Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (ECE)   (Sem.–7)

BIOMEDICAL SIGNAL PROCESSING
Subject Code : BTEC-909
M.Code : 71913

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A** is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. **SECTION-B** contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. **SECTION-C** contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Write briefly :

1) Write the importance of Fourier transform in biomedical signal processing.

2) What do you mean by a Random signal?

3) What are the two important characteristics of sleep stage 2? Specify.

4) What are the two most important and common goals of biomedical signal analysis methods?

5) What do you mean by a Spindle?

6) Identify the primary and reference signals in the case of fetal ECG monitoring and identify how they are required.

7) Differentiate between precordial and limb leads.

8) What do you mean by Spike and Wave rhythm in EEG signals?

9) What do you mean by the term Arrhythmia?

10) Define action potential.

SECTION-B

11) Explain the effects of noise in Biomedical instruments.

12) Discuss the working of Adaptive Noise Canceller.

13) Explain how automated ECG analysis is carried out.

14) Explain how Stochastic signals are processed?

15) Explain the procedure adopted for modeling of EEG signals.

SECTION-C

16) Discuss in detail about Sleep Stage Analysis.

17) Discuss about the Differentiation based QRS Detection Techniques.

18) Discuss the following :

   a) Filtering in Biomedical instruments

   b) Fetal ECG monitoring

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.