

**B.Tech. SEM -VII Bio Medical 2014 Course (CBCS) : WINTER - 2018**  
**SUBJECT : 1) ELECTIVE – I : SOFTWARE TOOLS FOR BIO SIGNAL ANALYSIS**

Day : Friday  
Date : 30/11/2018

Time : 02.30 PM TO 05.30 PM  
Max. Marks : 60

**W-2018-2588**

**N. B. :**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 4) Assume suitable data, if necessary.

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- Q. 1** Describe in detail with example: (10)
- a) Data Acquisition tool box in MATLAB.
  - b) Image processing tool box in MATLAB.

**OR**

Define overlay plot. What are the ways of generating overlay plots? Explain (10) with example.

- Q. 2** a) Enlist any 4 controls used to design the GUI in VB. (02)
- b) Design the “Forms” in VB to create a patient database which includes Name, ID Number, HR, BP, Pulse and temperature and write steps to execute it. (08)

**OR**

- a) What is VB? What are the various VB editions? (05)
- b) Draw and explain VB development environment. (05)

- Q. 3** Explain “While Loop” with “stop if True” and “Continue if true” conditions in LabVIEW. (10)

**OR**

- a) What is sub VI? Give one example and explain. (05)
- b) Compare graphical programming with conventional programming. (05)

- Q. 4** a) Draw and describe the use of AI start VI. (07)
- b) What are the types of acquisition VIs in LabVIEW? (03)

**OR**

- a) What are VIs used in simple VIs? What are the limitations of simple VI? (06)
- b) List the elements of typical DAQ system and explain. (04)

**P. T. O.**

**Q. 5 a)** Explain Linear-phase FIR filter using rectangular window. (05)

**b)** What are the characteristics of symmetric and antisymmetric FIR filters? (05)

**OR**

**a)** What are the general design steps for FIR filter? (05)

**b)** List the various types of window function used to design FIR filters. (05)

**Q. 6 a)** What are the applications of MATLAB in biomedical engineering? (05)

**b)** Explain detection of QRS complex in ECG signal. (05)

**OR**

Explain the use of discrete wavelet transform for removal of 50 Hz noise signal. (10)

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