Assiut University
Faculty of Science
Geology Department

Level two examinations
Course No. G234

Time allowed: 2 hours **Total Marks (50)** **May, 2019**

Answer the following Questions:

1. **Define <u>ONLY FIVE</u> of the following:-** **(10 Marks)**

   Plane of symmetry – Closed form – Prism – General form – Dome – Octahedron

2. Write the Miller's indices and number of faces for **<u>ONLY FIVE</u>** of the following forms:- **(5 Marks)**

   Orthorhombic bipyramid – Ditrigonal scalenohedron – a-dome – Icositetrahedron – Dihexagonal prism – Tetragonal prism 2<u>nd</u> order

3. Draw stereograms for **<u>ONLY FIVE</u>** of the following forms and write their names:- **(15 Marks)**

   a) { 201} in orthorhombic system
   b) { 210} in tetragonal system
   c) { 210} in cubic system
   d) { 1010} in trigonal system
   e) { 11$\bar{2}$1} in hexagonal system
   f) { 221}in orthorhombic system
   g) { 221} in cubic system

4. Define **<u>ONLY FIVE</u>** of the following: **(10 Marks)**
   Becke-line –Twinkling – Pleochroism – Extinction angle – Indicatrix – Double refraction

5. If the refractive indices of a crystal are $n_x = 1.55 = b$, $n_y = 1.6 = a$ and $n_z = 1.75 = c$, what is the: **(10 Marks)**
   a) crystal system,
   b) shape of the indicatrix
   c) type of extinction in a section parallel to (010)
   d) interference figure of a section parallel to (001)
   e) optic sign

Good Luck, Prof.Dr. Wagih Bishara

يعقد الامتحان الشفهي عقب التحريري مباشرة بمكتب أ.د/ وجيه بشاره

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

Second Semester Final Examination
Geology Students, 2nd Level
(Vertebrate Paleontology and Origin of Species)

May 2019	G 216	50 Marks	Time: 2 hours

PART ONE (VERTEBRATE PALEONTOLOGY)

First Question (5marks).
Which of the following sentences is true and which is false, correct the false one:

1- The adult forms of Urochordata are mobile and feeds via pharyngeal slits....( )

2- The cephalaspids are advanced than heterostracans in the presence of lateral stabilizers.....( )

3- *Acanthostega* and *Icthyostega* are characterized by occurrence of digits as well as *Tiktaalik roseae*.....( )

4- Reptiles are classified on the basis of the number of openings in their skull...( )

5- Birds are evolved from Theropod dinosaurs in the Triassic period.....( )

Second Question (10marks)
Write on the following:

1- The Origin of Birds.

2- Synapsid is a very important group of Reptiles, explain and describe its geologic history.

3- Evolution of jaw in jawed fishes.

4- Characterization of Subclass: Labyrinthodontia and its geologic importance.

Third Question (5marks)
Choose the correct answer:

1- Galeaspids are having the largest number of gills among the jawed fish.....
a. True b. False

2- What was the 1st group of fish to evolve?
a. Bony fish b. Jawless fish c. Cartilage fish d. Goldfish

3- *Dorudon* is belonging to .....
a. Mammals b. Fishes c. Reptiles d. Amphibians

4- Amphibians are firstly evolved during.....
a. Devonian b. Carboniferous c. Triassic d. Permian

5- *Moas* is belonging to.....Birds.
a. Paleocene b. Pleistocene c. Cretaceous d. Eocene

Fourth Question (5marks)
Give the correct ages for the given species

1. *Spinosaurus aegyptiacus*
2. *Tiktaalik roseae*
3. *plesiosaur*
4. *Hesperornithiformes*
5. *Ophiacodon*

Good Luck,,, *Examiner: Dr. Amr Abdel Sabour*

Part TWO: Origin of Species (25 marks)

Answer the following questions

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

A- Development of a new species by anagenesis means growing of new species from a parent species that still exists.
B- Dominance indices downweight the rare species.
C- Ecological isolation means that two species live in different habitats have a good chance of interaction.
D- In biology, definition of population is extended to mean any collection of individual items or units, which are subject of investigation.
E- Homologous structures are organs differ in structure but often similar in function.

