جامعة بنها تاريخ الامتحان:2015/12/31

كلية العلوم- قسم الفيزياء المستوى الثالث والرابع (شعب البيولوجى)

نموذج اجابة لمقرر الفيزياء الحيوية

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Q1) put √ or X with correct the error [24 marks]

1- Right (X), it's not return to original position.
2- (X), because its causes polarization and produced potential on electrode leads to error in resting potential measurement.
3- (X), its isotonic
4- (X) Its transport by carrier protein.
5- (X), equation must be $\frac{dc}{dx} = \frac{1}{2} V_{max}$
6- $\frac{d\,c}{dl} = -\frac{dn}{dt}\left[\frac{1}{DA}\right]$

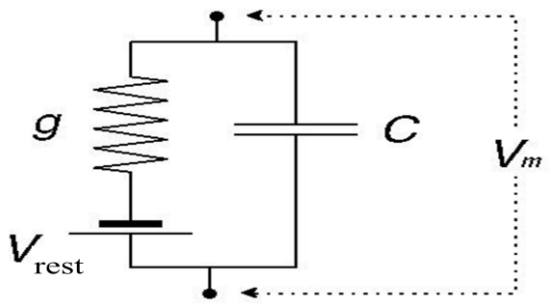
$$\frac{dc}{1m} = 6x10^{-14}\ Kgs^{-1}\ \frac{1}{(10.6\,x10^{-10})(3.14x\,(0.14m)^2)}$$

$$= 9.2x\ 10^{-4}\ Kg/m^4$$

7- (X), because the water moves due to osmoses processes
8- (X) , its contains a variety of biological molecules primarily proteins and lipids.
9- (X), its contacted with surrounding fluid.
10- (X) , its united in amplitude and duration.
11- **(X), phloem** of plant is a potential pathway.
12- (X), $ATP + H_2O \longrightarrow ADP + P + energy$

Q2) Choose the right answer: [24 marks]

1- (b) Toxic effect
2- **(**b) salt of anions
3- b) antiport pump
4- **a)** Roots
5- a) The same amplitude
6- b) Mitochondria
7- b) hypertonic
8- a) Symport pump
9- a) Non-Newtonian
10- **a)** $\frac{dn}{dt}$
11- **b) 2πr T**
12- **c) both them**
13- **c) cytoskeleton**
14- **a) Current intensity**
15- **b) cell membrane**
16- **c) decay population**
17- **a) positive**
18- **c) both them**
19- The studies on the living cell membrane, showed that it consists of double layer of lipids through which embedded a certain protein molecules, acted as ion channels through which the cell communicates with its external environment. Such structure makes the cell membrane to acquire very high resistance, "g". Since there are negative and positive charges at the inner and outer surface of the living cell membrane existing between two conducting media inside and outside the cell, then the cell membrane acts as a capacitor, C.



20- $R = V/I = 10x10^{-3} / 2x10^{-9} = 5x10^{6}\ \Omega$

$T = RC \quad , \quad C = T/R = 1x10^{-3} / 5x10^{6} = 0.2\ nF$