FACULTY OF SCIENCE
ASSIUT UNIVERSITY

Final Exam on Geological Hazards and Disasters (PG302)
(50 marks total)

May: 2018 Time: 2 hours

Write on only Five of the followings: (Ten marks each)

1. **Earthquake nomenclature**
2. **The classification of Earth movements**
3. **The benefits of risk assessment**
4. **Different types of volcanos**
5. **The Monte Carlo simulation used in frequency assessment and presentation and its benefits and weaknesses**
6. **Classification of landslides**
7. **The main four elements of risk assessment process**
8. **The different hazard identification methods**
9. **The different frequency assessment methods**
10. **The risk assessment limitations and potential**

Good Luck…….. **Prof. Dr. Gamal Zidan AbdelAal**

Geology Department **Faculty of Science** **Assiut University**		**Time: 2 Hours** **May 2018**

Second Semester Final Examination
Subject: Marine Geology (326)
Students: 3rd level of Petroleum Geology

==========

Answer only <u>FIVE</u> questions out of the following

1. Discuss in detail the different types of plate boundaries (5 marks).

2- Pelagic sediments consist of..... (5 Marks):
a. reddish-brown clays derived from the continents (1 mark).
b. foraminiferal oozes (1 mark). c. silica oozes (1 mark).
d. all of these (1 mark). e. none of the above (1 mark).

3. Write short notes on the following items (5 Marks):
a. carbonate compensation depth (CCD) (1.5 marks).
b. turbidity currents (2 marks).
A. cosmogenous sediment (1.5 marks).

4. Turbidity current is a type of (5 Marks):
a. deep current (1 mark). b. steep current (1 mark).
c. long current (1 mark). d. short current (1 mark).
e. none of the above (1 mark).

5. Write short notes on the following items (5 Marks):
a. continental shelf (1.5 marks).
b. coral reef development (2 marks).
B. continental rises (1. 5 marks).

6- Large fan-shaped deposits of fine-grained sediments that accumulate on the continental rise are called (5 Marks):
a. submarine fans (1 mark).
b. atolls (1 mark).
c. alluvial fans (1 mark).
d. spits (1 mark).
e. trenches (1 mark).

****

Good Luck

Dr. Abdalla El Ayyat

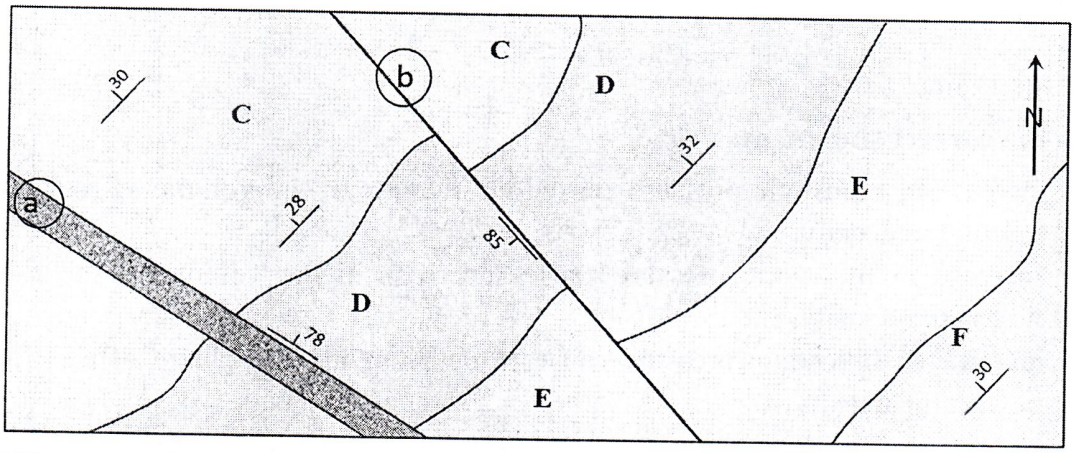
6- An overturned fold is characterized by _____. *(2 mark)*

a. two limbs at right angles to one another
b. two limbs dipping in the same direction - with one tilted beyond vertical
c. two limbs dipping in opposite directions
d. two limbs not parallel to each other

7- Match the following and then explain that by drawing *(4 marks)*

1. Hade	a. Vertical dip slip component.
2. Throw.	b. Total displacement.
3. Heave.	c. Angle between fault plane and vertical plane.
4. Net slip.	d. Horizontal dip slip component.

8- In the geologic map below, units A, B, C and D represent sedimentary beds. *(5 marks)*



a- What type of structure is shown on the map?
b- Which of these beds is the oldest?
c- What is "a" and what is its attitude?
d- What is "b" and what is its attitude?
e- Which of these terms applies to "b": "left lateral" or "right lateral"?