2- Define <u>Four Only</u> of the following: (8 marks; 2 marks each)

A- Species richness, B- Deductive statistics, C- Prokaryotes , D- Allopatric speciation, E- Behavioral isolation, F- Genetic drift.

3- Write briefly on <u>Three Only</u> of the following: (12 marks; 4 marks each)

A- Evidence of evolution.
B- Random sampling.
C- Postzygotic reproductive isolation.
D- Differentiate between the species dominance indices and information-statistic indices with examples.

End of Part Two

Examiner: Assoc. Prof. Dr. Amr S. Deaf ***Good Luck***

جامعة أسيوط
كلية العلوم - قسم الجيولوجيا

امتحان التحريرى لطلاب المستوى الثانى بكلية العلوم شعب الجيولوجيا – الجيوفيزياء – الجيولوجيا/ كيمياء
المقرر: علم الطبقات (٢١٠ ج)
الفصل الدراسى الثانى - العام الجامعى٢٠١٨/٢٠١٩م

الدرجة الكلية للأمتحان: ٥٠ درجة الزمن: ساعتان

ملحوظة الامتحان يتكون من ورقة واحدة على الوجهين

ANSWER THE FOLLOWING QUESTIONS (OBLIGATORY):

Question No. 1: Answer the following questions: *(10 marks; 5 marks each)*

a- Discuss the importance of fossil assemblages in biostratigraphy.
b- Write on chronostratigraphic classification.

Question No. 2: Choose if the following are (right) or (wrong): *(10 marks; one mark each)*

a- Glacial varves are used to correlate marine deposits.
b- $\delta^{13}C$ values can mark stage boundaries.
c- Relative time dating can be established by fossils.
d- Biostratigraphic classification includes Pedostratigraphic units.
e- Magnetostratigraphic polarity zones may consist of bodies of strata unified by a single polarity of magnetization.
f- Unconformity is considered a buried surface of erosion.
g- Dips of strata can not be measured in buried successions.
h- In biostratigraphy, some species are facies-controlled and others not.
i- Allostratigraphic units are bounded by conformable surfaces.
j- Physical properties of rocks are used in rock correlations.

ANSWER TWO ONLY FROM THE FOLLOWING QUESTIOS:

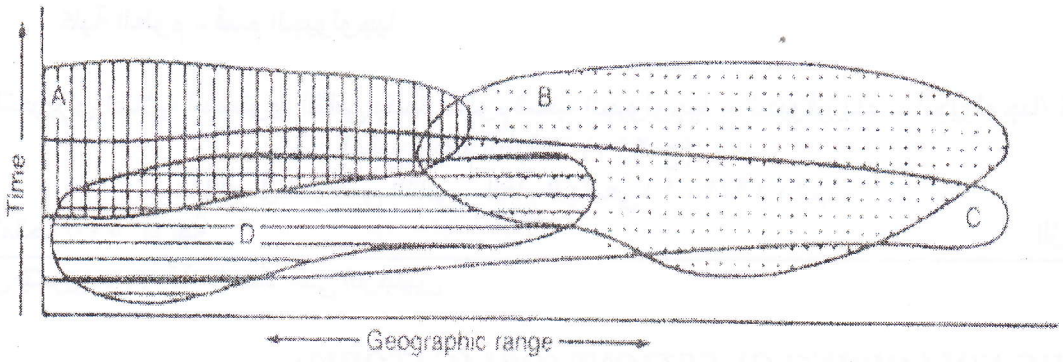
Question No. 3: Complete the missing word(s) in the following: *(15 marks; 3 marks each)*

a- ..... is a fundamental unit used in chronostratigraphy.
b- ..... is a mappable lithologic unit and can be distinguished from a distance.
c- Formation names such as "Nubia Sandstone" across different countries are not affected by ..... boundaries.
d- .....zone comprises the interval of overlap between the first appearance of one taxon and the last appearance of another different taxon.
e- The two-fold or three-fold divisions of Systems/Periods are based on .....

