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BACHELOR OF SCIENCE (COMPUTER SCIENCE) (CBCS - 2018 COURSE)
S.Y.B.Sc.(Computer Science) Sem-III : WINTER- 2022
SUBJECT : PRINCIPLES OF COMMUNICATION

Day : Saturday

Time : 10:00 AM-01:00 PM

Date : 17-12-2022

W-20096-2022

Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the **RIGHT** indicate **FULL** marks
 - 3) Draw neat labeled diagrams **WHEREVER** necessary.
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- Q.1** Answer **ANY TWO** of the following : **[12]**
- a) Explain Frequency Division Multiplexing. Also explain FDM hierarchy. State advantages and disadvantages of FDM.
 - b) Explain QPSK with the help of constellation diagram and waveforms.
 - c) Explain amplitude modulation with respect to concept, equation, frequency spectrum and modulation index. Also state advantages and disadvantages of it.
- Q.2** Answer **ANY TWO** of the following : **[12]**
- a) Draw block diagram of communication system. Explain the function of each block.
 - b) Explain the concept of Frequency- Shift Keying, Phase-Shift Keying and Amplitude- Shift Keying.
 - c) Explain the GSM architecture in brief.
- Q.3** Answer **ANY TWO** of the following : **[12]**
- a) What is asynchronous and synchronous transmission? Explain asynchronous transmission with necessary diagram.
 - b) With neat diagram and waveforms explain the concept of Pulse Amplitude Modulation.
 - c) i) Explain simplex, half duplex and full duplex communication with one example each.
ii) State three points of difference between wired and wireless communication.
- Q.4** Answer **ANY THREE** of the following : **[12]**
- a) Define mobile communication. Explain i) Terminal mobility
ii) Personal mobility iii) service mobility
 - b) What is frequency modulation? Explain Centre frequency, frequency deviation and carrier swing
 - c) Explain the general block diagram of a cellular telephone unit.
 - d) Explain the working of diode demodulator with a neat circuit diagram.
- Q.5** Answer **ANY FOUR** of the following : **[12]**
- a) Define the following i) S/N ratio ii) Baud rate iii) Channel bandwidth
 - b) What is FDMA? State any two features of it.
 - c) State three points of difference between Amplitude modulation and Frequency modulation'
 - d) Explain any three applications of electronic communication in brief.
 - e) State one example of each : i) RFID ii) ZigBee iii) Bluetooth
 - f) State the need of antenna. Also define any two parameters of it.