II- Write briefly on

9- The differences between Joint and fault. Mention the different types of movements along the faults. Give examples. *(9 mark)*

III- Write short notes on TWO ONLY: *(10marks)*

10- Non-Tectonic Structures.

11-The difference between sinistral and dextral wrench faults.

12- Indirect Folding

IV- Define and illustrate by drawings FIVE ONLY: *(10 marks)*

13- Columnar joints - homogeneous strain – cross bedding - structural terrace - Vergence angle - Monoclines.

GOOD LUCK

Pro.Dr. Ahmed R. El Younsy

جامعة أسيوط
كلية العلـــوم-قسم الجيولوجيا

امتحان طلاب المستوى الثالث (كيمياء وجيولوجيا)
مقرر (٣٤٥ ج) مبادئ الجيولوجيا التركيبية

الزمن : ٢ ساعة

مايو ٢٠١٨م

PRINCIPALS OF STRUCTURAL GEOLOGY

(50 marks)

Try to illustrate your answers with suitable drawings when possible

ANSWER THE FOLLOWING FOUR QUESTIONS:

I- Choose the correct answer for the following statements and

Then rewrite in your answer paper

1- Rock units recover their original shape after the stress is released in folding. *(2 mark)*

a. Fracture strain.
b. Plastic strain.
c. Elastic strain.

2- Mark the correct statement: *(2 mark)*

a. An increase in lithostatic pressure caused an increase in the volume of rocks and an increase in the density.
b. An increase in lithostatic pressure causes decrease in the volume of rocks but an increase in the density.
c. An increase in lithostatic pressure causes a decrease in the volume of rocks but an decrease in the density.
d. An increase in lithostatic pressure causes no effect on the volume of rocks and in the density.

3- Choose the correct statement: *(2 mark)*

a. Vertical faults have a footwall in down throw side and hanging wall in upthrow side.
b. Vertical faults have a hanging wall in down throw side and foot wall in down throw side.
c. Vertical faults have neither a footwall nor a hanging wall.
d. All the statements are wrong.

4- The line of maximum curvature in a fold is known as: *(2 mark)*

a. Crest.
b. Axis.
c. Hinge.
d. Trough.

5- Drag folds: *(2 mark)*

a. Occur within the competent beds.
b. Within the competent beds.
c. Within the incompetent beds are overlain by competent beds.
d. When vertical stresses act on horizontal beds.

بسم الله الرحمن الرحيم

University of Assiut
Faculty of Science
Department of Geology

3rd Level Examination for Geology, Geophysics and Geochemistry students
In Field Geology (306G)

Time: Two Hours **50 Marks** **May, 2018**

ملحوظة هامة: الأمتحان يتكون من صفحتين

Answer the following questions:

First Question: Choose the correct answer: (10 Marks)

i- Sedimentary rock made from fossils are called.....
a- clastic b- chemical c- organic d- eveporites

ii- What is the main way of rocks classification?
a- Their color and shapes b- How they form c- Where they form d- Mineral bands

iii- In which of the following environments would you expect to find symmetrical ripples?
a- alluvial b- beach c- deep-sea d- desert

iv- The term Aeolian refers to transport and deposition by.....
a- winds b- streams c- ocean waves d- ocean currents

v- Mud cracks are common in which type of sedimentary rocks?
a- medium grained b- fine grained c- coarse grained d- all of these

vi- The bedding involving crater shaped depressions is.....
a- mud cracks b- ripple marks c- rain prints d- sun cracks

vii- Graded bed forms due to .....
a- wind settling b- sunlight c- gravitational settling d- loading

viii- Each layer of a laminated structure of sedimentary rock is called
a- stratum b- leaf c- lamina d- layer

ix- Most important feature of a sedimentary rock is.....
a- kind b- size c- stratification d- composition

x- Which statment is a trace fossil?
a- carbon film of an extinct plant b- woolly mammoth's footprint
c- dinosaur bone preserved in rock d- all of these

Second Question (10 Marks)

i- Describe the uses of one only of the following instruments:
a- Branton Cammpass b- Total station (4 Marks)

ii- Define only three of the following geologic structures, illustrating your answer by drawing:
a- Load casts b- Pillow lavas c- Basaltic joints d- Styllolites (6 Marks)

Third Questioin (15 Marks)

Redraw the below two field photos and write an essay on the geologic structures present in these photos.