Question No. 4: Answer the following questions: *(15 marks; 5 marks each)*

a- Write briefly on lithostratigraphic classification.
b- What are the main subsurface data required in borehole stratigraphic analyses?

إقلب الصفحة ←



c- Comment on significance of the species overlap through space and time, as expressed by the given diagram above?

Question No. 5: Write briefly on: *(15 marks; 5 marks each)*

a- Uniformitarianism and catastrophism.
b- Development of an angular unconformity.
c- Contacts between rock units.

تمت الأسئلة مع أطيب الأمنيات بالتوفيق

Examiners:

Prof. Dr. Magdy S. Mahmoud (Geology Department)
Assoc. Prof. Dr. Amr S. Deaf (Geology Department)

Geology Department Faculty of Science Assiut University	Final Exam in Geogrsphic Information System (G 240)	June 2019 Total marks: 50 Time: 2 hours

Answer the following questions:

1- Define the following: *(10 marks)*

Network model – Interpolation – Map projection – Geoid – Cartesian coordinates

2- Write on the following: *(20 marks)*

a- Raster and Vector models.

b- Universal Transverse Mercator.

c- Data collection in GIS.

d- Database in GIS.

3- Explain how: *(15 marks)*

a- The Red Sea areas are characterized by heavy rainfall events, and it is required to establish new settlements there, show how can use GIS to select the most suitable place.

b- Using GIS and DRASTIC model, explain how can assess the groundwater vulnerability to contamination in the vicinity of solid waste disposal site.

4- Complete the following sentences: *(5 marks)*

1. ..... is surrounded by higher cells. It can artificially terminate streams by trapping flow.
2. In ....., each cell has a different value of the attribute.
3. Spatial data can be measured in ..... and ..... units.
4. ..... is used to estimate rainfall volume within a watershed.
5. ..... allows us to place a coordinate system on the earth's surface.

Good Luck .....

FACULTY OF SCIENCE

ASSIUT UNIVERSITY

Final Exam on Principals of Geophysics (G250)

(50 marks total)

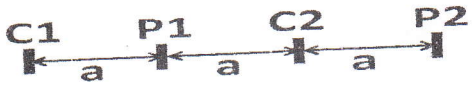
Time: 2 hours

June: 2019

ملحوظة: لن يتم تصحيح الاسئلة الزائدة عن العدد المطلوب

A) **Answer the following questions:** (Five marks each)

1- Calculate the geometric factor (K) of the electrode array sketched below



2- With the help of drawing explain the problems associated with the interpretation of seismic refraction data
3- Different corrections applied to gravity data

B) **Write the scientific term of *only five* of the following statements:** (Three marks each)

1- A critical angle of incidence that result in an angle of refraction equal 90^{o}
2- The deflection of north seeking pole from horizontal
3- It is the resistivity of an equivalent but fictitious half space and depends on electrode geometry and spacing
4- The ratio of the uniaxial stress to the uniaxial strain
5- The equipotential surface over which gravitational field has equal value
6- The absolute ability of material to become magnetized
7- A measure of how much force is needed to change the volume of the material without change in shape

C) **Write in brief on *only five* of the following:** (Four marks each)

1- List three different ways of electrical current conduction
2- Field procedure for seismic refraction survey
3- Common modes of electrical resistivity survey
4- Applications of magnetic method
5- Differences between primary and secondary seismic waves
6- Absolute measurements of gravity data
7- Archie's law and define all of its components
8- Components of Earth's magnetic field

Good luck.....

End of questions

Course Instructor, Prof. Dr. Gamal Zidan AbdelAal

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

Final Examination
Geology students 2nd Level
(Invertebrate Paleontology)

June 2019	G215	50 Marks	Time: 2 hours

Answer four only from the following questions: (Give illustrations if possible)

The First Question (12.5 Marks)

a. What are the differences between Planktonic, Benthonic and Pelagic marine organisms?
b. Discuss the main conditions for fossilization and the different mode of fossil preservation.

