

Geology Department Faculty of Science Assiut University		قسم الجيولوجيا كلية العلوم جامعة أسيوط
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Second Semester Final Examination
Petroleum Geology Students, 3rd Level
(Chronostratigraphy and Biostratigraphy)

May 2017	316 GP	50 Marks	Time: 2 hours
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ملحوظة: الامتحان يتكون من ثلاث ورقات

PART ONE (Chronostratigraphy)

First Question: Choose the correct answer: (15 Marks)

1- Order the three Eons from oldest to youngest.

- a- Proterozoic-Archean-Phanerozoic b- Archean-Proterozoic-Phanerozoic
c- Phanerozoic-Proterozoic-Archean d- Paleozoic-Proterozoic-Archean

2- The Hadean, the Archean, and the Proterozoic eons are grouped together as the:

- a- Paleozoic b- Cambrian c- Phanerozoic d- Precambrian

3- A break in the rock record where the deposition of sediment has been interrupted is referred to as an.....

- a- Inclusion b- unconformity c- intrusion d- cross-cutting relationship

4- No place on Earth has a complete set of conformable strata.

- a- True b- False

5- The matching-up of rocks from similar ages but different regions is referred to as correlation.

- a- True b- False

6- The first appearance of abundant fossil evidence in the geologic record occurs at the beginning of the Period.

- a- Cambrian b- Silurian c- Permian d- Jurassic

7- Which of the following sequences places the different units of the geologic time scale in proper order beginning with the greatest expanses of time?

- a- era-eon-epoch-period b- eon-era- period- epoch
c- period- era- eon- epoch d- eon-period-era-epoch

8- The dominant life form of the Cambrian Period was.....

- a- sharks b- trilobites c- fish d- reptiles

9- According to the rock record, fossils of fish first appeared in which period?

- a- Jurassic b- Devonian c- Permian d- Ordovician

10- Which of the following is a Mesozoic Period?

- a- Paleogene b- Permian c- Jurassic d- Silurian

11- What major event ended the Mesozoic Era?

- a- The Earth stopped rotating b- the appearance of birds
c- The Earth froze over creating snow ball earth
d- meteorite collided with the Earth, thus killing >90% of all life on the earth.

12- Which of these is a epoch?

a- Triassic b- Oligocene c- Cenozoic d- Phanerozoic

13- What was the name of the supercontinent during the Proterozoic Era ?

a- Pangaea b- Rodinia c- Gondwana d- Laurantia

14- What does the term "Mesozoic" mean?

a- middle life b- ancient life c- recent life d- archaic life

15- The Precambrian includes approximately what percentage of geologic time?

a- ~25% b- ~50% c- ~87% d- ~75%

Second Question: (10 Marks)

a- In a geologic table write the rock forming fossils of the Paleozoic Era.

(4 Marks)

b- Compare between three only of the following statements: (6 Marks)

i- The paleoclimate conditions in the Paleozoic and Mesozoic eras.

ii- The derivation of the name of Triassic and Cretaceous periods.

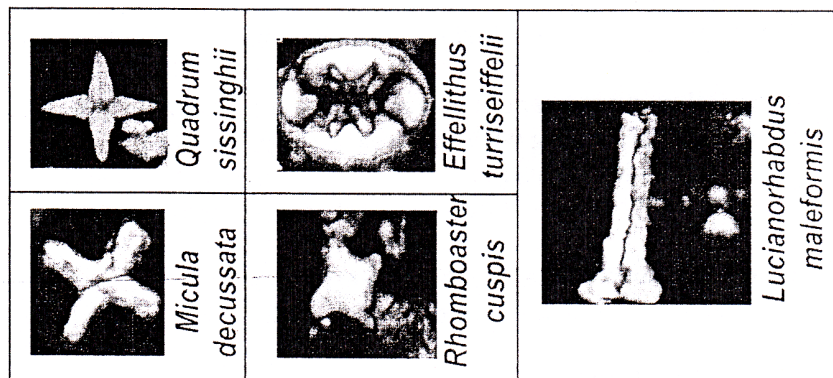
iii- The facies of the Ordovician and Silurian periods.

iv- The Hercynian and Nevadan orogenies.

PART TWO (Biostratigraphy)

First Question (5 marks).

- Write the geologic ages of the given Calcareous nannofossils species in the following figures:



Second Question (5 marks)

- Define the biostratigraphic events (planktonic foraminifera and calcareous nannofossils) of Two Only from the following boundaries:

1- Danian/Selandian.

2- Coniacian/Santonian.

3- Cenomanian/Turonian.

Third Question (5 marks)

Which of the following sentences is true and which is false, correct the false one:

- 1- Gradualism evolution is marked by its rapid speciation between long time periods.....()
- 2- Thoracosphaera operculata is a good example for abundance zone.....()
- 3- Conodonts is an index fossil for the Mesozoic Era.....()
- 4- The abundance of planktonic foraminifera and nannofossils reach its maximum during Early Cretaceous.....()
- 5- The proposed GSSP must be continuous in sedimentation.....()

Fourth Question (10 marks)

A. Choose the correct answer (3 marks)

- 1- Graptolites are useful in biostratigraphy of.....strata.
a. Cambrian b. Ordovician-Silurian c. Permian-Triassic
- 2- Discoaster araneus is a marker species for the definition of.....boundary
a. Paleocene/Eocene b. Aptian/Albian c. Paleogene/Neogene
- 3- The Cenozoic Era is marked by the presence of short hypothermal episodes; the first of them is the Danian/Selandian event.
a. True b. False

B. Define THREE ONLY of the following expression (7 marks):

- 1- Biohorizon. 2- Short Excursion Taxa.
- 3- GSSP and its rules. 4- Stage.
- 5- Punctuated equilibria.

