

B.TECH. SEM -V BIO MEDICAL 2014 COURSE (CBCS) :

SUMMER - 2018

SUBJECT: PRINCIPLES OF COMMUNICATION & TELEMEDICINE

Day: **Tuesday**
Date: **22/05/2018**

S-2018-2376

Time: **10.00 AM TO 01.00 PM**
Max Marks: 60

N.B:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data if necessary.
- 4) Use of non- programmable **CALCULATOR** is allowed.

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- Q.1 a)** Describe ECG telemetry transmitter and receiver. (06)
b) What is obstetrical telemetry system? (04)
- OR**
- Q.1 a)** How analog physiological signals are transmitted over telephone lines? (06)
b) What is implantable telemetry system for blood pressure & blood flow? (04)
- Q.2 a)** What is telemedicine concept? (06)
b) What is use of internet resource for telemedicine? (04)
- OR**
- Q.2 a)** What is significance of Artificial intelligence in healthcare? (06)
b) Define Teleradiology, Teletherapy, Telepathology & Tele education. (04)
- Q.3 a)** Derive the equation for power relations in Amplitude modulation. (06)
b) A certain transmitter radiates 9KW with carrier unmodulated & 10.125KW when carrier is sinusoidally modulated. Calculate the modulation index, percent of modulation. If another sine wave corresponding to 40 % modulation is transmitted simultaneously. Determine the total radiated power. (04)
- OR**
- Q.3 a)** What is single sideband suppressed carrier (J3E) modulation? What are its advantages with respect to ordinary AM (A3E)? (06)
b) What is co channel interference-capture effect? (04)
- Q.4 a)** Compare natural & flat top sampling. (06)
b) What is concept of time division multiplexing? (04)
- OR**
- Q.4 a)** What are the limitations of DM system? How to overcome these limitations? (06)
b) How analog signal is converted to digital in PCM? (04)
- Q.5 a)** What is PSTN in telephone network? (06)
b) Describe any one type of electronic exchange. (04)
- OR**
- Q.5 a)** What is FSK modulation and demodulation? (06)
b) Write the significance of Modem in communication. (04)
- Q.6 a)** How photodiode is used as optical detector? (06)
b) What are the various types of optical fiber? (04)
- OR**
- Q.6 a)** Describe the various orbital aspects in satellite communication. (06)
b) Write the significance of transponder in satellite. (04)

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