

Total number of printed pages – 4 **B. Tech**
PEEC 5411

Eighth Semester Examination – 2008

ADVANCE COMMUNICATION SYSTEMS

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory
and any **five** from the rest.*

*The figures in the right-hand margin
indicate marks.*

*Provide suitable illustrations
wherever necessary.*



1. Answer the following in brief : 2 x 10
- (a) What is ATM ? What is its role in data communication ?
- (b) How sampling of an analog signal helps to achieve TDM ? What is sampling interval for toll quality speech ?

- (c) Give the spectrum of any line code that you familiar with.
- (d) What is a combo chip ?
- (e) What is cellular about digital cellular phone ?
- (f) Is a pure binary data system suitable as line code ? Why ?
- (g) Name any speech coding technique. What is its objective ?
- (h) What is the objective of a CDMA system ? How it is done ?
- (i) What is the role of diversity in a micro-wave system ? Name any two diversity method.
- (j) What is the basic ISDN data rate ? How is it grouped ?
2. (a) Describe the accessories required for setting a LAN. What is a typical protocol used for data transfer ? 6

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Contd.

- (b) Discuss a synchronous data link protocol. What is synchronous about it ? 4
3. (a) Discuss the T carrier system. How the frame rate is decided ? 7
- (b) What is the digital carrier frame synchronization ? Why is it necessary ? 3
4. (a) Describe any speech coding technique that you have studied. Draw neat sketch to illustrate your answer. 5
- (b) How digital modulation is different from analog modulation ? Discuss any digital modulation scheme by giving its spectrum. 5
5. (a) Explain how TDMA works in a satellite communication system. Draw neat diagram. 6
- (b) Discuss the log characteristics of microwave radio. What does it mean ? 4
6. (a) Compare CDMA and FDMA from five points of view. 5

- (b) Discuss the voice channel of a GSM system. 5
7. (a) Enumerate the essential components of a satellite communication system. Explain the function of each component. 7
- (b) What is the purpose of a repeater station ? 3
8. (a) What is LOS characteristics of microwave radio ? What is its significance and in which frequency range you obtain it ? 4
- (b) Discuss CCITT X.25 protocol. What type of protocol is this ? What is its importance ? 6

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