Code No: RR320401 **Set No. 1**

III B.Tech II Semester Supplimentary Examinations, Apr/May 2008
COMMUNICATION SYSTEMS
(Electronics & Communication Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) An AM transmitter of 1KW power is fully modulated. Calculate the power transmitted if it is transmitted as SSB. [4]
   (b) Calculate the filter requirement to convert DSB signal to SSB Signal, given that the two side bands are separated by 200HZ. The suppressed carrier is 29 MHZ. [2+6]
   (c) Give and explain 3 areas of applications where standard FM transmission is needed? [4]
2. (a) Mention briefly the advantages of superheterodyne receiver over TRF receiver. [4]
   (b) Explain why local oscillator frequency should be higher than the input signal frequency. [4]
   (c) Write about Image frequency and double spotting. [4+4]
3. (a) Differentiate between simple, delayed and amplified AGC and explain their action with the help of simple circuits blocks.
   (b) Discuss briefly similarities and differences between FM and AM receivers.
   (c) Write in detail about the limiter used in FM receiver. [8+4+4]
4. (a) Classify telecommunication networks based on coverage area?
   (b) Write about different data networks? [8+8]
5. Write about phased operation in controlling sequential write / random read, random write/ sequential read? [16]
6. Explain about the architecture of the SS7? [16]
7. Write about the following
   (a) User level signaling in ISDN
   (b) Network level signaling in ISDN [8+8]
8. (a) Write about the modeling of propagation channel in mobile radio environment?
   (b) Discuss about multiple accessing techniques? [8+8]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: RR320401 **Set No. 2**

III B.Tech II Semester Supplimentary Examinations, Apr/May 2008
COMMUNICATION SYSTEMS
(Electronics & Communication Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Explain the function of balanced modulators.
   (b) What is the advantage gained from using a pre emphasis circuit in the Armstrong transmitter.
   (c) i. What is the operating frequency range of short wave transmitters.
   ii. The centre frequency of the modulator in the FM transmitter having five doublers is 1.2 MHZ with a deviation frequency of 1 KHZ .What is the resulting output deviation frequency [4+4+4+4]
2. (a) Draw a block diagram of a typical AM receiver and describe briefly function of each block. [2+6]
   (b) Explain the necessity for:
   i. Tone and volume control
   ii. Alignment and tracking in radio receiver What is meant by spurious response of a receiver? [4+4]
3. (a) Differentiate between simple, delayed and amplified AGC and explain their action with the help of simple circuits blocks.
   (b) Discuss briefly similarities and differences between FM and AM receivers.
   (c) Write in detail about the limiter used in FM receiver. [8+4+4]
4. (a) What are the advantages with electronic switching? [6]
   (b) Explain about the two approaches to organize stored program control? [5+5]
5. (a) Explain about a two stage time space switch?
   (b) Write about space time space switch? [8+8]
6. (a) Write about the functions performed by subscriber loop interface?
   (b) Explain the operation of Echo suppressor? [8+8]
7. (a) Write the differences between the code - division multiple access and frequency division multiple access?
   (b) Explain the protocol architecture of ISDN? [8+8]
8. (a) Discuss about interactive services in B-ISDN?
   (b) Explain about SONET system? [8+8]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: RR320401 **Set No. 3**

III B.Tech II Semester Supplimentary Examinations, Apr/May 2008
COMMUNICATION SYSTEMS
(Electronics & Communication Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Explain the operation of ISB transmitter with block diagram. Where it is used?
   (b) What is the function of crystal filters in SSB transmitter?
   (c) State and explain with respect to 'Q', various types of filters used to separate side bands? [8+4+4]
2. (a) Draw the block diagram of a typical AM receiver and describe briefly function of each block. [2+4]
   (b) Explain the necessity for
      i. tone and volume control
      ii. alignment and tracking in radio receivers. What is meant by spurious response of a receiver? [4+6]
3. (a) Differentiate between simple, delayed and amplified AGC and explain their action with the help of simple circuits blocks.
   (b) Discuss briefly similarities and differences between FM and AM receivers.
   (c) Write in detail about the limiter used in FM receiver. [8+4+4]
4. (a) Write about the classification of switching systems?
   (b) What is the need for telecommunication networks and explain about it?[8+8]
5. Describe about time division space switching and differentiate between analog time division and digital time division switching? [12+4]
6. (a) What are the different forms of signaling in telecommunication network?
   (b) Write about subscriber loop interface circuit? [16]
7. (a) Write about the advantages and disadvantages of geosynchronous satellites?
   (b) Explain the protocol architecture of ISDN? [8+8]
8. What is meant by frequency reuse? What are its advantages and disadvantages in mobile radio communications? [4+6+6]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: RR320401 **Set No. 4**

III B.Tech II Semester Supplimentary Examinations, Apr/May 2008
COMMUNICATION SYSTEMS
(Electronics & Communication Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Explain the operation of ISB transmitter with block diagram. Where it is used?
   (b) What is the function of crystal filters in SSB transmitter?
   (c) State and explain with respect to 'Q', various types of filters used to separate side bands? [8+4+4]

2. Write short notes on the following:-
   (a) Automatic Gain Control
   (b) Diode Detector
   (c) Mixers [5+5+6]

3. (a) With reference to an AM superheterodyne receiver explain the need for AGC and indicate simple method of obtaining it. What is delayed AGC circuit and in what respects it differs from a simple AGC circuit. [6+2]
   (b) Explain the measurement of sensitivity, selectivity and fidelity of receiver. [3+3+2]

4. (a) Write about the three modes of operation in dual processor architecture?
   (b) How the functions of control subsystem are divided into levels? [8+8]

5. Write about phased operation in controlling sequential write / random read, random write/ sequential read? [16]

6. Explain about the architecture of the SS7? [16]

7. (a) Explain the protocol architecture of ISDN?
   (b) Discuss about cellular Mobile telephony? [10+6]

8. (a) Differentiate between point to point and multiple point connections?
   (b) Explain about SONET system. [8+8]

⋆ ⋆ ⋆ ⋆ ⋆