TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF PHYSICS

EXAMINATION FOR SOPHOMORES (2ND LEVEL) STUDENTS OF BIOCHEMISTRY & CHEMISTRY/ BIOCHEMISTRY

COURSE TITLE:	BIOPHYSICS		COURSE CODE:PH2292
DATE: 19-5-2018	TERM: SECOND	TOTAL ASSESSMENT MARKS: 50	TIME ALLOWED: 2 HOURS

ANSWER THE FOLLWING QUSTIONS:

1- Write on: (12 mark)

a) Radiations effects on living tissues, and

b) GM counters applications in medicine.

2- Explain: (12 mark)

a) Transitions of molecules in a nerve system,

b) Bioelectrical forces and an application.

3- Discuss: (12 mark)

a) An application of ultra=sound forces,

c) The effect of magnetic fields on blood cells,

(14 mark)

4- Write on:-

(a) The applications of nuclear radiation in medicine.

b) The VISION theory.

والله ولى التوفيق

EXAMINERS: Prof.Dr. G. FARAG & Prof. Dr. A. TAWFEK

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF PHYSICS		
	FINAL EXAM. FOR MATERIALSCIENCE(LEVELTWO)		
	COURSE TITLE: **Mechanical Properties**	COURSE CODE: MS2232	PHYSICS DEPARTMENT
DATE: 9/06/2018	SEMESTER:FIRST	TOTAL ASSESSMENT MARKS: 100	TIME: 2 HOURS

Answer the following questions:

Question [1]: [25Mark]

Write short notes about the following :

(a)-Energy of A Hooke's Law System, **(b)**-Resilience ,**(c)**-Tensile Strength, **(d)**-Toughness.

.....

Question [2]: [25Mark]

i-Explan the followhng: [15Mark]

Twinning dislocation , Plastic Deformations in Polycrystalline Metals and Strain hardening.

(ii)-Define: Ultimate tensile strength ,The yield strength, Homogeneous Strain, Biaxial stress and Schmid's Law. [10Marks]

.....

Question [3]: [25Mark]

(a)-Mention: Strain energy per unit volume- Relation between true stress and true strain, The critical resolved shear stress, Hall- Petch equation and Percent reduction in area. [15Mark]

(b)-Deduce Strain Energy in Dislocations. [10Marks]

.....

Question [4]: [25Mark]

1-A 8.00-cm cube of gelatin has its upper surface displaced 2.00 cm by a tangential force0.600 N. What is shear modulus of this substance?

2-Find the pressure necessary to change a volume of water by 2.0 percent. Express the pressure in terms of atmospheric pressure units 1 bar= 10^5 N/m^2. B= 3.2 x 10^9 N/m^2.

3-A steel bar 8.00 m long and with rectangular cross section of 5.00 cm x 2.50 cm supports a mass of 3000 kg. How much is the bar stretched? Where Y for steel is 20.0 x 10^{10} N/m^2.

==========

Examiner	Dr. Samy El-Attar.

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF PHYSICS			
	COURSE TITLE:	ENERGY PHYSICS EXAM		COURSE CODE : PH2232
DATE:	JUNE, 2018	TREM: SECOND	TOTAL ASSESSMENT MARK: 100	TIME ALLOWED: 2 HOURS

- **Answer the following questions:**

1. a. Define the following physical terms using units whenever possible:

"Energy", "work done", "electrical energy", "mechanical energy", "power", "efficiency", "perfect black body", "Uranium critical mass", "electric current", and "binding energy of the nucleus" . [20 Marks]

b. Discuss the energy changes in the movement of the simple pendulum. [5 Marks]

2. a. Compare between the two laws of thermodynamics. [10 Marks]

b. Discuss the characteristics of electrical energy. [10 Marks]

c. Prove that $J = C V$ [5 Marks]

3. a. Discuss the disadvantages of conventional energy resources. [5 Marks]

b. Explain the relation between the nuclear forces and the binding energy of the nucleus. [10 Marks]

c. Compare between the fission and fusion nuclear reactions. Give equations and comment on the resulting energy in both cases. [10 Marks]

4. a. Draw a schematic diagram to describe the conversion of solar energy to thermal energy. [10 Marks]

b. Discuss two schematic diagrams to describe how to utilize wind energy and biomass. [10 Marks]

c. Discuss the necessity of "Energy Conservation" in order to develop our country. [5 Marks]