

# Physiology



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- 1 Stretching a myocardial cell
- A) only decreases the force of a contraction.
  - B) only allows more  $\text{Ca}^{2+}$  to enter.
  - C) only increases the force of contraction.
  - D) decreases the force of a contraction and allows more  $\text{Ca}^{2+}$  to enter.
  - E) allows more  $\text{Ca}^{2+}$  to enter and increases the force of a contraction.

Answer: E

- 2 The importance of the plateau phase of the action potential of myocardial cells is in
- A) preventing overstretching of the cells.
  - B) enhancing the efficiency of oxygen use by the cells.
  - C) preventing tetanus.
  - D) preventing fibrillation.
  - E) regulating  $\text{Ca}^{2+}$  availability to the cells.

Answer: C

- 3 Myocardial cells can generate action potentials spontaneously because they have
- A) unstable ion channels.
  - B) permanently open channels for  $\text{Na}^+$  and  $\text{K}^+$ .
  - C) a net influx of  $\text{Na}^+$ .
  - D) L-type  $\text{Ca}^{2+}$  channels.
  - E) prolonged  $\text{Ca}^{2+}$  influx.

Answer: A



- 5 Electrical shock to the heart is usually used to treat
- A) ventricular fibrillation.
  - B) atrial fibrillation.
  - C) heart block.
  - D) heart murmur.
  - E) myocardial infarction.

Answer: A

- 6 ECGs
- A) provide direct information about the heart function.
  - B) are most useful in diagnosing heart murmurs.
  - C) show the summed electrical potentials generated by all cells of the heart.
  - D) have two major components: waves and nodes.
  - E) measure the mechanical activity of the heart.

Answer: C

- 7 A 65-year-old man had an EKG recorded at a local emergency room following a biking accident. His weight was 80 kg and his aortic blood pressure was 160/90 mm Hg. The QRS voltage was 0.5 mV in lead I and 1.5 mV in lead III. What is the QRS voltage in lead II? A) 0.5 mV
- B) 1.0 mV
  - C) 1.5 mV
  - D) 2.0 mV
  - E) 2.5 mV

Answer: D