Photo: 1

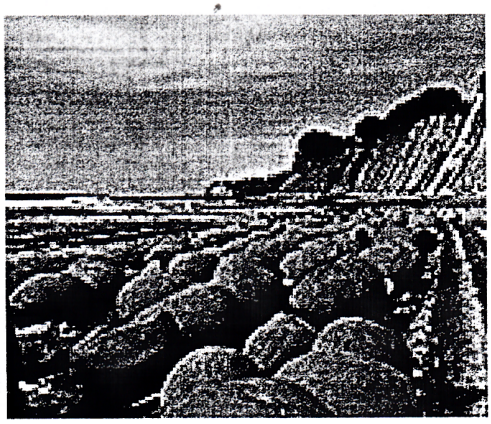


Photo: 2

Fourth Questioin (15 Marks)

i- Discuss the nature of contacts in the below four field photos. (10 Marks)

Photo: 1

Photo: 2

Photo: 3

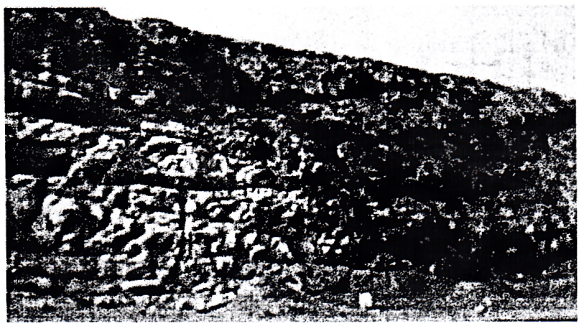


Photo: 4

ii- Summerize the faults criteria, illustrate your answer by sketching. (5 Marks)

---------- ***GOOD LUCK*** ----------

Prof. Dr. Nageh A. Obaidalla

Assiut University -Faculty of Science Geology Department		جامعة أسـيوط -كلية العلوم قسم الجيولوجيا

2nd Semester- Final Examination Course No. PG332 (Organic Geochemistry)

Third year Students (Petroleum Program) Date: May, 17, 2018

Time allowed: Two hours

Examiner: Prof. Dr. Mamdouh F. Soliman

==========

Answer only four from the following: 12.5 marks for each question

==========

1- **Discuss briefly the factors affecting the preservation of organic matter in marine sediments.**

2- Bacteria can use oxygen from the overlying water or interstitial water to "oxidize" organic matter (OM). **Discuss the oxidation of Organic matter by bacteria in oxic, suboxic and anoxic environments.**

3- **Write On:**

A-The coalification stage of coal evolution

A- Carbon cycle

4-

A- Process of hydrocarbon generation involves three stages of organic matter alteration. **Discuss the catagenesis stage of organic matter alteration.**

B- What is the Rock-Eval pyrolysis

5- **Write On:**

A- Physical and chemical properties of Natural Gas

B- Organic macerals of source rocks evaluation

انتهت الأسئلة

مع أطيب الأمنيات بالتوفيق

أ.د/ ممدوح فراج سليمان

جامعة اسيوط
كلية العلوم- قسم الجيولوجيا

امتحان مادة مبادئ علم الصخور (٣٢٤ج)
الفصل الدراسى الثانى - العام الجامعى ٢٠١٧/٢٠١٨
المستوى الثالث (جيوفيزياء و كيمياء-حيولوجيا) الزمن ثلاث ساعات

ملاحظة: الامتحان فى صفحتين

Part one (Igneous rocks)

Answer Three questions only of the following (16.5M)

Q1 (5.5 M)

i- Define the term A-type granitoids and explain the main characteristics of those rocks?

ii- Write on the importance of color index of igneous rocks?

Q2 (5.5 M)

i- Decribe the main features of those rock types: peraluminous granites, kimberlite, lamprophyre, carbonatite?

ii- Silica content influences magma's behavior. Comment?

Q3 (5.5 M)

i. Write briefly on the composition and viscosity of magmas and lavas?

ii. What does it mean term ophiolite?

Q4 (5.5 M)

i- Draw a ternary diagram illustrating the classification of pyroclastic igneous rocks?

ii- Explain the eruption mechanism of both columns and tephra falls?

Part two (Metamorphic rocks)

Answer Three questions only of the following (16.5M)

Q1 (5.5 M)

i- Discuss the role of pressure during metamorphism?

ii- Mention the various types of foliation?

Q2 (5.5 M)

i- Compare between contact metamorphism and regional metamorphism?

ii- Start with a shale and then hit it with heat and pressure?

Q3 (5.5 M)

i- Describe the main features of these rock types: greenstone, amphibolite, serpentinite, granofels, hornfels?

ii- Compare between partial melting during metamorphism and shock metamorphism?

Q4 (5.5 M)

i- Write briefly on non-foliated metamorphic rocks with examples?

ii- Explain the role of fluids and time during metamorphism?

