Revision Guide Paper - **Do you know the…**

Chapter 1&2 – Tutorial 1&2

- two main advantages of optical fiber?
- three advantages operating at 1310nm in optical fiber link?
- 1st condition for light propagation in optical fiber? What is the 2nd condition?
- three types of optical fibers?
- three types of dispersion in optical fibers?
- two main causes of attenuation in an optical fiber?
- Low loss windows and its 3 wavelengths?

Chapter 3 – Tutorial 3

- two types of light sources? differences between them?
- two types of light detectors? Differences between them?
- differences in the biasing between light sources and light detectors?
- three differences between spontaneous and stimulated emission?
- meaning of coherent in light emission?
- best light source and light detector for long diatance transmission?

Chapter 4 – Tutorial 4

- difference between risetime limited and system power limited?
- impact on bandwidth when using RZ signal? and NRZ signals?
- conditions for achieving a low loss optical fiber link?
- conditions for achieving a maximum bandwidth operation?
- calculations to determine maximum distance for optical fiber link?
- calculation of risetime budget? System power budget?
- advantages of WDM ? DWDM?
- differences between DWDM and CWDM?

Chapter 5 – Tutorial 5

- differences between the three categories of satellites?
- four conditions for a geostationary satellite?
- main advantage of satellite communication?
- two transmission frequency bands for satellite comm?

Chapter 6 – Tutorial 6

- functions of the transponder?
- advantage of frequency reuse?
- methods on achieving frequency reuse?
- block diagram of Receive & GCE – Receive subsystems?
- sidelobe radiation level calculation for dish antenna?
- main advantages and diadvantages of TDMA over FDMA?
- difference between TDMA and FDMA?

Chapter 7 – Tutorial 7

- Calculation of EIRP? Uplink/downlink FSPL? C/N ? Total C/N?