 TANTA UNIVERSITY	FACULTY OF SCIENCE DEPARTMENT OF PHYSICS			
	EXAMINATION FOR SENIORS ((FOURTH YEAR) STUDENTS OF BIOPHYSICS			
	COURSE TITLE:	ENVIRONMENTAL BIOPHYSICS I		COURSE CODE: BP4178
DATE:	23\12\2017	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 H

ANSWER THE FOLLOWING QUESTIONS

Q1) (25 Marks)

A) What are the four ways that can be used to extend the lifetime of non-renewable resources?

(5 Marks)

B) Define the dry adiabatic lapse rate. What is the difference between sub-adiabatic and super-adiabatic lapse rates?

(10 Marks)

C) Write about the possible hazards of electromagnetic radiation on human health.

(10 Marks)

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Q2) (25 Marks)

A) What are the factors that determine the way we can deal with pollution?

(5 Marks)

B) Write about the sources of water pollution.

(10 Marks)

C) Explain how greenhouse gases can be both useful and harmful.

(10 Marks)

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Q3) (25 Marks)

A) Mention some of the ways that can be followed to reduce or prevent indoor air pollution.

(5 Marks)

B) What is the nuclear stability? How beta emitters correlate with the stability line?

(10 Marks)

C) If the normal atmospheric lapse rate is $-10^{\circ}\text{C}/\text{Km}$, What is the air temperature at 3Km when the surface temperature at sea level is 18°C . There is an inversion of the normal lapse rate between 1000m and 2000m.

(10 Marks)

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Q4) CHOOSE THE CORRECT ANSWER (25 Marks, 2.5 Marks each)

1) Air parcels that float in the atmosphere (neither rising nor sinking) have:

- A) Higher temperature than the surroundings
- B) Lower air density than the surroundings
- C) lost some heat because they have just risen some distance
- D) Same temperature as the surroundings

2) Which of the following is a greenhouse gas?


- A) Argon
- C) Carbon Dioxide

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انظر باقي الأسئلة خلف الصفحة

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	TANTA UNIVERSITY- Faculty of Science -Department of physics			
	Resit EXAMINATION FOR SENIORS STUDENTS OF BIOPHYSICS (4 TH LEVEL)			
	COURSE TITLE:	Radiation Treatment Planning		COURSE CODE:BP4171
DATE:	30 DECEMBER. 2017	TERM: FIRST	TOTAL ASSESSMENT MARKS:100	TIME ALLOWED: 2 HOURS

ANSWER THE FOLLOWING QUESTIONS:

1- Discuss:

(25 Deg.)

- (a) The methods for calibration the irradiation system.
- (b) Calculate the treatment DOSE.

2- Explain the Physical basis of: -

(25 Deg.)

- (a) Modes for electron, and Hard x-ray irradiation systems, and
- (b) The benefits for treating cancer, using them.

3- Show how you can make a qualified treatment plan, for :-

(25 Deg.)

- (a) Surface tumors, and
- (b) Deep seated tumors.

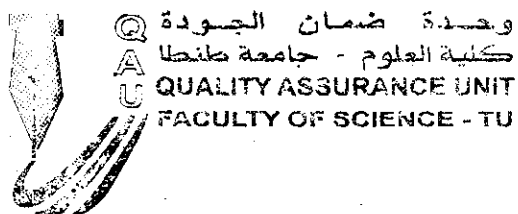
4- Write a short note for :-

(25 Deg.)


- (a) The component of irradiation room.
- (b) Correction for oblique incident and wedge filters.
- (c) The advantage and disadvantage for isocentric and fixed machines for treatment cancers.

والله ولي التوفيق

EXAMINERS	PROF. DR. KH. OMAR	PROF. DR. G. Z. FARAG
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	TANTA UNIVERSITY- Faculty of Science -Department of Physics			
	EXAM FOR SENIORS STUDENTS OF PHYSICS			
	COURSE TITLE:	Physical Electronics		COURSE CODE: PH4113
DATE:	3-1-2018	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions:

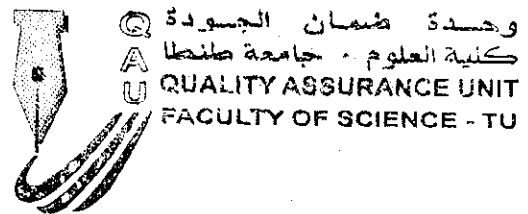
- 1- A- Write short notes about the Czochralski method and the liquid-encapsulated Czochralski (LEC) method too? (20 Marks)


