حيولوجيا، ... ، حيولوجيا حيميا، جيوفيزيا ... حيولوجي

1) Write short notes <u>on Five</u> of the following questions. Illustrate your answers with clear drawings and give examples:

    A. Mixed chambers arrangement of test. <u>(Five only)</u>   (10 Marks)

    B. Shape of the apertures in Foraminifera <u>(Five only)</u>   (10 Marks)

    C. Mode of coiling in foraminifera   (10 Marks)

    D. Sutures in Foraminifera.   (10 Marks)

    E. Dimorphism in Foraminifera.   (10 Marks)

    F. Application of Foraminifera   (10 Marks)

<u>2) Give Examples:</u>   (15 Marks)

    A. Biumbonate test.

    B. Surface ornamentation.

    C. Lobulate periphery.

3) Explain in details the factors controlling the distribution of foraminifera. (20 Marks)

<u>**4) Choose the correct answer of the following questions:**</u> (15 Marks)

1. Microfossils are generally excellent indicators of
    a) Tectonics   b) Earthquake   c) paleoecology   d) Paleogeography

2. Foraminifera is
    a) Unicellular animal b) Unicellular plant c) Multicellular animal d) Multicellular plant

3. Agglutinated foraminiferal test is formed of
    a) Calcareous wall   b) Siliceous wall   c) Chitineous Walls d) coarse/fine cemented particles

4. Porcelaneous foraminiferal test is:
    a) Perforate   b) semiperforate   c) imperforate   d) non-perforate

5. Unilocular foraminiferal test is
    a) septate   b) non septate   c) simply septate   d) limbate

Best wishes

Examiners	Prof. Mahmoud Faris Mohamed	Prof. Abdelfattah Ali Zalat
	Prof. Akmal Marzouk	

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY			
	EXAMINATION For the Second Level of Chemistry-Geology Students			
	COURSE TITLE	Optical Mineralogy		COURSE CODE: 2105
			TOTAL ASSESSMENT MARKS :100	TIME ALLOWED: 2 hrs.
DATE:	22/1/ 2017	Final Exam		

Answer the following questions. Illustrate your answer.

1. Explain WHY and/or HOW? (30 marks)

a. Absent of 2V angle in uniaxial interference figures.
b. Interference figure can be differentiated between isotropic minerals and pseudo-isotropic ones.
c. Transparent calcite rhomb displays double refraction.
d. Intereference figures display intensity of bireferengce.
e. Pleochroism is absent seen in some colored minerals.

2. Refractive indices display an important role in almost optical properties of the minerals. Explain how and why? (20 marks)

3. State whether the following statements are _True of False_ and correct the false one? (30 marks)

a. Optic axis is obtained by sections cut normal to the C-axis of uniaxial minerals.
b. The parallel sections of tetragonal minerals give the lowest optical properties.
c. Isogyres in interference figures are formed due to extinction position.
d. All uniaxial interference figures have the same optical behavior, at rotation of the microscopic stage.
e. Anomalous interference colors is most common property in isotropic minerals.
f. Zoning is characteristic optical feature of quartz and biotite.

4. Sketch and label three types of uniaxial interference figures showing their relations to its indicatrix. (20 marks)

Wishing Success for the ALL

Examiner: Prof. Mohamed Th. S. Heikal

TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF GEOLOGY

EXAMINATION FOR SOPHOMORE STUDENTS OF GEOPHYSICS

		COURSECODE: GP2109
COURSE TITLE:	Radioactivity and Geothermometry	
DATE: 15 JAN, 2017	**SEMESTER:** FIRST	**TOTAL ASSESSMENT MARKS:** 100	**TIME ALLOWED** 2 HOURS

Answer the following questions (Sketch maps and diagrams should be drawn whenever pos
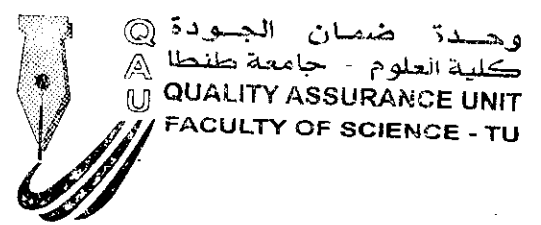
Part I: Radioactivity   (60 Minutes, Total Marks 50)

1) Enumerate and describe the following: (20marks)

   a) Two types of Spectrometers.

   b) Types of radiation.

