# United International University

## School of Science and Engineering

CT Assignment#03; Year 2021; Semester: Spring
Course: PHY 105; Title: Physics
Full Marks: ; Section: B; Time: 30 minutes

| Name: | ID: | Date: |
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**1.** Draw a Lissajou's figure by applying the generating formula $T_x/T_y=5/1$. Also comment on it.

**2.** A standing wave has both node and antinode points. Draw a figure for standing wave showing both node and antinode points.

**3.** Draw the following Lissajou's figure: (i) $x = a \sin \omega t$ and $y = b\, sin(\omega t + 6\frac{\pi}{4})$ .

**4.** Find out the resultant amplitude, node and antinode points in terms of $\lambda$ of the following equations: $y_{1,2} = A\sin(2kx \pm \omega t)$.

**5.** If R=8kΩ, L=0.2mH and C=8μF are connected in series in the following figure, then Find out (i) $\omega_0$, (ii) $Q$ and bandwidth $\beta$ , (iii) $\omega_1$ and $\omega_2$, and (iv) amplitude of current at $\omega_0$, $\omega_1$ and $\omega_2$.