1. Which of the following is the correct statement of Fourier slice theorem?
   a. The one dimensional Fourier transform of the projection data is equal to the two dimensional Fourier transform of the object absorption coefficient.
   b. The one dimensional Fourier transform of the projection data is equal to the two dimensional Fourier transform of the object absorption coefficient restricted to a line.
   c. The one dimensional Fourier transform of the projection data is equal to the one dimensional Fourier transform of the object absorption coefficient restricted to a line.
   d. Two dimensional Fourier transform of the sinogram is equal to the two dimensional Fourier transform of the object absorption coefficient.

Answer: b

2. After generating several action potentials, the resting membrane potential is changed due to the redistribution of sodium and potassium ions. Which of the following gates helps to restore the resting membrane potential to the usual value?
   a. Voltage gated sodium channels
   b. Voltage gated potassium channels
   c. Sodium-Potassium pump
   d. None.

Answer : c

3. The MRI signal equation is given by

$$s(t) = \int \int m(x, y) e^{-i\gamma B_0 t} e^{-i\gamma \int \Delta B(r,\tau) d\tau} dx dy$$

Which magnetic field is responsible for the spatially resolved information of the body available in the signal?

   a. The field induced using RF coil and B_0 only .

   b. The field B_0 only.

   c. The field ΔB.

   d. None

Answer : c

4. A clamp circuit is used for
   a. Keeping a constant potential across the cell membrane.
   b. Measuring the ECG from the chest
   c. Measuring the PPG signal.
   d. None
      Answer: a