أنظر خلفة

أ.د. جلال الحباك تمت الاسئلة وبالتوفيق

Part three (Sedimentary rocks)

Answer the FOLLOWING QUESTION (إجبارى): (10 Marks)

Indicate by the mark (X) or (√) and correct the incorrect sentences:

1) Layers of Mg-O/OH in a clay mineral are referred to as gibbsite layers ( ).
2) Intraformational conglomerates are derived from outside the depositional basin ( ).
3) Heavy minerals typically have densities that exceed those of the common rock-forming minerals quartz and feldspar ( ).
4) Glacial till that is transported within glacial ice is typically rounded in shape ( ).
5) Disturbance of sediments by organisms is known as bioturbation, which can lead to the total destruction of primary sedimentary structures ( ).
6) High feldspar content in sandstone carries specific implications about source area, climate and topography ( ).
7) Gypsum is the main mineral constituent of the carbonate minerals ( ).
8) Silica cements precipitate from acid solutions at pH < 7 ( ).
9) Oligomictic conglomerates are composed of clasts include several different rock types ( ).
10) Permeability refers to the volume of void space (available to contain fluid or air) in a sediment or sedimentary rock ( ).

Answer ONLY ONE from the following: (7 Marks)

I- The First Question (7 Marks)

Write on the following:

A) Classification of sandstones (2 Marks)
B) Definition of the following: (2 Marks)
i) Roundness of the grains ii) Sphericity of the grains
iii) Fabric of the sediments iv) Texture of the sediments
C) The major diagenetic processes in limestones. (3 Marks)

II- The Second Question (7 Marks)

Write on of the following:

A) Classification of conglomerates and breccias (2 Marks)
B) Compare between the following: (2 Marks)
ii) Quartz arenite and quartz wacke
iii) kandite group and smectite group.
C) Silica and carbonate cementations in sandstones. (3 Marks)

Good luck

Prof. Dr. Mahmoud Essa

جامعة اسيوط
كلية العلوم- قسم الجيولوجيا

امتحان مادة مبادئ علم الصخور (٣٢٤ج)
الفصل الدراسى الثانى - العام الجامعى ٢٠١٧/٢٠١٨
المستوى الثالث (جيوفيزياء و كيمياء-جيولوجيا) الزمن ثلاث ساعات

ملاحظة: الامتحان فى صفحتين

Part one (Igneous rocks)

Answer Three questions only of the following (16.5M)

Q1 (5.5 M)

i- Define the term A-type granitoids and explain the main characteristics of those rocks?

ii- Write on the importance of color index of igneous rocks?

Q2 (5.5 M)

i- Decribe the main features of those rock types: peraluminous granites, kimberlite, lamprophyre, carbonatite?

ii- Silica content influences magma's behavior. Comment?

Q3 (5.5 M)

i. Write briefly on the composition and viscosity of magmas and lavas?

ii. What does it mean term ophiolite?

Q4 (5.5 M)

i- Draw a ternary diagram illustrating the classification of pyroclastic igneous rocks?

ii- Explain the eruption mechanism of both columns and tephra falls?

Part two (Metamorphic rocks)

Answer Three questions only of the following (16.5M)

Q1 (5.5 M)

i- Discuss the role of pressure during metamorphism?

ii- Mention the various types of foliation?

Q2 (5.5 M)

i- Compare between contact metamorphism and regional metamorphism?

ii- Start with a shale and then hit it with heat and pressure?

Q3 (5.5 M)

i- Describe the main features of these rock types: greenstone, amphibolite, serpentinite, granofels, hornfels?

ii- Compare between partial melting during metamorphism and shock metamorphism?

Q4 (5.5 M)

i- Write briefly on non-foliated metamorphic rocks with examples?

ii- Explain the role of fluids and time during metamorphism?

أنظر خلفة

تمت الاسئلة وبالتوفيق أ.د. جلال الحباك

Assiut University
Faculty of Science
Geology Department

جامعة أسيوط
كلية العلوم
قسم الجيولوجيا

Final Exam in Electrical Prospection Course (G358)
(50 marks total)

May 2018 Time: 2 hours

ملحوظة: لن يتم تصحيح الاسئلة الزائدة عن المطلوب

1. **With the help of drawing explain only *TWO* of the following: (*10 marks each*)**

   a. **Basic principles of electromagnetic Induction**

   b. **IP phenomenon**

   c. **Vertical and horizontal resolution in ground penetrating radar**

2. **Write on *SIX* only of the following: (5 *marks each)***

   1) **The membrane and electrode polarization in induced polarization method (with drawing)**
   2) **Classification of the electromagnetic methods**
   3) **The main electrochemical controls on the IP response**
   4) **Limitations and advantages of electromagnetic method**
   5) **The different acquisition modes in GPR (with drawing)**
   6) **The different applications of electromagnetic method**
   7) **Four methods of depth (Velocity) estimation in GPR**
   8) **Factors controlling the selection of antenna in GPR**
   9) **The different survey configurations in TDEM method (with drawing)**
   10) **The main parameters that control electromagnetic propagation in GPR**

End of Questions *GOOD LUCK*

Course Instructor Prof. Dr. Gamal Zidan AbdelAal

(كل عام وأنتم بخير)