The Second Question (12.5 Marks)

a. Write on the wall and the morphology of foraminiferal shell.
b. Determine the ages of Fusuline limestone and Nummulitic limestone.

The Third Question (12.5 Marks)

1- Write on the shell morphology and different wall composition of Foraminifera.
2- Write on the development of Tetracoralla and their age.
3- What are the different types of Tabulata and their stratigraphic importance?

The Fourth Question (12.5 Marks)

Explain the following:

a. The type coiling in Gastropoda.
b. The wall structure characteristics in Brachiopoda.
c. Teeth in Pelecypoda.

The Fifth Question (12.5 Marks)

Illustrate in details:

a. Apical system in echinodea.
b. Irregularia in echinodermata.

The Sixth Question (12.5 Marks)

Describe the following:

a. Stratigraphic distribution of cephalopoda.
b. Suture line in ammonoidea.
c. Corona in echinoidea.

Good Luck,,,

Prof. Dr. Hasan A. Soliman *Prof. Dr. Adel A. Hegab*

Geology Department

Faculty of Science **Time: 2 H**

Assiut University **May. 2019**

Crystallography (233 G)

Answer the following quations:-

1-Indicate by the sign (✓) or (×): (10 marks)

1-All system contains pinacoid ( )
2-Rhombohedron present in hexagonal ( )
3-Tetragonal system contain 6 planes and one four axis ( )
4-Monoclinic system contains two planes ( )
5 Pyramid is closed form ( )
6-Prism is open form ( )
7-Scalenohedron is closed form ( )
8-Cube is closed form ( )
9-A dome is parallel to a axis ( )
10-Pidon has one face ( )

2-Sterographic projection of rhombohedron, scalenohedron, first order prism and second order prism in trigonal system with example mineral crystalline in this system (10 marks)

3-Sterographic projection of first order prism, second order prism, first order bipyrimadal and second order bipyrimadal in tetragonal system with example mineral crystalline in this system (10 marks)

3-Sterographic projection of first order cube, rhombo dodecahedron, octahedron, trioctahedron, trapezohedron and terahexahedron with example mineral crystalline in this system (20 marks)

Good luck

Prof. Dr. Mohamed Abd El-Raouf Hassan

جامعة أسيوط
كلية العلوم - قسم الجيولوجيا

امتحان التحريرى لطلاب المستوى الثانى (شعبة النبات)
المقرر: التحفر والحفريات النباتية (٢١٩ ج)
الفصل الدراسى الثانى - العام الجامعى٢٠١٨/٢٠١٩م

الدرجة الكلية للأمتحان: ٥٠ درجة الزمن: ساعتان

ملحوظة الامتحان يتكون من ورقة واحدة على الوجهين

ANSWER THE FOLLOWING QUESTIONS (OBLIGATORY):

Question No. 1: Choose if the following are (right) or (wrong): *(10 marks; one mark each)*

a- Small palynomorphs include wide range of organic-walled palynomorphs up to 200 µm in diameter.
b- Every organism that ever lived becomes part of the fossil record.
c- Scolecodonts and microforaminiferal test linings are considered palynomorphs.
d- The replacement as a fossil preservation process means crystallization within pores or openings.
e- Spores are relatively smaller in size than pollen grains.
f- Petrification is the process of turning an organism into a stone.
g- Colors of smooth spores can tentatively be used to infer degree of thermal maturity.
h- The process of fossilization appears to be site specific.
i- Dinoflagellates are photosynthetic unicellular aquatic organisms.
j- Ancient forms of life can be preserved only as unaltered parts.

Question No. 2: Answer the following questions: *(10 marks; 5 marks each)*

a- Illustrate, with drawings, different types of pollen openings.
b- Dinoflagellates can be applied in environmental reconstruction; explain.

