current I are separated from each other by a distance L. The magnitude of the force per unit length exerted by one wire on the other is given by

(A) $\dfrac{\mu_o I}{2\pi L^2}$

(B) $\dfrac{\mu_o I}{2\pi L}$

(C) $\dfrac{\mu_o I^2}{2\pi L}$

(D) $\dfrac{\mu_o I}{L}$

74. What is the polarization of the following set of waves

$$E_x = E_1 \cos(\omega t - kz)$$
$$E_y = E_2 \cos(\omega t - kz + \frac{\pi}{2})$$

(A) plane polarized

(B) circularly polarized

(C) elliptically polarized

(D) unpolarized

75. The average flux of the electromagnetic energy over a cycle for an electromagnetic wave with electric field $\vec{E} = \vec{E}_o \cos kx \cos \omega t$ is given by

(A) $E_o^2 \cos^2 kx$

(B) $\dfrac{E_o^2}{2} \cos^2 kx$

(C) zero

(D) $\frac{1}{2}\epsilon_o c E_o^2 \cos^2 kx$

18