## EE 497-2015 Problem Set 1

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

- 1. Ensuring essential communication in medical devices includes ...
  - a) People working harder to communicate with each other
  - b) Employing redundant methods of communicating vital information
  - c) Sufficiently loud auditory alarm signal
- 2. In the real world, the medical devices are demanded to ...
  - a) Have a limited user workload
  - b) To be less rugged
  - c) To prioritize user input
- 3. People easily associate an turning a knob clockwise with an increase in the rate of gas flow because of ...
  - a) Operation training
  - b) Experience with similar devices
  - c) Conventional mapping
- 4. Designers of medical devices should refine their designs through ...
  - a) Usability testing
  - b) Electrical testing
  - c) Mechanical testing
- 5. Most medical device users like devices that are ...
  - a) Designed for hospital use only
  - b) Simple with only needed features
  - c) Equipped with many extra features
- 6. When buttons on the medical device front panel have both different labels and different colors, this is called ...
  - a) Device appeal
  - b) Robust critical controls
  - c) Redundant coding

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

- 7. Medical devices designed with multiple operational modes must clarify the present operating mode to the user.
- 8. When possible, medical monitoring device designs should help users forecast patient variables.
- 9. Usability test participants should include someone from the design team in addition to doctors and nurses.
- 10. Device user interface designs usually violate a human factors engineering guideline.
- 11. Medical device users always receive complete and proper training before using a given device.
- 12. Designers should treat warnings as the main option for preventing problems in medical devices.