Question No. 3: Choose the correct answer in the following: *(10 marks; 2 marks each)*

a- Which of the following processes cannot result in the preservation as altered body parts?
i- Permineralization ii- Replacement iii- Oxidation iv- Carbonization
b- The term "palynofacies" is introduced to include:
i- Palynomorphs and palynodebris ii- Amorphous organic matter and cuticles
iii- Marine and terrestrial palynomorphs iv- None of them
c- Which of the following fossils represent preservation as traces of activity?
i- Teeth ii- Shells iii- Wood iv- Coprolites
d- The walls of pollen grains and spores are made up of:
i- Resin ii- Silica iii- Carbonates iv- Chitin
e- Which of the following are not plant fossils?
i- Spores ii- Calcareous foraminifera iii- Pollen grains iv- Dinoflagellate cysts

أنظر خلفه ←

ANSWER <u>ONE ONLY</u> FROM THE FOLLOWING QUESTIOS:

<u>Question No. 4:</u> Answer the following questions: *<u>(20 marks; 10 marks each)</u>*

a- Write briefly on the impact of taphonomic stages during the fossilization process of pollen and spores.

b- Compare between moulds and casts.

<u>Question No. 5:</u> Write on: *<u>(20 marks; 10 marks each)</u>*

a- Processing small palynomorphs for light microscopy.

b- Kerogen types.

تمت الأسئلة مع أطيب الأمنيات بالتوفيق

Examiner:

Prof. Dr. Magdy S. Mahmoud (Geology Department)

Assiut University
Faculty of Science
Department of Geology

Final Exam for Rock – Forming Minerals (G 230) June 2019

Prof. Dr. Fawzy Farahat **Time allowed: 2 Hours**

A. Choose the correct answer:

1. Silicate structure in which one half of the tetrahedral sharing 3 oxygen atoms and the other half sharing with 2 oxygen atoms is called:

a. Nesosilicate. b. Sorosilicate. c. Cyclosilicate. d. Single chain silicate.
e. Double chain silicate f. Sheet silicate. (2 Marks)

2. Epidote group minerals are :

a. Nesosilicates b. Inosilicates c. Phyllosilicates d. Ring Silicates
e. Sorosilicates (2 Marks)

3. The formula of silicate ion present in Disilicates is:

a. $(Si_6O_{18})^{12-}$ b. $(Si_3O_9)^{2-}$ c. $(Si_2O_7)^{4-}$ d. $(Si_2O_7)^{6-}$ e. $(Si_2O_6)^{4-}$
(2 Marks)

4. Amphibole group minerals are crystallized at high temperature and need low – silica content.

a. False b. True. (2 Marks)

5a. Kyanite-Sillimanite-Andalusite silicate minerals are:

i. Polymorphs ii.Isomprphs

5b. Kyanite indicates
i. High pressure metamorphism ii. Low pressure metamorphism

5c. Sillimanite indicates
i. High temperature metamorphism ii. Low temperature metamorphism

5d. Andalusite indicates
i. High pressure metamorphism ii. Low pressure metamorphism (2 Marks)

6. The anhydrous silicate minerals are crystallized from the magma after the hydrous minerals.

a. False b. True. (2 Marks)

B. Fill the Spaces with Scientific terms:

7. Which mineral of the silica group is found only in extremely high pressure?. The mineral is ..... . (2 Marks)

8. What is the silicate class having the highest Si: O ratio?
..... . (2 Marks)

8. The feldspar groups are characterized by famous structure named :
..... (2 Marks)

9. Garnet group minerals are classified into two groups:
a. ..... b. ..... (2 Marks)

10. The classification of amphibole group minerals as ortho and clino- amphibole according to the identity of structural site ..... (2 Marks)

C. Answer the following questions?

11. What are the main differences between TOT- I Beam in the pyroxene and TOT strips in the amphibole?. (3 Marks)

15. Draw the structure of pyrophyllite and write the steps for its chemical formula. (3 Marks)

16. Draw the structure of biotite and write the steps for its chemical formula. (3 Marks)

17. Draw the structure of chlorite and write the steps for its chemical formula. (3 Marks)

18. Draw the structure of hedenbergite and write its chemical formula. (3 Marks)

19. Draw the structure of Aegirine and its chemical formula. (3 Marks)

20. Draw the structure of Anthophyllite and write its chemical formula. (3 Marks)