PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech., Summer 2018 - 19 Examination

Semester: 4   Date: 29/4/2019
Subject Code: 03112251   Time: 2:00 pm To 4.30 pm
Subject Name: Communication Engineering   Total Marks: 60

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (Each of one mark)   **(15)**
   1. Advantages of analog communication over digital communication are:
      a) Data rate is low   b) Less transmission bandwidth is required
      c) Synchronization is not needed   d) All of the above
   2. Example of continuous wave analog modulation is:
      a) PCM   b) DM   c) AM   d)PAM
   3. The process of recovering information signal from received carrier is known as:
      a) Detection   b) Modulation   c) Demultiplexing   d) Sampling
   4. The maximum bandwidth is occupied by:
      a) ASK   b) BPSK   c) FSK   d) None of the above
   5. The modulation techniques used to convert analog signal into digital signal are
      a) Pulse code modulation   b) Delta modulation
      c) Adaptive delta modulation   d) All of the above
   6. In a transmitter ………. oscillator is used.
   7. The major advantage of FM over AM is …………..
   8. In PCM the samples are dependent on _____.
   9. Every frequency has   ___ orthogonal functions.
   10. Reconstruction filter is difficult to implement in hardware. TRUE/FALSE
   11. List different types of modulation Techniques.

   12. Define :Bit rate and Baud rate
   13. List out characteristic of radio receiver.

   14. Define: Thermal Noise
   15. Define: Modulation index

Q.2 Answer the following questions. (Attempt any three)   **(15)**
   A) Draw and explain Binary phase shift keying (BPSK).
   B) Explain pre-emphasis and de-emphasis.
   C) Discuss super heterodyne receiver block diagram and explain its working.
   D) Explain frequency reuse concept.

Q.3 A) Discuss working principle of Amplitude Modulation (AM) and draw its wave form. And derive   **(07)**
mathematical Expression of AM wave.

   B) Explain Delta modulation techniques with the help of waveform and block diagram.   **(08)**
                                              OR
   B) Discuss communication receiver block diagram and explain its working.   **(08)**

Q.4 A) Explain global system for mobile communication and its architecture in detail.   **(07)**
                                              OR
   A) Discuss the concept of Zigbee and WiFi in brief.   **(07)**
   B) Explain pulse code modulation (PCM) with the help of block diagram and waveform.   **(08)**