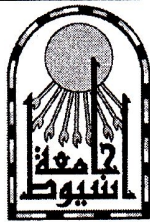
----- End of Exam -----

BEST WISHES

Prof. Dr. Nageh Obaidalla

Dr. Amr Abdel Sabour

Geology
Department
Faculty of Science
Assiut University



Time: 2 hours
May 2017
Second Semester Exam

Subject: Diagenesis and Marine Geology (305 G)

Students: 3rd level of Geology

Part One: Diagenesis (25 marks)

Answer the following questions: (25 Marks)

- The Cretaceous - Eocene sediments in Egypt display different diagenetic structures, *write short notes on these illustrating which type of rocks exhibit such features.* (6 Marks)

- **Answer only ONE question of the following:** (7 Marks)

1. Factors affecting diagenesis
2. Depositional environment plays an important role in sandstone diagenesis, *illustrate the difference between diagenetic process in the Aeolian and Fluvial sandstone varieties.*

- Carbonate sediments can be brought into contact with meteoric water causing diagenetic effects, *write in brief the causes of such diagenetic effects.* (3 Marks)

- Mention the diagenetic processes that create or enhance porosity. (3 Marks)

- Write short notes on the causes and factors controlling compaction. (6 Marks)

Prof. Dr. EZZAT ABDALLAH

Good Luck

Part two: Marine Geology (25 marks)

Answer only three questions out of the following and illustrate your answer with drawings

اجب عن ثلاثة اسئلة فقط مما يلي على ان يكون الاول منها موضحا اجابتك بالرسم

السؤال الاول (اجباري)

Question No. (1) : Write in detail on the following items (10 marks):

1. Describe the evidences found on the present continents that suggest Laurasia and Gondwana land existed between 250 and 350 million years ago (1.5 marks).
2. What are the internal waves and what are the main factors controlling their formation (1 mark).
3. What are the different types of convergent plate boundary (1.5 marks).
4. Name the two types of lithospheric plates and describe them (1.5 marks).
5. What is the source of energy that drives the movement of the lithospheric plates (1.5 marks).
6. What happens when ocean plates come together. What landform does this event create (1.5 marks).
7. What are the characteristics of lithogenous sediments. How they are transported to the ocean basin (1.5 marks).

اجب عن سؤالين فقط مما يلي والاجابات الزائدة لن يلتفت اليها.

Question No. (2): (7.5 marks).

1. At what wave steepness ratio do waves usually break ($2/7$ - $1/3$ - $1/7$ - $3/5$) (1.5 mark).
2. Large volumes of bottom sediments may be transported long distances by (storm waves - icebergs - tidal action - turbidity currents - all of these) (2 marks).
3. Which of the following are hydrogenous sediments (manganese nodules - evaporates - salt precipitates such as calcium sulfate - all of these - none of these) (2 marks).
4. Earlier than 200 million years ago, the continents were joined into one supercontinent called (Pangaea - Panthalassa - Oceanus - Tethys - none of these) (2 marks).

بقية الاسئلة في الصفحة التالية

Question No. (3): (7.5 marks).

1. A boundary in which crustal plates move past one another is called (a transform fault - a convergent zone - a divergent zone - a rift valley - none of these) (2 marks).
2. Sources of terrigenous sediments include all of the following **EXCEPT** (rivers - wind transporting sand and dust - volcanic ash - erosion - all of these) (2 marks).
3. What is the name given to waves with rounded crests and pointed troughs (gravity waves - swell waves - capillary waves - rogue waves) (1.5 marks).
4. Pelagic sediments (are fine-grained - are deposited far from continental margins - settle very slowly to the seafloor - all of these) (2 marks).

Question No. (4): (7.5 marks).

1. When a wave gets close to shore, water particles near the bottom move in (circular - elliptical - irregular - rectangular) orbits (2 marks).
2. Most volcanic activity on the seafloor takes place on (continental shelves - abyssal plains - continental rises - mid-ocean ridges) (2 marks).
3. Neritic sediments are found on the (deep ocean floor mostly in the Atlantic Ocean - continental shelf - continental rise - abyssal plains - deep ocean floor mostly in the Pacific Ocean) (2 marks).
4. Which of the following is generated in place, on the spot where we find them (terrigenous sediments - biogenous sediments - hydrogenous sediments - cosmogenous sediments - none of these) (1.5 marks).

Good Luck

Dr. Abdalla El Ayyat

Time allowed: two hours

5 pages

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

- 1) Groundwater is a renewable resource False True
- 2) What are the greenhouse gases?
- 3) Which gas composes the highest concentration on Earth?
- 4) Write about the Cosmic radiation
- 5) What is the level of natural radioactivity in soils?
- 6) What causes the radioactivity in the environment?
- 7) How big the water resources used by Human : Small Large
- 8) How to sustain water use

9) What are the consequences of overpopulation?

10) How the organic carbon cycle is divided?

11) What is the chemical composition of biomass ?

12) What are the Parameters used to assess the organic matter sources?

13) In which sense the process of Cement making is environmentally destructive

14) Write on the Energy Used in Cement Kilns

15) How dioxin is created in the environment?

16) Write on : Hazardous Waste Fuels vs. Traditional Fuels, environmentally

17) What's the composition of the Cement Kiln Dust?

- 18) Which elements form the majority of the Chemical Composition of the tire Ash?
- 19) How can we Measure climate change in Earth's geologic past?
- 20) Why are there climate cycles?
- 21) Write environmentally on : Whole vs. Chipped Tires
- 22) Mention the seven forms of energy
- 23) What's negative about nuclear energy?

24) Which heavy metals are of particular concern?

25) From where Did O₂ Come on the earth?

26) What is the pH ranges of groundwater?

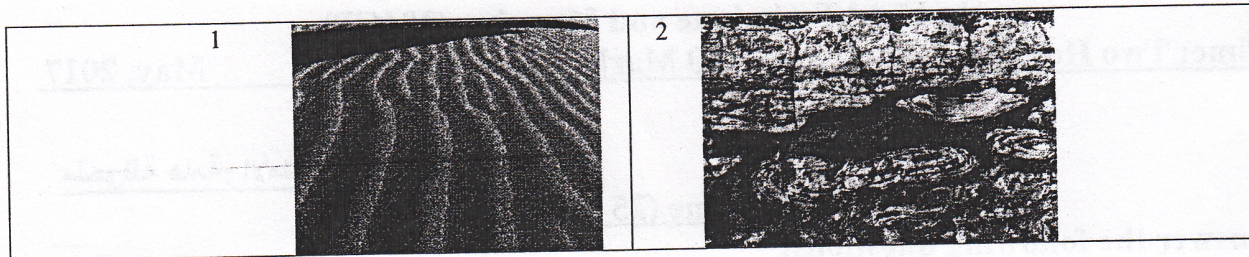
27) Write on your carbon footprint

- i- Explain the structural cross sections ii- Summarize the applications of Brantun Compass