Assiut University
Faculty of Science
Geology Department

جامعة أسيوط
كلية العلوم
قسم الجيولوجيا

Final Exam in Electrical Prospection Course (G358)
(50 marks total)

May 2018 Time: 2 hours

ملحوظة: لن يتم تصحيح الاسئلة الزائدة عن المطلوب

1. **With the help of drawing explain only *TWO* of the following: (*10 marks each*)**

   a. **Basic principles of electromagnetic Induction**

   b. **IP phenomenon**

   c. **Vertical and horizontal resolution in ground penetrating radar**

2. **Write on *SIX* only of the following: (5 *marks each)***

   1) **The membrane and electrode polarization in induced polarization method (with drawing)**
   2) **Classification of the electromagnetic methods**
   3) **The main electrochemical controls on the IP response**
   4) **Limitations and advantages of electromagnetic method**
   5) **The different acquisition modes in GPR (with drawing)**
   6) **The different applications of electromagnetic method**
   7) **Four methods of depth (Velocity) estimation in GPR**
   8) **Factors controlling the selection of antenna in GPR**
   9) **The different survey configurations in TDEM method (with drawing)**
   10) **The main parameters that control electromagnetic propagation in GPR**

End of Questions *GOOD LUCK*

Course Instructor Prof. Dr. Gamal Zidan AbdelAal

(كل عام وأنتم بخير)

Assiut University

Faculty of science

Geology Department

Date: May 2018

Time allowed:2 Hours

Total Marks: 50 Marks

Special Course 305G (Ophiolite)

Answer only three questions from the followings starting with the first one. (Use drawings when possible).

1- **Write short notes on:** **(20 Marks)**
   i- The Conrad discontinuity.
   ii- Differences between continental and oceanic crust.
   iii- The forearc region.
   iv- Collision-related rifts and impactogens.

2- **Summarize the sequential events occurring in an arc-continent collision.** **(15 Marks)**

3- **Define the term marginal sea and explain the different models given for the formation of the majority of marginal seas. (15 Marks)**

4- **Mention briefly the common characteristics of the igneous rocks associating large-scale rift structures. (15 Marks)**

Good luck

Prof. Dr./ Ali A. Khudeir

Part two (25 Marks)

Answer the following questions:

First Question (15 Marks)

Compare between four ONLY of the following pairs:

i- Slaty cleavage – strain-slip cleavage
ii- Laccoliths - Lopoliths
iii- Aa lavas - Pillow lavas
iv- Primary foliation - secondary foliation
v- Caldera - Crater

Second Question (10 Marks)

Briefly outline the different types of volcanoes.

---------- *GOOD LUCK* ----------

Prof. Dr. Ali A. Khudeir
Prof. Dr. Nageh A. Obaidalla

بسم الله الرحمن الرحيـــم

University of Assiut
Faculty of Science
Department of Geology

3rd Level Examination for Petroleum Geology students
In Field Technique and Mapping (304GP)

Time: Two Hours **50 Marks** **May, 2018**

ملحوظة هامة: الأمتحان يتكون من صفحتين

Part One (25 Marks)

Answer the following questions:

First Question (15 Marks)

1- Choose the correct answer: (5 Marks, one Mark for each)

i- Which of the following is NOT a type of sedimentary structure?
a- mud cracks b- graded bedding c- ripple marks d- rock color

ii- A short time break or a change in sediment type in a depositional environment results in the creation of .....between individual beds.
a- an unconformity b- a graded bed
c- a bedding plane d- an intrusive contact

iii- Which of the following descriptions is NOT correct when talking about graded bedding?
a- graded beds can be formed on a river bed during floods.
b- there is a gradual change in sediment size throughout a bed.
c- small sediment grains are at the bottom and large grains are at the top.
d- graded beds are often associated with turbidity currents on ocean slopes.

iv- Which of the following sedimentary structures is common in sand dunes?
a- cross-bedding b- trace fossils c- graded bedding d- mudcracks

v- Which of the following statements about paleocurrents is FALSE?
a- cross-bedding can be used to determine a paleocurrent
b- cross-beds are inclined downwards in the direction of the paleocurrent
c- a paleocurrent refers to an ancient wind or water flow direction
d- ripple marks are indicators of paleocurrents

2- Write on three ONLY of the following terms: (10 Marks)
i- Flute mark ii- Type of rocks iii- Stratigraphic cross section iv- Mud cracks

Second Question (10 Marks)

i- Summarize the applications of Brantun Compass
ii- Compare between geologic primary structure and tectonic structurec.

B. Define the term of contact aureole, what are the factors affecting its size? If a granitic body has intruded into previously unmetamorphosed sedimentary rocks (e.g. dolomitic calcite – quartz beds, and shale) explain the various metamorphic zones which have been formed. (12 Marks)

4- A. Metamorphism generally includes a number of textural changes, what are commonly observed textural changes with increasing the degree of metamorphism?