2) Illustrate the airborne gamma-ray spectrometric survey.   (10marks)

3) What are the radioactive minerals?   (10marks)

4) Discuss the radioactive decay processes.   (10marks)

Part II: Geothermometry   (60 Minutes, Total Marks 50)

1- What are the meaning of heat and temperature and discuss their transfer processes.   (10 Marks)

2- Discuss how tectonic setting and rock types affecting the depth of partial melting zone in the continental areas.   (15 Marks)

3- Write short notes on sources of the heat in the earth.   (10 Marks)

4- Write on the followings: -   (15 Marks)

   a- Thermal capacity.

   b- Thermal system in the seas and oceans.

   c- Vertical temperature change upward in the atmosphere.

EXAMINERS	PROF. SHADIA T. ELKHODARY	PROF. ZENHOM E. SALEM

ل حيرولوجيا/حيرولوجيا (حيووبز ٤

Answer the following questions (Illustrate your answer with drawing):

Question 1: (20 Marks)
Discus briefly the subsurface stratigraphic procedures.

Question 2: (20 Marks)
State and explain the law of Faunal Succession and the Inclusion Principle.

Question 3: Write briefly about: (20 Marks)
a – Maastrichtian Age.
b – Angular unconformity.

Question 4: Complete the following: (20 Marks)
a- Phanerozoic .... is subdivided into ...., ... and .... Ears.
b- Sequence stratigraphy is a branch of stratigraphy that ....
c- .... are the longest divisions of geologic time, while ...... are the smallest ones.
d- Chronostratigraphy is the branch of stratigraphy that studies the .... , not the ...., age of rock strata.
e- Permian is the latest period of the .... Era, while .... is the earliest period of the Mesozoic Era.

Question 5: (20 Marks)
Match the number of the term or concepts in Column 1 with the letter of the correct definition in Column 2.

1- Precambrian	a- Using fossils to determine age
2- Absolute age	b- Sediments on igneous or metamorphic rocks
3- Uniformitarianism	c- Last occurrence of a species
4- Bed	d- Fining Upwards Sequence
5- Extinction	e- Present is the key to the past
.6- Relative dating	f- Based on half lives of radioactive decay
7- Regression	g. Older than 560 million years
8- Transgression	h. Basic unit of stratigraphy
9- Nonconformity	i- Epoch do we live in
10- Holocene	j- More landward facies overlie more basin-ward facies

Best wishes

Examiners	Prof. Dr. H. Khalil	Dr. M. Sobhy

TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF GEOLOGY

| EXAMINATION IN GEOPHYSICS FOR 3-LEVEL STUDENTS,SPECIALGEOPHYSICS			
COURSE TITLE:	" ELECTROMAGNETIC METHOD -1 "		CODE: GP2208
DATE: /12 / 2016	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLAWED:2 HOR

Answer **ONLY FOUR** Questions: Marks

1-Write about the physical properties of the Electromagnetic Field(EMF).(25).

2-Write – with drawing – about the composition of the Electromagnetic

Radiation (EMR).--(25).

3-What are the physical properties of Visible radiation waves and

Ultraviolet radiation.--(25).

4-What are you know about the Ground Penetrating Radar;

(composition and waves).--(25).

5- Define the followings:

a)Ground Penetrating Radar " Trace ".-------------------------------------(12.5)

b)Relation between the frequency, wavelength and photon energy.-----(12.5).