Third Question (8 Marks)

Redraw the showing geological photographs in a table and compare between them according to the following statements:

- i- Name and type of the geological structure
- ii- The formation of each one
- iii- The geological implication of each one



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 textures - secondary textures
- 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



**FACULTY OF SCIENCE
ASSIUT UNIVERSITY**



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

June: 2017

Time: 2 hours

1) Define only five of the following: (*two marks each*)

Subsidence

Natural Hazard

Creep

Landslide

Earthquake

Epicenter

Tsunami

Disaster

2) Write brief notes on only ten of the followings: (*four marks each*)

- 1) The geological and morphological causes of land instability
- 2) Locating the epicenter of an earthquake
- 3) Different types of volcanos
- 4) Classification of landslides
- 5) Earthquake nomenclature
- 6) Geologic effect of land instability
- 7) Types of volcanic eruptions
- 8) The different magnitude scale of earthquakes and the complications of Richter scale
- 9) Products of explosive volcanic eruptions
- 10) Factors used in classification of land instability
- 11) The classification of different types of land instability according to rate of movements
- 12) Distant vs Local Tsunami
- 13) The different parts of volcano and volcanic hazards

Good Luck.....

Prof. Dr. Gamal Zidan AbdelAal

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, 2017

ملحوظة هامة: الامتحان يتكون من صفحتين

Answer the following questions:

First Question (10 Marks)

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

i- A dike is a type of igneous pluton that is relative to the structure or layering of the older rocks that were intruded by the dike.

a- Convergent b- Divergent c- Concordant d- Discordant

ii- Gasses (volatiles) escaping from magma will produce vesicles (voids or bubbles) in the solidified rock. Which of these is not an example of vesicular structure?

a- volcanic rocks b- plutonic rocks c- intermediate rocks d- none of these

iii- Which of the following is a method of correlation?

a- physical continuity b- similarity of rock types
c- similarity of fossil assemblages d- all of these

iv- If an igneous rock cuts across a sedimentary rock, we know that the igneous rock is

a- older than the sedimentary rock b- younger than the sedimentary rock
c- the same age as the sedimentary rock d- none of these

v- A contact between parallel sedimentary rock layers that records missing geologic time is

a- disconformity b- an angular unconformity c- a uniformity d- a nonconformity

vi- Extrusive igneous rocks are also called....., while intrusive rocks are also called.....

a- plutonic, volcanic b- volcanic, plutonic c- plutonic, granite d- volcanic, basalt

vii- A short time break or a change in sediment type in a depositional environment results in the creation ofbetween individual beds.

a- an unconformity b- a graded bed c- a bedding plane d- an intrusive contact

viii- Fossils are most commonly found in:

a- Igneous rocks b- Metamorphic rocks c- Sedimentary rocks d- all of these

ix- The concepts that eventually formed the basis for uniformitarianism stated that.....

a- the past history of the Earth can be explained by present-day processes
b- Earth's rocks are precipitated in ocean basins
c- the Earth is approximately 10,000 years old d- All of these

Second Question (10 Marks)

- i- Explain the stratigraphical cross sections. (4 Marks)
- ii- Summarize the field instruments, and write only one geological function for every one. (4 Marks)
- iii- Define the following terms: (2 Marks)
 - a- Intraforantional conglomerate
 - b- Datum section

Third Question (15 Marks)

What are the kinds of sedimentary structures, in a table differentiate between them (give examples and illustrate your answer by drawing).

Fourth Question (15 Marks)

Answer ONLY three of the following:

- i- Discuss the field criteria of unconformities.
- ii- Discriminate between the types of sedimentary rocks.
- iii- What is the important of geological field mapping?
- iv- Outline the elements of the geological report.

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

Prof. Dr. Nageh A. Obaidalla



Second term final examination
Subject: Marine Geology (326PG)
Students: 3rd level of Petroleum Geology

اجب عن ستة اسئلة فقط مما يلي على ان يكون السؤال الاول والثاني منهم (اجباري)

السؤال الاول (اجباري)

Question No. (1): Write in detail on the following items (10 marks)

1. What observations did Wager use to support the hypothesis of continental drift (2 marks).
2. What is a turbidite. How and where does it form (2 marks).
3. Discuss the concept of "Carbonate Compensation Depth" (2 marks).
4. Describe the process of subduction in your own words. What causes subduction to happen (2 marks).
5. What is a tsunami. How and where tsunamis formed (2 marks).

السؤال الثاني (اجباري)

Question No. (2): Why (give reasonable interpretations) (10 marks)

1. Most of the lithogenous sediment composed of quartz (2 marks).
2. Solution of carbonate sediments in deeper water (2 marks).
3. Rise of the ocean floor at the base of the continental slope (2 marks).
4. It seems impossible that rivers could have cut submarine canyons (2 marks).
5. Marine sediments are thickest on the continental margins (2 marks).

اجب عن اربعة اسئلة فقط مما يلي والاجابات الزائدة لن يلتفت اليها

Question No. (3): Choose the correct answer out of the following (7.5 marks)

1. The Mariana Trench is best known for its (depth - icebergs - deep - fast) (1.5 marks).
2. An atoll will eventually become (buyot - guyot - auyot - lyuot) (1.5 marks).
- 3- To calculate the depth of the ocean floor with sonar, scientists measure (silica and calcium carbonate - the time it takes horses to travel - ocean times - the time it takes sound waves to travel) (1.5 marks).

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- 4- What type of currents erodes and deposit fine-grained sediments on the continental slope and rise (tidal currents - turbidity currents - long-shore currents - river currents) (1.5 marks).
5. Deep valleys eroded into the continental slope and shelf are called (estuaries - submarine canyons - oceanic trenches - abyssal valleys) (1.5 marks).

