



مقرر: أساسيات الفيزياء الطبية كود المقرر: ٤٠٣٢٣٨٠-٤ برنامج: الفيزياء الطبية فرع: الطلبة أستاذ المادة: د/ رمضان علي حسن  
الاختبار: النهائي الفصل الدراسي: ٣٩١ الفترة: ٢ الزمن: ساعتان التاريخ: ١٤٤٠/٤/٩ قاعة: هـ ١٠٥  
اسم الطالب/ الرقم الجامعي/ الشعبة / الدرجة الكلية / 50 درجة

Please answer **five** questions only:

الرجاء الاجابة عن **خمسة** اسئلة فقط مما يلي

**Question One**

**[10 Marks]**

- A) Define; Isotopes – Sound.  
B) Discuss the Surface Potentials

**Question Two**

**[10 Marks]**

- A) Compare between sound and light waves. (In table please).  
B) Calculate the force on perpendicular shoulder, required to topple a person of mass 80 kg, standing with his feet spread 0.8 m apart & the foot shoulder distance 1.5 m. Assume the person does not slide and the weight of the person is equally distributed on both feet.

**Question Three**

**[10 Marks]**

- A) Discuss the cut-off method for blood pressure measurements.  
B) Calculate the pressure variation corresponding to a sound intensity of  $10^{-16} \text{W/cm}^2$ . (The density of air at  $0^\circ\text{C}$  and 1 atm pressure is  $1.29 \times 10^{-3} \text{g/cm}^3$ ; for the speed of sound use the value  $3.3 \times 10^4 \text{cm/sec}$ ).

**Question Four**

**[10 Marks]**

- A) What are the defects of eye vision and how it can be corrected...?  
B) Explain the radiotherapy methods...?

**Question Five** *Please answer true or false*

**[10 Marks]**

- a) The focusing of the eye (accommodation) is controlled by the eye lens.  
b) The magnitude of the impulsive force is proportional to the collision time.  
c) Most skeletal muscles in the body arrangement provides for greater speed of the limbs.  
d) Half-life is the time interval for all the original radionuclei to undergo 50% transmutation.  
e) The normal diastolic pressure is about 120 mm Hg and the systolic pressure is about 80 mm Hg.

رجاء بقية الاسئلة خلف الورقة

**Question Six** **Please choose the correct answer**

**[10 Marks]**

1. Inside the axon, the positive ions are mostly :

- a) Potassium ions      b) Chlorine ions      c) Charged organic molecules      d) Sodium ions

2. The magnitude of the frictional force depends on;

- a) coefficient of friction      b) body weight      c) The body mass      d) a & b

3. The decibel rating of the  $1.0 \times 10^{-7} \text{ W/cm}^2$  intensity of sound;

- a) 100000 dB      b) 60 dB      c) 90 dB      d) 40 dB

4. In action potential the volte decreases to about:

- a) 30 mV      b) -90 mV      c) -70 mV      d) 40 mV

5. Person has 1.8 m tall standing 1.5 m from the eye. then the height of the full image at the retina about; a) 16 mm      b) 1.27 cm      c) 1.79 cm      d) 1.24 cm

(مساعدتي بالتفصيل)