EXAMINER:

PROF.DR. / MOHAMED REFAAT SOLIMAN
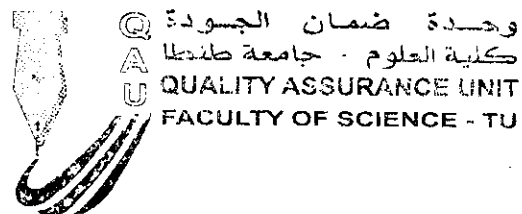
Answer of the following questions:-

Question 1: Discuss:-

a) Seismic waves   *(20 degree)*
b) Young's and Bulk modulus,   *(10 degree)*
c) Stress and strain   *(10 degree)*

Question 2: Write about the followings: (Illustrate your answer).

1- Wave Terminology and Velocities in Igneous and Metamorphic Rocks   *(20 degree)*
2- Attenuation of seismic energy (Illustrate your answer).   *(20 degree*

Question 3: Put (√) in front of the write sentence and (X) in front of the wrong sentence and correct the wrong one.   *14 degree)*

A)   Primary waves are the slowest seismic waves   ( )
B)   Surface waves are not the most damaging seismic waves   ( )
C)   Bulk modulus is the ratio between the longitudinal stres˥   ˥inal strain   ( )
D)   Seismic rays are defined as thin pencils of seismic ˊ   ˄ng ray paths
     that, in isotropic media, are everywhere perpˊ   ( )
E)   Stress is the force (per unit area) associ˥   ( )
F)   Strain is the deformation (per unit ˈ   ( )
G)   Elastic stain is reversible   ( )

Question 4: Choose the   *'6 degree)*

A) Seismic waves ɩ

1- Mapping the intɩ
2- Detection of contɩ
3- Finding prospectivɩ
4- All the previous

B) Sound is a ....

1- Longitudinal
2- Secondary
3- Surface
4- Love

C) The arrival times of seismic ˌ

1- Seismograph.
2- Seismometer.
3- Seismogram.
4- Accelograph

Wi.

EXAMINER   DR. Kʰ

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	TANTA UNIVERSITY- Faculty of Science -Department of Physics	
	EXAM FOR LEVEL TWO STUDENTS OF BIO- AND GEOPHYSICS	
COURSE TITLE	Electromagnetism	COURSE CODE:2184
DATE: 3- 1 - 2017	TERM: SECOND	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

First Question:

I) The vector from the origin to point A is given as $6a_x - 2a_y - 4a_z$, and the unit vector directed from the origin toward point B is $\left(\frac{2}{3}, -\frac{2}{3}, \frac{1}{3}\right)$. If points A and B are 10 units apart, find the coordinates of point B. **[10marks]**

II) Express the vector field $D = \frac{xa_x + ya_y}{x^2 + y^2}$ in cylindrical components and cylindrical variable.

[10marks]

Second Question:

-Point charges of 50nC each are located at A (1, 0, 0), B (-1, 0, 0), C (0, 1, 0) and D (0, -1, 0) in free space. Find

I) The total force on the charge at point A. **[10marks]**
II) The electric field at point P (0, 0, 1). **[10marks]**
III) The electric potential at point P(0, 0, 1). **[10marks]**

Third Question:

I) Deduce the electric field of an infinite charged conducting sheet having a uniform density of ρ_s C/m^2. If a second infinite charged conducting sheet, having a negative charge density $-\rho_s$ C/m^2, is located at distance $x = a$ from the first, find the total field in the region inside and outside the two conducting sheets. **[10marks]**

II) Given the potential field, $V = \frac{100}{Z^2 + 1} \rho \cos\varphi\left(V\right)$ and point P (ρ=3m, φ = 60°, Z=2m). Find the numerical values at P for **[15marks]**

(a) The potential
(b) The electric field intensity E
(c) The direction of E
(d) The electric flux density D
(f) The volume charge density ρ_v.

Fourth Question:

I) Deduce the equation of potential field V at point P in free space around an electric dipole which is consisting of two charges $(+Q)$ $and(-Q)$ separated by distance(d), and then prove that the electric field$E$of the electric dipole at point P is $\frac{Qd}{4\pi\epsilon_0 r^3}(2\cos\theta\, a_r + \sin\theta\, a_\theta)$. **[15marks]**

II) Prove that the electric field vector equals exactly the gradient of electric potential $(E = -\nabla V)$.