B. Write on the debate of petrologists about the criteria for defining the beginning of medium - grade metamorphism. (12 Marks)

GOOD LUCK

Assiut University
Faculty of science
Geology Department

Date: May, 2018
Time allowed: 2 hours

Final Examination

Subject: Course No. G 336(metamorphic rocks)

Students: 3rd year Geology (credit system)

Figures must be drawn whenever possible:-

Answer this question: -

A- The temperature of the country rocks prior to intrusion of intermediate and basic dykes is 125°C. If the calculated temperatures at 100m distance are about 595 °C and 750 °C, respectively, calculate:

1. The temperature at the contact and at distance 500m.
2. The thickness of these igneous bodies.

B- Explain the expected metamorphic grades at different distances from these dykes, illustrating with diagram. (14 Marks)

Answer only THREE of the following questions:

1- A. What are the original rocks and the type of metamorphism that can cause the formation of these metamorphic textures?

Hornfels – Porphyroclast – Mesh textures

Illustrate the important petrographic criteria that can help to discriminate between the porphyroblastic and porphyroclastic textures.

B. Define the term of metamorphic facies, give examples of metamorphic facies named after index minerals, fabrics and tectonic setting. (12 Marks)

2- A. By mineral reaction equations explain the conditions of forming each of these minerals:

Cordierite – Staurolite – Garnet – K-feldspar - and Zoisite

B. Mention some of common minerals in metamorphic rocks and the most important bases of their classification. (12 Marks)

3- A. What are the metamorphic conditions of the very low- grade metamorphism – mention the most important mineralogical changes that occur at the contact with the low - grade metamorphism.

أنظر خلفه ↓

Assiut University *Faculty of Science* *Geology Department*		*Time: 2 hours* *May 2018* *Second Semester Exam.*

Subject: Sedimentary Environments and Sedimentary Basins (335 G)

Answer the following questions: ***(50 Marks)***

1. ***Important information's are gained from the interpretation of ancient sedimentary environments, mention these.*** ***(3 Marks)***
2. ***Describe the type of sedimentological features you would expect to see in an aeolian sediment.*** ***(5 Marks)***
3. ***What are the subenvironments found in delta.*** ***(4 Marks)***

---

4. ***Answer only <u>ONE</u> question of the following:*** ***(10 Marks)***
   - ***A. The depositional environments are affected mainly by specific parameters, mention these.***
   - ***B. Textural properties of sediments are important for the interpretation of sedimentary processes and environments, write on these.***

---

5. ***Which of the following is true and which is false, correct the false ones:*** ***(10 Marks)***
   - ***( ) Delta formed only where rivers enter seas***
   - ***( ) Winds and salinity are the main processes affecting the marine environment***
   - ***( ) Rift basins are related to plate divergence***
   - ***( ) The Quseir Formation of Egypt was deposited in marginal environment***
   - ***( ) Fertilizer materials of Egypt were accumulated in marine environment***
   - ***( ) Autocycles are cyclic sediments that are created by processes within the basins***
   - ***( ) Cosmogenous materials are widespread in the marine sediments of Egypt***
   - ***( ) Hummocky cross - stratification is indicative of aeolian process***
   - ***( ) All the sedimentary basins of Egypt have the same age***
   - ***( ) Lithology of sediments are not indicative of paleoclimate***

Assiut University *Faculty of Science* *Geology Department*		*Time: 2 hours* *May 2018* *Second Semester Exam.*

Subject: Sedimentary Environments and Sedimentary Basins (335 G)

Answer the following questions: ***(50 Marks)***

1. ***Important information's are gained from the interpretation of ancient sedimentary environments, mention these.*** ***(3 Marks)***
2. ***Describe the type of sedimentological features you would expect to see in an aeolian sediment.*** ***(5 Marks)***
3. ***What are the subenvironments found in delta.*** ***(4 Marks)***

---

4. ***Answer only <u>ONE</u> question of the following:*** ***(10 Marks)***
   - ***A. The depositional environments are affected mainly by specific parameters, mention these.***
   - ***B. Textural properties of sediments are important for the interpretation of sedimentary processes and environments, write on these.***

---

5. ***Which of the following is true and which is false, correct the false ones:*** ***(10 Marks)***
   - ***( ) Delta formed only where rivers enter seas***
   - ***( ) Winds and salinity are the main processes affecting the marine environment***
   - ***( ) Rift basins are related to plate divergence***
   - ***( ) The Quseir Formation of Egypt was deposited in marginal environment***
   - ***( ) Fertilizer materials of Egypt were accumulated in marine environment***
   - ***( ) Autocycles are cyclic sediments that are created by processes within the basins***
   - ***( ) Cosmogenous materials are widespread in the marine sediments of Egypt***
   - ***( ) Hummocky cross - stratification is indicative of aeolian process***
   - ***( ) All the sedimentary basins of Egypt have the same age***
   - ***( ) Lithology of sediments are not indicative of paleoclimate***

