BACHELOR OF SCIENCE (COMPUTER SCIENCE) (CBCS - 2016 COURSE)
S.Y.B.Sc.(Computer Science) Sem-III :SUMMER- 2022
SUBJECT : PRINCIPLES OF COMMUNICATION

Day : Thursday
Date : 21-07-2022

S-14885-2022

Time : 03:00 PM-06:00 PM
Max. Marks : 60

N. B. :

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat and labelled diagrams **WHEREVER** necessary.

Q. 1 Answer **ANY TWO** of the following: **(12)**

a) With neat block diagram explain the GSM architecture.
b) Differentiate between amplitude modulation and frequency modulation.
c) Explain Pulse Code Modulation (PCM) with necessary waveforms.

Q. 2 Answer **ANY TWO** of the following: **(12)**

a) What is asynchronous and synchronous transmission? Explain asynchronous transmission with necessary diagram.
b) What is FDM? Explain the formation of 12 channel group.
c) Explain AM modulator and demodulator using diode circuits.

Q. 3 Answer **ANY TWO** of the following: **(12)**

a) What is GPRS? Explain with block diagram.
b) With the help of phasor diagram explain the concept of QPSK modulation.
c) Draw block diagram of communication system and explain the function of each block.

Q. 4 Answer **ANY THREE** of the following: **(12)**

a) Define the following parameters of antenna:

i) Polarization
ii) Gain
iii) Directivity of antenna
iv) Radiation intensity

b) State:

i) Nyquist's theorem
ii) Shannon's theorem

c) What is modulation? Explain phase modulation.
d) State three points of difference between FDM and TDM.

Q. 5 Answer **ANY FOUR** of the following: **(12)**

a) State the functions of MTSO.

b) **i)** If $V_m = 4\sin 2\pi(3\,\mathrm{KH}_Z)t$ and $V_c = 8\sin 2\pi(1200\,\mathrm{KH}_Z)t$.

Calculate modulation index for AM.

ii) What is baseband communication?

c) State and explain three features of TDMA.

d) Define:

i) Simplex **ii)** Half duplex **iii)** Full duplex

e) State any three applications of Bluetooth.

f) Define FSK. Draw a diagram showing output of FSK modem sending following data : 10101100

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