[10marks]

EXAMINER	DR. REDA EL-SHATER

☺ BEST WISHES ☺

TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF GEOLOGY

FINAL EXAMINATION FOR SOPHOMORE STUDENTS OF GEOPHYSICS

1969	COURSE TITLE:	Magnetic Methods(1)		COURSE CODE:GP2107
DATE:	5 JANUARY 2017	TERM: FIRST	TOTAL ASSESSMENT MARKS:100	TIME ALLOWED: 2 HOURS

Answer the following questions (Sketch maps and diagrams should be drawn whenever possible).

Question 1: Name and describe the following:- (40marks)

   a) Different types of magnetic susceptibility.

   b) Removing and correction of magnetic variations of the earth magnetic field.

   c) Main features of the geomagnetic field.

   d) Magnetic minerals.

Question2: Put (√) in front of the write sentence and (X) in front of the wrong sentence and correct the wrong one:-
(10 marks)

A) Field Lines are set of lines drawn parallel to the magnetic force ( )

B) Magnetic permeability describes how receptive a material is developing a magnetic field in the presence of a magnetic field ( )

C) Both gravity and magnetic of the earth vary with time and location ( )

D) Magnetic gradiometers are employed in surveys of shallow magnetic features. ( )

E) Remnant magnetization is acquired magnetism through exposing to external field ( )

F) Every electric current generates a magnetic field in a plane perpendicular to it ( )

Question 3: Explain the shape of the magnetized sphere at the North Pole and equator and how could you calculate its depth. (20marks)

Question 4: Write about the followings: (20marks)

   a) Optically pumped magnetometer.

   b) Ground magnetic surveys.

Question 5. Give the correct term for each for questions: (10marks)

   a) The lines around a magnet showing the force exerted on e.g. iron filings.

   b) The area around a magnet where other magnets experience a force.

   c) The interaction between a north and South Pole.

   d) Direction of a magnetic field.

   e) Part of the Earth's magnetic field generated by deep (outer core) sources.

Good Luck

EXAMINERS	PROF.MOHAMED R. SOLIMAN	PROF. SHADIA T. ELKHODARY

TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY			
FINAL EXAMINATION FOR SOPHOMORE STUDENTS OF GEOPHYSICS			
COURSE TITLE:	Electrical Methods(1)		COURSE CODE:GP2105
DATE: 10 JANUARY 2017	TERM: FIRST	TOTAL ASSESSMENT MARKS:100	TIME ALLOWED: 2 HOURS

Answer the following questions (Sketch maps and diagrams should be drawn whenever possible).

Question 1: *Name and describe the following:-*

1- *Factors which control the resistivity of earth materials.* *(15 degrees)*

2- *Representative resistivity values.* *(15 degrees)*

3- *Electrode Arrangements and Field Procedures of resistivity method.* *(15 degrees)*

Question 2: *Give the correct term for each of the following:* *(10 degrees)*

1) *In metals, the electrons can move with relative ease through the material.*

2) *The amount of electric charge that passes any point in the circuit in 1 second.*

3) *The resistance per unit volume.*

4) *Ability to store charge.*

5) *Electrical moment per unit volume.*

Question 3: *Write about the followings:*

a) *Field Procedures of induced polarization method.* *(10 degrees)*

b) *Electrical properties of rocks and minerals.* *(15 degrees)*

c) *Use of electrical prospecting for oil exploration.* *(10 degrees)*

Question 4: *Put (√) in front of the write sentence and (X) in front of the wrong sentence and correct the wrong one* *(10 degree)*

A) *Electrical active methods depend on natural occurring fields for electrical measurements.* ( )

B) *Geometric factor that depends on the arrangement of the four electrodes.* ( )

C) *In uniform ground only about 40% of the current penetrates below a depth equal to the separation of the electrodes.* ( )

D) *Types of resistivity survey are horizontal sounding, profiling and 2D imaging.* ( )

E) *Archie law known as.* $\rho_c = a \; \emptyset^{-m} \; s^{-2} \; \rho_w$ ( )

Good Luck

EXAMINER	PROF.SHADIA TAHA ELKHODARY