6. *Energy source materials were laid down in Egypt under variable environmental conditions, mention THREE of these illustrating the depositional environment required for each one.* *(3 Marks)*
7. *Tectonic movements and sedimentary processes can interact in three ways forming various types of sedimentary basins, write on these illustrating with drawings.* *(6 Marks)*
8. *Abu Gharadiq and Shushan basins are the most famous productive sedimentary basins in Egypt, mention their location, thickness of their sediments, and age of the source rocks.* *(5 Marks)*
9. *Define what is mean by sedimentary basins, illustrating the main factors controlling the size and shape of them.* *(4 Marks)*

Ezzat A. Ahmed *Good luck*

Geology Department Faculty of Science Assiut University		Time: 2 Hours May, 2018 2nd Semester Exam

Second Semester Final Examination
Subject: Diagenesis and Marine Geology (305G)
Students: 3rd Year of Geology
****

First part: Diagenesis (25 marks)

Answer the following question:

1. Microbes play an important role in diagenesis, which type of the Cretaceous rocks in Egypt show such impact? (3 marks)

---

2. Answer only <u>ONE</u> question of the following: *(6 marks)*

A. Cretaceous siliciclastics are widespread in the stratigraphic record of Egypt, write on the main diagenetic **processes and structures** characterizing these rocks.

B. The generation of oil and gas are related to organic matter diagenesis, write on the successive diagenetic **stages and products** observed during the diagenetic pathway.

---

3. True or false, correct the false ones: *(10 marks)*

( ) Mesogenesis refers to the earliest stage of diagenesis.
( ) Temperature required for diagenesis is lower than 400°C and pressure less than 1-3 kilobar.
( ) Kaolinite is replaced by illite and chlorite at higher temperatures and greater depths.
( ) Deep burial diagenesis is equivalent to low grade of metamorphism where smectite, mixed-layer clay minerals and kaolinite do not survive during metamorphism.
( ) Smectite is not sensitive to burial diagenesis effect.
( ) Catagenesis is the important diagenetic process required for hydrocarbon generation.
( ) Mechanical compaction and silica cementation are the most important diagenetic controls on the reservoir quality.
( ) Conversion of calcite to dolomite results in a reduction of volume to 20% and a decrease in porosity.
( ) Aragonite lysocline occurs at shallower depth than calcite lysocline.

(3) One of the ancient animals that helped Wegener to prove that fossils from different continents originally came from the same location.
(4) A supercontinent that existed in Earth's distant past.
(5) None of the above.

Question No. (4). Write briefly on the following items (8.5 marks):

A. Cosmogenous sediment. (3 marks)
B. Carbonate compensation depth (CCD). (3 marks)
C. Ocean basin. (2.5 marks)

****

Good Luck **Dr. Abdalla El Ayyat**

كلية العلـــوم-قسم الجيولوجيا

جامعة أسيوط

الامتحان النهائي لمقرر (٣٤٠ ج)
ميكانيكا الصخور وجيولوجيا تركيبية

الزمن : ٣ ساعات

يونيه ٢٠١٨

PART I : ROCK MECHANICS (15 marks)

WRITE SHORT NOTES ON THE FOLLOWING:

1. **What is a ductile behavior?** **(5marks)**
2. **What are the types of stress?** **(5marks)**
3. **What is the mechanics of faults?** **(5marks)**

PART II: STRUCTURAL GEOLOGY (35 marks)

Try to Illustrate your answers with suitable drawings when possible

ANSWER THE FOLLOWING FOUR QUESTIONS:

I. Choose the correct answer for the following statements and then rewrite in your answer paper ***(1 mark each)***

1. In an overturned fold the two limbs are dipping
   In opposite direction - in the same direction - towards the axial plane

2- A non- cylindrical fold is characterized by .....
   a- a curved hinge line b- straight hinge line c- refolded hinge line

3- Similar folds .....
   a- maintain constant layer thickness across the folded surface.
   b-the layer thickness parallel to the axial surface remains constant.
   c- inter-limb angles are equal.

