

Part I. Answer these questions by marking the best answer among the choices given:

1. In order to process a biological signal inside a computer, it must be ...
 - a. Sampled
 - b. Quantized
 - c. Of compact support
 - d. All of the above
2. Conversion of a signal from continuous to discrete time form is called ...
 - a. Sampling
 - b. Quantization
 - c. Analog-to-digital conversion
 - d. Digital-to-analog conversion
3. To handle an infinite support signal inside a computer, we use ...
 - a. Windowing
 - b. Sampling
 - c. Quantization
 - d. More memory
4. To direct one bioelectric signal into one of several processing/display channels, we can use ...
 - a. Analog multiplexer
 - b. Analog demultiplexer
 - c. Digital multiplexer
 - d. Digital demultiplexer
5. For proper patient isolation, it must include ...
 - a. Signal isolation
 - b. Power supply isolation
 - c. Both A and B
 - d. A or B

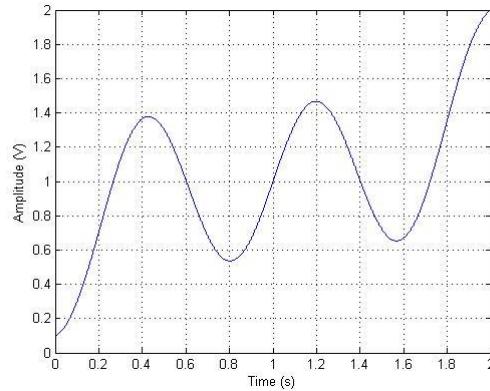
Part II. Mark the following statement as either True (T) or False (F):

6. Biomedical signals are usually modeled as random and unknown signals.
7. 50 MSa/s ADC has longer sampling period than 1 MSa/s ADC.
8. 12-bit DAC produces lower quality analog signal 8-bit DAC.
9. For a bioelectric signal with frequency range from 0.2 to 100 Hz, a low-pass filter should be used.
10. Sampling period of a 10 MSa/s ADC will be 100 ns.

- *Assigned:* March 31, 2015
- *Deadline:* Tuesday April 7, 2015
- *Submission:* Electronic form (PDF) to instructor's email address: ykadah@kau.edu.sa

Part III. Answer the following question:

11. For the signal shown below, if it is sampling with a sampling rate of 2.5 samples/s and quantized with a step of 0.4 V, draw the resultant digital signal. Comment on the similarity between the original analog and digital signals.



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