Arab Academy for Science & Technology and Maritime Transport

College of Engineering and Technology

Department : Electronics and Communications

Course : Electronic Measurements **Course Code:** EC410

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Problem Set #1

Cathode-Ray Oscilloscopes

1-A 500 Hz triangular wave with a peak amplitude of 40 V is applied to the vertical deflecting plates of a CRT. A 250 Hz sawtooth wave with peak amplitude of 50 V is applied to the horizontal deflecting plates. The CRT has a vertical deflection sensitivity of 0.1 cm/V and a horizontal deflection sensitivity of 0.08 cm/V. Assuming that the two inputs are synchronized, determine the waveform displayed on the screen.

2- Repeat problem 1 with the sawtooth frequency changed to 1000/6 Hz.

3- A 1 kHz triangular wave with peak amplitude of 10 V is applied to the vertical deflecting plates of a CRT. A 1 kHz sawtooth wave with peak amplitude of 20 V is applied to the horizontal deflecting plates. The CRT has a vertical deflection sensitivity of 0.4 cm/V and a horizontal deflection sensitivity of 0.25 cm/V. Assuming that the two inputs are synchronized. Determine the waveform displayed on the screen.

4- Repeat problem 3 with the triangular wave frequency changed to 2 kHz.