- 2- Which statement is right and which one is wrong? If wrong how the right statement should be written? (20 Marks)
 - A- The two-element (*binary*) I-II compounds such as GaN, GaP, and GaAs are common in light-emitting diodes (LEDs). (I and II represent the first and second column in the periodic table.
 - B- One of the less important characteristics of a semiconductor, is its *energy band gap*.
 - C- For example, GaP has a band gap of about 2.3 eV, corresponding to wavelengths in the red portion of the spectrum.
 - D- The electronic and optical properties of semiconductor materials are strongly affected by impurities, which may be added in precisely controlled amounts. This process is called (sintering).
 - E- The periodicity in a crystal is defined in terms of a symmetric array of points in space called the (symmetry).
 - F- The basic crystal structure for many important semiconductors is the fcc lattice with a basis of three atoms, giving rise to the *diamond* structure, characteristic of Si, Ge, and C in the diamond form.
 - G- The diamond structure can be thought of as an fcc lattice with an extra atom placed at $a/4 + b/4 + c/4$ from each of the fcc atoms.
 - H- Si and GaAs have indirect and direct energy gaps but this does not affect their use in practical devices.
 - I- The four sp^3 "hybridized" orbitals, point symmetrically in space and lead to the diamond lattice in Si.
 - J- These "non-directed" chemical bonds are responsible for the tetragonal diamond or zinc blende lattice structure in most semiconductors.

- 3- A- In Czochralski crystal growth, the shape of the ingot is determined by a combination of two factors, what are these factors? (10 Marks)
- B- What are the factors upon which the distribution coefficient does depend? (10 Marks)
- 4- Summarize the steps of manufacturing Si wafers. (20 Marks)
- 5- A - Write short notes about vapor phase epitaxy. (10 Marks)
- B- Deduce the total current due to both drift and diffusion of n and p charge carriers in a semiconductor. (10 Marks)

EXAMINER	PROF. DR. SAMIA AHMED SAAFAN
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☺ BEST WISHES ☺



	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF PHYSICS		
	FINAL EXAMINATION OF 4 TH YEAR PHYSICS STUDENTS		
COURSE TITLE:	Astronomy I		COURSE CODE: PH 4103
6/1/2018	TERM: FINAL	TOTAL ASSESSMENT MARKS:100	TIME ALLOWED: 2 HOURS

Answer the following questions:

First question:- (20 Marks)

-Put true or false and correct the false one(s):

1. Jupiter emits less energy than it receives from the Sun.
2. Venus is a victim of a runaway greenhouse effect
3. Earth's core temperature is comparable to the surface temperature of the Sun.
4. Earth's magnetic field is the result of our planet's large, permanently magnetized iron core.
5. Mars has strong magnetic field.
6. Europa is one of the Mercury largest moons.
7. Craters on the Moon and Mercury are primarily the result of volcanic activity.
8. Compared with Earth, Venus is about the same size.
9. Titan is the largest moon of Mars.
10. Mercury's solar day is longer than its solar year.

Second question: - (30 Marks)

Explain briefly (few lines for each):

1. What causes the colors in Jupiter's atmosphere.
2. How the Moon produces tides in Earth's oceans.
3. What is the most accepted theory of the Moon origin from your point of view ? and why?


Third question:- (25 Marks)

1. Explain the Nebular Contraction theory and Planetary Condensation.
2. Give a brief description of Earth's magnetosphere and explain what will happen to Earth if it does not exist.

Fourth question:- (25 Marks)

1. What is the greenhouse effect, and what effect does it have on Earth's surface temperature?
2. Compare between terrestrial and jovian planets?

(Best wishes ----- Dr. Yasser Abdou)

	TANTA UNIVERSITY- Faculty of Science - Department of Physics			
	EXAM FOR 4 TH YEAR STUDENTS			
COURSE TITLE:	Detectors and Accelerator Physics		COURSE CODE: PH4163	
DATE:	14 JAN 2017	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions

Question one (30 points)

A- If a proton has a total energy of 1 TeV, what is its value of β ?

(Hint: $m_p = 1.673 \times 10^{-30}$ g)

B- Put (✓) or (x) and then discuss why you choose your answer:

- 1- The detector efficiency can be classified into two types of efficiency
- 2- The advantage of ionization chamber detectors is their dead time
- 3- There are three possibilities for the wall effect in the BF_3 tube
- 4- The overall gain of a PM depends on the secondary emission factor δ only
- 5- The linearity of a PM depends strongly on the type of dynode configuration and the current in the tube only.
- 6- A high capacitance and a high frequency reduce the current dependence in the Cockcroft-Walton generator
- 7- Cyclotron is reasonable for accelerating electrons to high energies
- 8- In Betatron, the maximum energy for electrons is 300 MeV
- 9- In synchrotrons, focusing magnets are used.
- 10- The advantage of SSB detectors is their sensitivity to light
- 11- The length of the tube is the same in Wideroe's tube

Please turn the page for the other questions