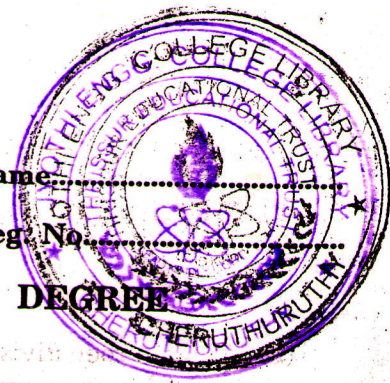


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Name: .....

Reg. No. ....



**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, MAY/JUNE 2007**

**EC 2K 805 (E)—SATELLITE COMMUNICATION SYSTEMS**

**(AI/EE/IC/PTEE 2K 803 E)**

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

**Part A**

1. (a) Explain what is meant by geostationary orbit.  
(b) Explain what is meant by ascending and descending nodes.  
(c) Explain about spin stabilization.  
(d) Explain what is meant by redundant receiver in connection with communication satellites.  
(e) Explain what is meant by frequency reuse technique.  
(f) Explain what is meant by input back-off.  
(g) Explain what is meant by FDM and FDMA.  
(h) Explain the function of the burst-code word in TDMA burst.

(8 × 5 = 40 marks)

**Part B**

2. (a) Explain the various perturbation forces which cause the orbit perturbation of a satellite and discuss the function of station keeping in this regard.

*Or*

- (b) (i) Explain Hohmann transfer Orbit. (8 marks)  
(ii) Explain what is meant by sidereal day and solar day. (7 marks)

3. (a) What are the attitude and orbit control sub-systems ? Explain how these perform their functions.

*Or*

- (b) Draw the block diagram of regenerative repeater and explain function of each block.

(15 marks)

4. (a) Derive general link equations for satellite link design.

*Or*

- (b) Write short notes on :  
(i) VSAT.  
(ii) Frequency band used for satellite.

(8 + 7 = 15 marks)

**Turn over**

5. (a) What is TDMA super frame ? Explain its structure. How is it different from a simple TDMA frame ?

Or

- (b) Explain code division multiple access system and explain.

[4 × 15 = 60 marks]