Question No. (4): Choose the correct answer out of the following (7.5 marks)

1. Which type of sediment covers the greatest area of the ocean basin (terrigenous - biogenous - cosmogenous - hydrogenous) (1.5 marks).
2. Which of the following occur when wave steepness reaches 1/7 (tsunamis - rip currents - orbital waves - breakers) (1.5 marks).
3. Internal waves travel faster when (salinity differences are greater - temperature differences are greater - density differences are greater - sulfur differences are greater) (1.5 marks).
4. What is the name given to waves with rounded crests and pointed troughs (gravity waves - swell waves - capillary waves - rogue waves) (1.5 marks).
5. In what geometrical shape do waves in deep-water move (horizontally - elliptically - circular - spherical) (1.5 marks).

Question No. (5): True or false (7.5 marks)

1. On average, continental rocks are denser than the rocks of the oceanic crust (1.5 marks).
2. The tops of most submarine canyons were exposed valleys and rivers during the last Ice Age (1.5 marks).
3. The ocean floor basalts are magnetized (1.5 marks).
4. The graded bedding found in a turbidite usually shows mud on the bottom of the layer followed by silt in the middle and then sand at the top of the layer (1.5 marks).
5. Hydrothermal vents are also known as black smokers (1.5 marks).

Question No. (6): Fill in the spaces with appropriate term (7.5 marks)

1.occur near the edges of ocean basins associated with continental shelves and slopes (1.5 marks).
2. The mid-ocean ridges areplate boundaries (1.5 marks).
3. Oceanographers believe the breakup of occurred about 180 to 200 million years ago (1.5 marks).
4. A boundary in which crustal plates move past one another is called a (1.5 marks).

انظر خلفه - بقية الاسئلة في الصفحات التالية

5. The great accumulations of unconsolidated sediment at the base of the continental slope are known as the (1.5 marks).

Question No. (7): Choose the correct answer out of the following (7.5 marks)

1. The asthenosphere is (the uppermost layer of the earth's atmosphere - the pelagic zone just beneath the compensation depth - the outer layer of the earth's core - a partially molten "mushy" zone in the upper mantle - the boundary between the crust and the mantle) (1.5 marks).
2. The sedimentary rocks that are deposited in deep ocean waters, below the Carbonate Compensation Depth are (limestones - red clays - sandstones - conglomerates - none of the previous) (1.5 marks).
3. What is a characteristic of divergent plates (creating mountains - deep sea trenches - make big holes - seafloor spreading) (1.5 marks).
4. When traveling down the water column which will dissolve first (a shells composed of aragonite - shells composed of calcium carbonate shells of diatoms and radiolarian - neither will dissolve) (1.5 marks).
5. Which feature is at the greatest depth in the ocean (abyssal plain - continental shelf - submarine canyon - continental rise) (1.5 marks).

Good Luck

Dr. Abdalla El Ayyat

Assiut University

Date: May, 2017

Faculty of science

Time allowed: 2 hours

Geology Department

Final Examination

Subject: Course No. G 336(metamorphic rocks)

Students: 3rd year Geology (credit system)

Figures must be drawn whenever possible:-

Answer this question: -

(14 Mark)

- 1- Deep intrusions are emplaced at a liquid temperature of 1200° C and 800° C.
 - a- Calculate the temperature at the contact if the temperature of the country rocks prior to intrusion of the magma 125° C.
 - b- If the thickness of these intrusions are 800m and 500m, respectively, calculate the temperature at distances 160m, 400m, 500m for the first one and 50m, 100m and 250m for the second intrusion body.
 - c- Illustrate with diagram the expected grades of metamorphism at these distances for each igneous body.

Answer only THREE of the following questions:-

1-A- Define the mineral paragenesis, indicate fundamental principles that govern them and enumerate the mineral paragenesis and types of metamorphism in different depth zones?

(12 Mark)

1-B- Suggest possible mineral assemblages that might develop in the pelitic and basic rocks at medium grade of metamorphism?

2-A- Draw a pair of axes to represent pressure and temperature, indicate the approximate positions of slate, phyllite, schist, gneiss and migmatite, and mark the position occupied by contact metamorphism?

(12 Mark)

2-B- Discuss the petrographic features indicating the common relation between metamorphic grade and type of metamorphic textures.

3-A- Suggest some reasons why greenschist belts are so named?

(12 Mark)

أنظر خلفه



3-B- Under cross-polarized light a strain plagioclase with bent lamella and undulatory extinction has been partially replaced by small polygonal grains lacking undulatory extinction, what are the expected interpretation of this texture regarding timing of deformation and recrystallization?

4-A- Discuss the controlling factors in metamorphism – give examples. (12 Mark)

4-B- The transition from amphibolites facies to anhydrous granulite facies can take place by a prograde increase in temperature – mention some mineral reactions that can occur in this case?

GOOD LUCK

Assiut University
Faculty of Science
Geology Department
Time allowed: 2 Hours

جامعة اسيوط
كلية العلوم
قسم الجيولوجيا
الزمن: 2 ساعة

Special Course 305 G (Ophiolite)

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

- 1- **A:** Explain briefly the three principle stages in the rifting process. (9 marks)
B: Summarize the Courtillot's model (1982) concerning the rift propagation. (11 marks)
- 2- **Write short notes on:**
A: Main features and the lithologic sequence of Rubshi ophiolite. (6 marks)
B: Types of mélanges. (9 marks)
- 3- Explain the sequence events occurring in an arc-continent collision. (15 marks)
- 4- Define the term marginal sea and explain the different models showing the evolution of the majority of marginal seas. (15 marks)

With my best regards

Prof .Dr/ Ali Khudeir



2nd Semester Final Written Exam, 2017

Course: **Organic geochemistry, PG332**

Time Allowed: **2 Hrs**

Answer the following questions

1- State whether the following statements are correct or wrong and correct the wrong one: (5 marks; 1 mark each)

- A- During diagenesis, biogenic methane is the only hydrocarbon released.
- B- The largest reservoir of carbon, accounting for ca 99.9% of the total carbon, is sedimentary rock, mainly in the form of organic carbon.
- C- Biological macromolecules (e.g. proteins, polysaccharides, lipids and lignin) often comprises no more than 20% of the total organics in the upper layers of sediments.
- D- Evolution of carbon-rich sediments with increasing depth within the upper crust is principally controlled by pressure.
- E- Eukaryotes play the most important roles in converting chemical products of life into organic substances found in sediments and soils.

2- Define Five Only of the following: (15 marks; 3 marks each)

- A- Oil window, B- Inertinite, C- Prokaryotes, D- Source rock, E- Sapropelic coals, F- Tmax, G- Kerogen, H- Pyrolysis.

