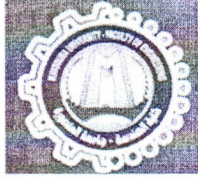




Mansoura University



Faculty of Engineering

Biomedical Engineering (BME) Department ·

Time allowed: 2 Hours, August 25th, 2019

Exam is four pages, Full mark=50

Assume any missing data; solve in same paper

Include and name all steps

Answer the following, showing details if possible [50 points, each is 5 points]

1. Sketch showing details the action potential curve and complete the sentences below:

- Sketch (3 points)

- Types of cells that submit action potentials (1 points)
- Condition for a cell to submit an action potential: (1 points)

2. Sketch a normal electrocardiogram signal of heart rate 70 beat per minutes and complete below:

- Sketch (3 points)

- The time between a p-wave and the next p-wave=.....sec (1 points)
- Muscle contraction occurs during cell whereas muscle expansion occurs during (1 points)