



Kafrelsheikh University - Faculty of Engineering

Course	Electronic Measurements & Testing (2)	Date	16/6/2021
Time	3 Hours	Mark	80
Students	4th year Electronics and Electrical Communications		

Answer all the following questions:

Q1. Explain the Operation of the 555 timer as a Voltage-Controlled Oscillator (VCO) (16 Marks)

Q2: What are the Design considerations and procedures for fiber optic communication systems? And how to assure these considerations are satisfied? (16 Marks)

Q3: Explain the power budget Analysis of an optical communication link. (16 Marks)

Q4: A hypothetical isotropic antenna is radiating in free space. At a distance of 100 m from the antenna, the total electric field (E_{θ}) is measured to be 5 V/m. Find the

(a) power density (W_{rad}) (b) power radiated (P_{rad}) (16 Marks)

Q5: A linearly polarized plane wave traveling along the negative z-axis is incident upon an elliptically polarized antenna (either CW or CCW). The axial ratio of the antenna polarization ellipse is 2:1 and its major axis coincides with the principal x-axis. Find the polarization loss factor (PLF) assuming the incident wave is linearly polarized in the:

(a) x-direction (b) y-direction (16 Marks)

Good Luck and Best Wishes

Dr. Ibrahim Elashry