3- Choose the correct answer: (5 marks; 1 mark each)

- A- Type of organic matter can be determined by which of the following analysis?
1- Palynological 2- Elemental 3- Organic geochemical 4- All of them
- B- Major contributors of sedimentary organic matter in the geological past are:
1- Bacteria 2- Higher plant 3- Phytoplanktons 4- Zooplankton 5- All of them
- C- Crude oils can be classified according to the relative amounts of acyclic alkanes, cycloalkanes, aromatic hydrocarbons, and NSO into:
1- Paraffinic-naphthenic oils 2- Paraffinic oils 3- Aromatic-intermediate oils 4- All of them
- D- Hydrocarbons (HC) consist of a straight or branched chain of carbon and hydrogen atoms are called:
1- Aliphatic HC 2- Acyclic HC 3- Paraffins 4- Alkanes 5- All of them
- E- Which of the pyrolysis-estimated parameter stands for free hydrocarbon that can be volatilized out of rock without cracking?
1- S_1 2- S_2 3- S_3 4- T_{max} 5- Petroleum potential (PP)

4- Write briefly on Three Only of the following: (25 marks; 5 marks each)

- A- Process of hydrocarbon generation.
- B- Sedimentary fate of organic material
- C- Conventional Natural Gas.
- D- Controls on primary production of OM.

Good luck

Examiner: Dr. Amr S. Deaf



SECTION ONE: IGNEOUS AND METAMORPHIC ROCKS

Answer the following questions (Use drawings when possible) (32 Marks)

- 1- Review the main divisions of the textures of the metamorphic rocks.
(10 Marks)
- 2- List briefly the main structures of lavas.
(7 Marks)
- 3- Compare between the following pairs: (8 Marks)
 - a- Primary textures – Secondary textures
 - b- Normal zoning – Oscillatory zoning
 - c- Primary twinning – Deformation twinning
 - d- Batholiths - Stocks
- 4- Write shortly on the different classifications used for defining the igneous rocks.
(7 Marks)

SECTION TWO: SEDIMENTARY ROCKS

Answer ONLY TWO questions from the following: (18 Marks)

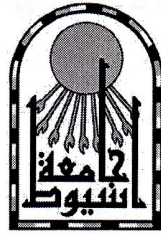
- 1- Write on the following (9 Marks)
 - a- Carbonate cementation in sandstones. (4 Marks)
 - b- Classification of sandstones. (3 Marks)
 - c- Definition of the following:
 - i- Porosity ii- Permeability iii- Sphericity iv- Form (2 Marks)
- 2- Discuss briefly the following: (9 Marks)
 - a- The major diagenetic processes in carbonates (4.5 Marks)
 - b- The two major groups of clay minerals. (4.5 Marks)
- 3- Write briefly on the following: (9 Marks)
 - a- Carbonate rocks constituents (6 Marks)
 - b- Evaporites and their economic and geologic importance (3 Marks)

With our Best wishes

Prof. Dr. Ali A. Khodeir

Prof. Dr. Mahmoud A. Essa

Geology Department
Faculty of Science
Assiut University



Time: 2 hours
May 2017
Second Semester Exam.

Subject: Sedimentary Environments and Sedimentary Basins (335 G)

Answer the following questions:

(50 Marks)

1. The depositional environments are affected by many parameters, *mention these*. (6 Marks)

2. Answer only ONE question of the following: (4 Marks)

Compare between the following:

A- Pre-depositional and Syn-depositional primary sedimentary structures.

B- Autocycles and Allocycles.

3. Define the volcanogenous and cosmogenous sediments occurring in the marine environment (2 Marks)

4. Write briefly on the following: (4 Marks)

A- Age of sedimentary basins

B- Active and Inactive sedimentary basins

5. Which of the following is true and which is false.

(6 Marks)

- A. () Eocene limestone in Egypt was accumulated mainly in neritic environment.
- B. () Sedimentary cycle is characterized either by vertical variation in primary sedimentary structures and/or the change in lithology.
- C. () Rift basins are related to plate divergence.
- D. () The Quseir Shale in Egypt was deposited under aeolian environment.
- E. () Sedimentary environment is a geographic location under which sediments were accumulated.
- F. () Sedimentary basins are regions of the Earth's crust dominated by subsidence.

6. Industrial materials were laid down in Egypt under environmental settings, *illustrate the location and environment of the following:*

(4 Marks)

- A. Oil Shale**
- B. Limestone**
- C. Glauconite**
- D. Kaolin**

7. Both climate and tectonics play an important role on delta environments, *write short notes on these parameters.*

(6 Marks)

8. Answer only **ONE** question of the following: (10 Marks)

A- Compare between the characteristic features of
Aeolian and Fluvial sediments

B- Interpretation of sedimentary environments are based on many features, *write on the most important ones applied in environmental interpretation.*

9. How sedimentary basins are formed? (6 Marks)

10. The sedimentary basins are important for hydrocarbon resources; *mention two of the most important sedimentary basins of Egypt.* (2 Marks)

EZZAT ABDALLAH

GOOD LUCK



2016-2017 Second Semester, Final Examination for 3rd Level Students

On: Subsurface Mapping (308-PG)

May 2017	(Total Marks: 50)	Time allowed: 2 hours
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Answer the following questions:

First Question: Complete the missing parts for ONLY FIVE from the following.

(10 marks, 2 marks each)

- The main objectives of subsurface sectioning and mapping can be summarized into: -
 -
 -
 -
 -
 -
- Mega regional data which used in regional subsurface sectioning and mapping includes: -
 -
 -
 -
 -
- Subsurface cross sections are classified based on: -
 -
 -
 -
 -
- Stratigraphic cross sections or fence diagrams are constructed based on: -
 -
 -
 -
- When correlating layers recorded during vertical drilling with those observed from directional drilling the main guidelines that will take into account are: -
 -
 -
 -
 -
- Subsurface geophysical cross sections are constructed to show that: -
 -
 -
 -
 -

Second Question: Choose the correct answer and comment on your choice with *illustration* on ONLY FIVE of the following.