4- On a scissors fault the hanging-wall block rotates around an axis that is .....
   a- parallel to the fault surface b- perpendicular to the fault surface
   a- oblique to the fault surface

5- The angle between fold limbs in the profile plane is called the .....
   a- interlimb angle b- true dip angle c-vergence angle

6 - The horizontal component of dip separation is called.....
   a-Throw b- Heave c-dip slip

7. Faults whose dip decreases progressively with depth have been given the special name .....
   a-Oblique-slip faults b- Listric faults c-Thrust faults d-Scissors faults

III. Discuss the regional strain ellipse associated with a wrench/ strike-slip fault system explaining the secondary structures probably developed around the principal displacement zone. **(8 marks)**

IV- Define and illustrate by drawings: **(5 marks)**

Kink folds – Monoclines - Listric fault - Ptygmatic folds- Strike Oblique slip normal fault .

ANSWER Only ONE OF THE FOLLOWING QUESTIONS:

V- Explain how folds may develop as an indirect result of the action of a shearing couple. **(7 marks)**

VI - Write short notes on **(7 marks)**

A) Field criteria of faults.

B) Parasitic folds and kink bands.

GOOD LUCK!

Prof. Dr. Moustafa M. Youssef

كلية العلـــوم-قسم الجيولوجيا

جامعة أسيوط

الامتحان النهائي لمقرر (٣٤٠ ج)
ميكانيكا الصخور وجيولوجيا تركيبية

الزمن : ٣ ساعات

يونيه ٢٠١٨

PART I : ROCK MECHANICS (15 marks)

WRITE SHORT NOTES ON THE FOLLOWING:

1. **What is a ductile behavior?** **(5marks)**
2. **What are the types of stress?** **(5marks)**
3. **What is the mechanics of faults?** **(5marks)**

PART II: STRUCTURAL GEOLOGY (35 marks)

Try to Illustrate your answers with suitable drawings when possible

ANSWER THE FOLLOWING FOUR QUESTIONS:

I. Choose the correct answer for the following statements and then rewrite in your answer paper ***(1 mark each)***

1. In an overturned fold the two limbs are dipping
   In opposite direction - in the same direction - towards the axial plane

2- A non- cylindrical fold is characterized by .....
   a- a curved hinge line b- straight hinge line c- refolded hinge line

3- Similar folds .....
   a- maintain constant layer thickness across the folded surface.
   b-the layer thickness parallel to the axial surface remains constant.
   c- inter-limb angles are equal.

4- On a scissors fault the hanging-wall block rotates around an axis that is .....
   a- parallel to the fault surface b- perpendicular to the fault surface
   a- oblique to the fault surface

5- The angle between fold limbs in the profile plane is called the .....
   a- interlimb angle b- true dip angle c-vergence angle

6 - The horizontal component of dip separation is called.....
   a-Throw b- Heave c-dip slip

7. Faults whose dip decreases progressively with depth have been given the special name .....
   a-Oblique-slip faults b- Listric faults c-Thrust faults d-Scissors faults

Assiut University
Faculty of Science
Geology Department
Geology/Chemistry group

Environmental Geochemistry G330

Final Exam

May 26th , 2018

Prof. Dr. Mervat A. Elhaddad

Time allowed: Two hours Total Pages 5

Answer **only twenty five** questions from the following (each question earn two marks) - **Please answer on the same sheet**.

1) When can an energy be called 'Renewable'?

2) Why batteries are hazardous?

3) Why Cement Kilns are destructive to the environment?

4)The cement kilns industries consume the highest percent of Scrap Tires
a) False b) True

5) What is meant by ionizing radiation?

6) Distinguish between the sources of Hg and As in the environment?

7) Explain the Point source and Non-point source

Assiut University
Faculty of Science
Geology Department
Geology/Chemistry group

Environmental Geochemistry G330

Final Exam

May 26th , 2018

Prof. Dr. Mervat A. Elhaddad

Time allowed: Two hours Total Pages 5

Answer **only twenty five** questions from the following (each question earn two marks) - **Please answer on the same sheet**.

1) When can an energy be called 'Renewable'?

2) Why batteries are hazardous?

3) Why Cement Kilns are destructive to the environment?

4)The cement kilns industries consume the highest percent of Scrap Tires
a) False b) True

5) What is meant by ionizing radiation?

6) Distinguish between the sources of Hg and As in the environment?

7) Explain the Point source and Non-point source

8) What do you understand by porosity for rocks?

9) What is the problem of excessive zinc in the Portland cement?

10) Briefly explain "why Freshwater shortages will grow"

11) Explain what's meant by renewable and non renewable resources.

12) Which elements form the majority of the Chemical Composition of the tire Ash?

13) How is radioactivity measured?

14) Write about Dioxins

15) Groundwater removed from the earth is never returned

a) False b) True

16) Briefly explain the origin and occurrence of ground water?

20) Types of Fuel Used in cement kilns

21) How dioxin is created?

22) Pollutants Released by Cement Kilns

23) Sources of Radioactivity in the environment

24) What's in Cement Kiln Dust?

25) Which process in the cement industry causes more pollution to the environment: the wet (old) or dry (new) process?

26)Define the term: Biomass