(10 marks, 2 marks each)

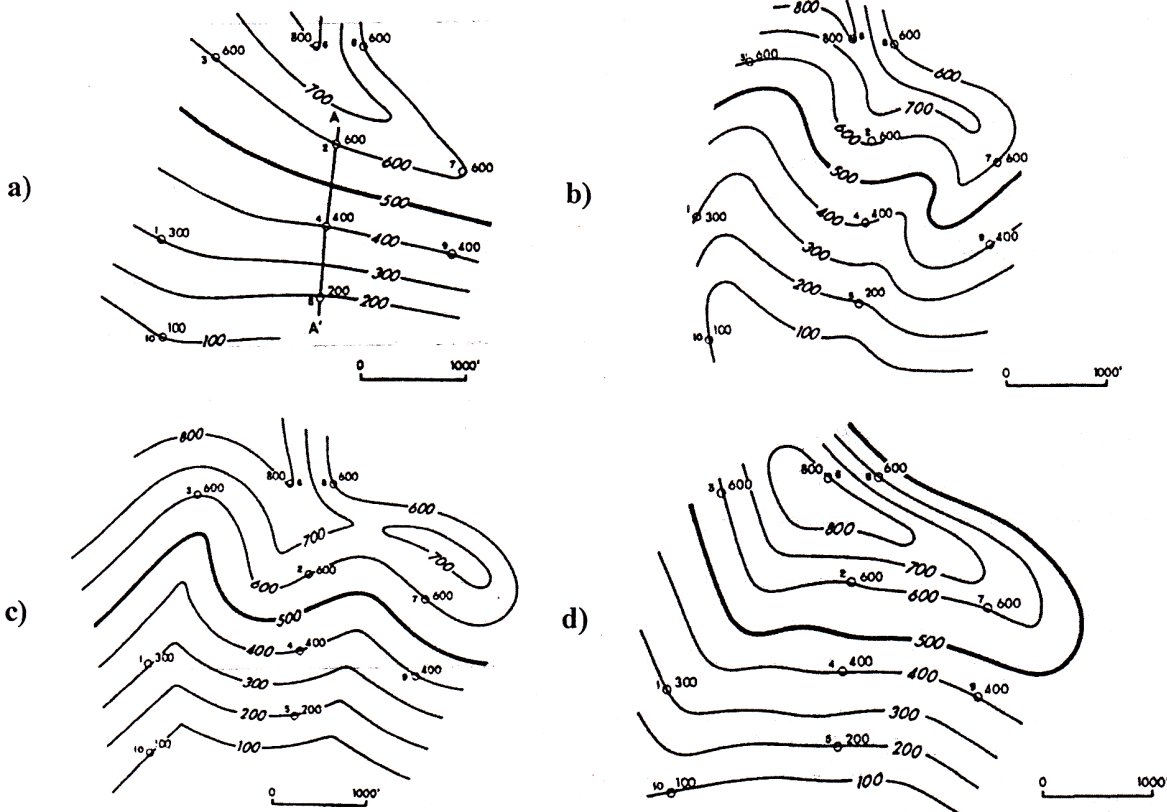
- In log correlation for structure the correlation must start: -
 - From top to bottom
 - From bottom to top
 - From unconformity surfaces
- Drilling horizontal layers by directional drilling TMT is increasing with:-
 - Decreasing of deviation angle
 - Increasing of deviation angle
 - Increasing of dip angle
- Increasing of layers thickness in the upthrow side of the fault plane in compared with in the downthrown side indicating to: -
 - Normal growth faults
 - Reverse growth faults
 - Wrench growth faults

4. Repetition of layers during vertical drilling without definite changing in the repetition interval along the section in different wells indicates to: -
 - a) Reverse fault
 - b) Normal fault
 - c) Recumbent fold
5. For tracing the subsurface structures along definite direction, the collected subsurface depth to the bedding planes must be referred to: -
 - a) Non-eroded bedding plane
 - b) Sea level
 - c) Unconformity surface
6. Missing of some beds in well through drilling the complete subsurface section but appear in other wells located along the horizontal line (may be N-S direction) indicates to: -
 - a) Normal fault
 - b) Reverse fault
 - c) Anticline fold

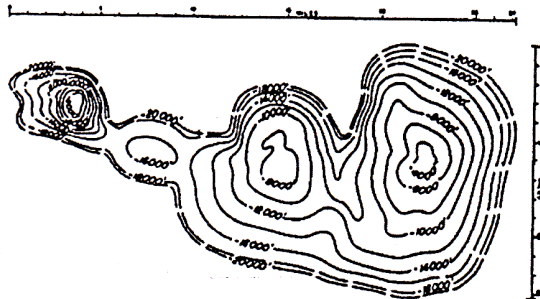
Third Question: What is the differences with *illustration* between ONLY FIVE of the following.
(5 marks, 1 mark each)

- a) 3D geologic model and fence diagram.
- b) TST and TMT in directional drilling of dipping layers.
- c) Unconformities and faults in log correlation of dipping layer drilled by directional drilling.
- d) Subsurface stratigraphic and structural cross sections.
- e) Composite log type and cross section.
- f) Data derived from well sampling and that from well measurements.

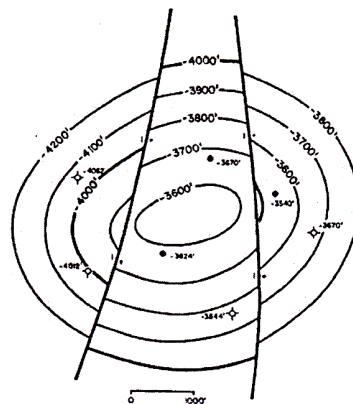
Fourth Question: Four distinct methods of contouring are used commonly in the preparation of different subsurface maps. *Using the following contour maps; it is required to define and comment on each contouring method.*
(6 marks, 1.5 marks each)



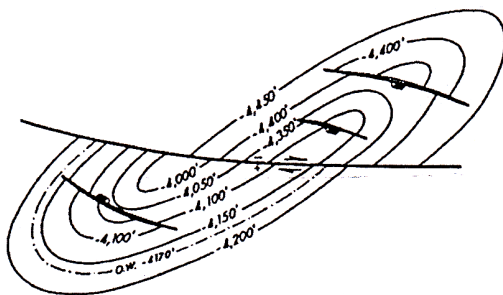
Fifth Question: Based on your knowledge about the different geologic features appeared on the subsurface sections/maps (e.g., structure contour, isopach and facies maps), it is required to define the possible geologic structure(s)/feature(s) in ONLY FIVE from the following figures. (10 marks, 2 marks each)



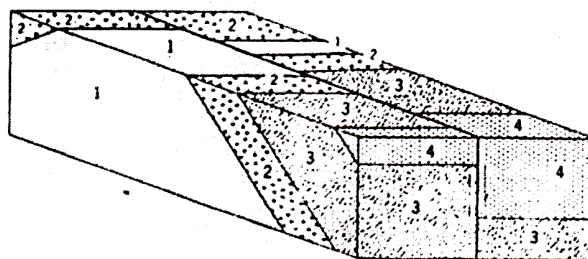
a)



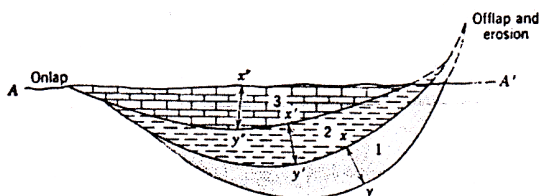
b)



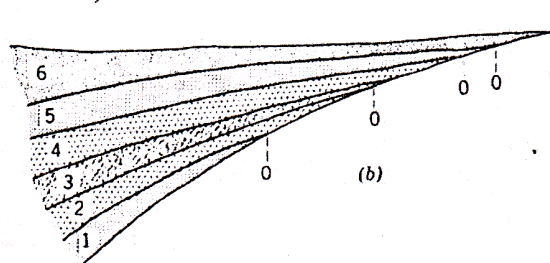
c)



d)



e)



f)

Sixth Question: Complete ONLY SIX from the following sentences. (9 marks, 1.5 marks each)

- is a reservoir which is not completely underlain by water, with some portion of the reservoir completely filled with hydrocarbons from the top to base of the sand unit.
- is a map on which the depiction of folded or faulted strata shows them restored as closely as possible to their original geographical positions prior to folding or faulting.
- map delineates the thickness of reservoir quality sand which contains hydrocarbons.
- is a common type of facies maps and made by drawing contour lines to connect points at which the ratio between two variables is the same.

5. illustrates the distribution of rock units exposed at a paleotopographic surface in the same way that a geologic map illustrates the position of outcrops at the present surface.
6. map is an isochore map which represents the total aggregate vertical thickness of porous reservoir quality rock present in a particular stratigraphic interval.
7. maps are drawn to depict the structural patterns for chosen division of geologic time. Their chief use is to show the distribution of various components of the tectonic framework.
8. maps can be constructed to show the distribution of land and sea, topographic relief, rock subcrops, or the position of the tectonic features at some time in the past.

===== *Good Luck,,* =====

Prof. Mahmoud Senosy

Dr. Rashad Sawires



كلية العلوم - قسم الجيولوجيا



جامعة أسيوط

امتحان طلاب المستوى الثالث (ساعات معتمدة)
مقرر (٣٤٥ ج) مبادئ الجيولوجيا التركيبية
(لطلاب الجيولوجيا والكيمياء)

الزمن : ٢ ساعة

مايو ٢٠١٧

PRINCIPALS OF STRUCTURAL GEOLOGY (50 marks)

ANSWER THE FOLLOWING FOUR QUESTIONS:

1- Select and complete the Following (5 marks)

- Equal, all sides pressures on solids is called pressure.
- Stress kinds includes....., and
- The volume of rockswith the increase of confining pressures, whereas the density.....

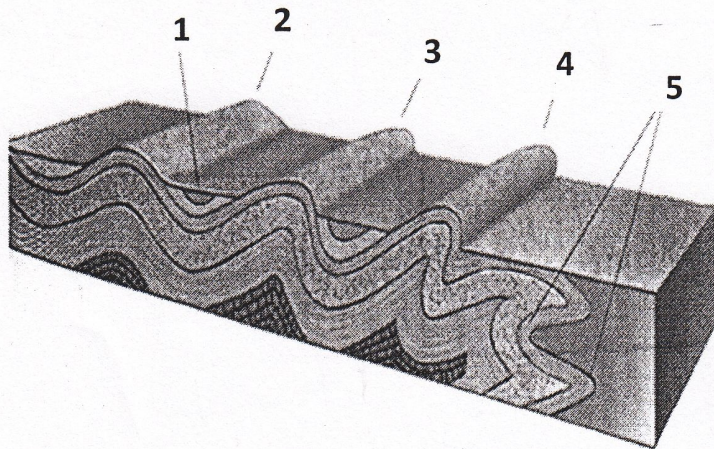
2 - Compare between THREE ONLY: (15 marks)

- Dilation and distortion.
- Different kinds of unconformities.
- Parasitic folds and kink bands.
- Angle of **Had** and angle of **Vergence**.

3- Using the figures below answer the following: (10 marks)

A- Write the name of each fold type (5 marks)

- 1).....
- 2).....
- 3).....
- 4).....
- 5).....



بافى الاسنله فى الصفحة التاتيه

B- Show the different fault-slip components in the blank rectangles (5 marks)

1).....

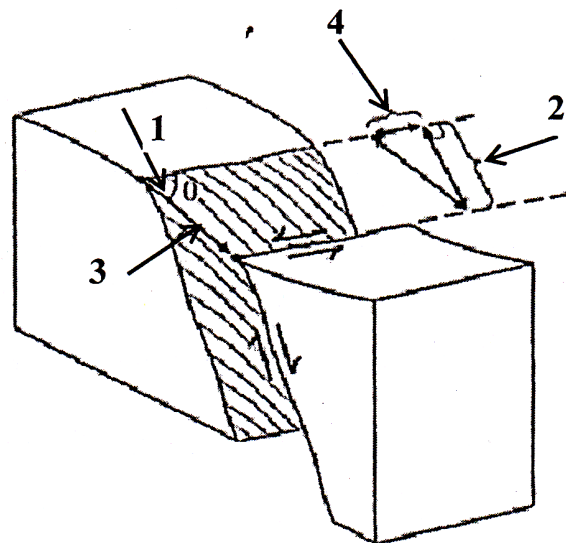
2).....

3).....

4).....

5) What is the type of the fault?

.....



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

- a. Non-Tectonic Structures.
- b. Primary igneous structures
- c. Criteria of Folds.

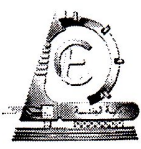
5- Define and illustrate by drawings FOUR ONLY: (10 marks)

Monoclines - Simple Shear – Plastic dislocation – Anticlinorium - structural terrace.

GOOD LUCK

Prof. Dr. Ahmed R. M. El Younsy

28, May, 2017



كلية الهندسة
امتحان نهاية الفصل الدراسي الثاني
مايو 2017

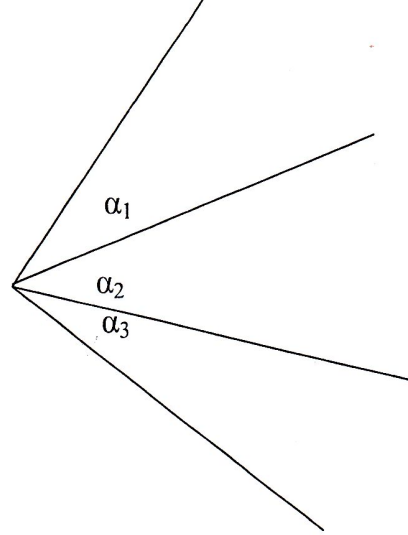
علوم جيولوجيا
مساحة جيوديسيا 320 هـ



قسم الهندسة المدنية
الزمن : ساعتان

اجب عن جميع الأسئلة الآتية:
السؤال الأول: (40% من الدرجة الكلية)

angel	value	p
α_1	30° 10' 20"	1
α_2	21 15 10	3
α_3	16 06 05	2
$\alpha_1 + \alpha_2$	51 25 27	4
$\alpha_2 + \alpha_3$	37 21 20	5
$\alpha_1 + \alpha_2 + \alpha_3$	67 31 40	1



الشكل السابق يبين شبكة مرصودة الزوايا والمطلوب:-

- 1 - حساب الاشتراطات الموجودة بالشبكة .
- 2 - كتابة المعادلات الشرطية بنفس ترتيبها بالجدول .
- 3 - استنتاج قانون تصحيح الشبكة بالطريقة البسيطة في حالة الاوزان المختلفة .
- 4 - حساب الزوايا المصححة في جدول مناسب بالطريقة البسيطة .

السؤال الثاني: (30% من الدرجة الكلية)

قمتين A&B مناسيهم علي التوالي 365.00m & 37.00 m والمسافة بينهم 96.4km وكان هناك قمة C
ثالثة في منتصف الخط AB منسوبها 67.00 m . المطلوب افحص تبادل الروية بين النقطتين A&B
وفي حالة عدم تبادل رؤية اوجد اقل ارتفاع لبرج يسمح بالرؤية .

السؤال الثالث: (30% من الدرجة الكلية)

منحني تجربة معملية علي الصوره الرياضية $y = \alpha x^2 + \beta x + \gamma$ حيث α, β, γ عباره عن ثوابت .
فاذا كانت القياسات المعملية للمتغير x والمتغير التابع لـ y هي كما بالجدول الموضح .

x	-3	-2	1	2	4
y	38.9	21.1	0	3.2	44.7

المطلوب طبقا لطريقة مربعات اقل مجموع (Least square techniques):-

- 1- حساب افضل قيم للثوابت α, β, γ
- 2- قيمة المتغير التابع y عندما تكون قيمة المتغير $x = 1.75$.

***** انتهت الاسئلة *****

مع اطيب التمنيات بالتوفيق
أ.د. يوسف علي عباس

امتحان طلاب المستوى الثالث (ساعات معتمدة)
مقرر (340 ج) ميكانيكا الصخور و جيولوجيا تركيبية

الزمن : 3 ساعات

يونيو 2017

PART I: ROCK MECHANICS (15 marks)

Write short notes on **THREE** of the following questions: (5 marks each)

1. Plastic behavior
2. Types of directed stresses.
3. Homogeneous strain.
4. Mechanics of folding.

PART II: STRUCTURAL GEOLOGY (30 marks)

ANSWER THE FOLLOWING **TWO** QUESTIONS:

Try to Illustrate your answers with suitable drawings when possible

- I. Choose the correct answer for FIVE of the following statements, and then rewrite in your answer paper (5 marks)

1. The topographically lowest point of a fold, which need not coincide with the fold hinge
Trough - basin - Culmination (1 mark)
2. On a listric fault the hanging-wall block rotates around an axis that is
a- parallel to the fault surface
b- perpendicular to the fault surface
c- oblique to the fault surface (1 mark)
3. is a series of folds within a particular unit or series of units
A fold train - Synclinalorium - Folded belt (1 mark)
4. is a fault rock consisting of loose or loosely bound angular rock fragments often in a gouge matrix.
Mylonite - Fault breccias - Pseudotachylite (1 mark)
5. are tight folds in which the fold limbs fold back on themselves so that the angle between the fold limbs at the hinge of the fold has a negative value
Ptygmatic folds - Recumbent folds - Isoclinal folds (1 mark)
- 6- The horizontal component of dip separation is called..... (1 mark)
Throw - Heave - dip slip

باقى الأسئلة فى الصفحة التالية

II. COMPARE AND CONTRAST BETWEEN THE FOLLOWING: (12 MARKS)

a) Restraining bend , and Releasing bend along a strike-slip fault.

b) Parallel folds and Similar folds

ANSWER ONLY THREE OF THE FOLLOWING QUESTIONS:

III. Explain how folds may develop as an indirect result of the action of a shearing stress. (6 marks)

IV- Write short notes on :

(6 marks)

a- Field criteria of faults.

b- Fold classification based on the orientation of the hinge line and the axial surface.

V- Define and illustrate by drawings:

(6 marks)

Isoclinal folds - Monoclines - Listric fault - Salt dome

Half graben - Pull-apart basin

VI. Write a concise account on :

(6 marks)

a) Relation of faulting to stress according to Anderson's theory.

b) Structures associated with strike-slip faults.

GOOD LUCK

Prof. Dr. Mohammed A. Hassan

Prof. Dr. Moustafa M. Youssef