ASSIUT UNIVERSITY
FACULTY OF SCIENCE
GEOLOGY DEPARTMENT

Final Examination
Principals of Health and Safety (PG263)

Time: 2 hours	Total marks: 50	one page	Jan., 2020

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

1. ما المقصود بالسلامة والصحة المهنية وما هى مقوماتها وأهدافها
2. أذكر المحاور الفنية المختلفة فى مجال السلامة والصحة المهنية
3. ما هى المخاطر الفيزيائية وطرق الوقاية منها
4. أذكر اشتراطات السلامة الواجبة للحماية من المواد الكيميائية وكيفية الوقاية منها
5. ما هى المحاطر الكهربية وطرق الوقاية منها
6. أذكر انواع معدات الوقاية الشخصية
7. تحدث عن تصنيف الحرائق وطرق اطفاء الحريق

Good Luck…

Prof. Dr. Gamal Zidan AbdelAal

Assiut University
Faculty of Science
Geology Department

Level two examinations
Course No. G233

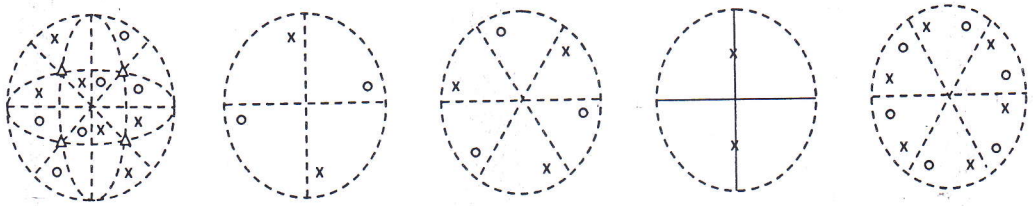
Time allowed: 2 hours **Total Marks (50)** **January, 2019**

Answer the following Questions:

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

   Open form – General form – Enantiomorphism – Prism – Tetrahedron - Crystal habit

2. Write the Hermann-Maugin symbols for the following stereograms and write the name of the form: **(10 Marks)**



A **B** **C** **D** **E**

3. Draw stereograms for **<u>ONLY SIX</u>** of the following forms and write their names:- **(30 Marks)**

   a) { 320} in class m3
   b) { 021} in class 222
   c) { 320} in class 4mm
   d) { $10\bar{1}0$} in class 32
   e) { $21\bar{3}1$} in class $\bar{6}$m2
   f) { $21\bar{3}1$ } in class 3m
   g) { 211} in class 43
   h) { 221} in class $\bar{4}$2m

Good Luck, Prof. Dr. Wagih Bishara

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

Geology Department
Faculty of Science
Assiut University

Time: 1 H
Jan. 2020

Crystallography (231 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 (5 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 (5 marks)

3-Sterographic projection of prism, domes, basal pinacoid and prism in monoclinic system with example mineral crystalline in this system (5 marks)

Good luck
Prof. Dr. Mohamed Abd El-Raouf Hassan

PART TWO: Mineralogy Final Exam (January 2020) [Total Marks 25]

Answer ONLY TWO QUESTIONS From the Following.

(Illustrate your answer with drawing as much as possible)

QUESTION No. 1 [Total 12½Marks]

A- Show the basic structural differences and the general formula characterize the (SiO_4) tetrahedral linkage in both the Inosilicate Single Chain group and the Double Chain Inosilicate group. On what basis you can classify the minerals belong to single chain group? Explain. What are the main characteristic chemical as well as the optical properties that distinguished minerals crystalline in single chain and those crystalline in double chain Inosilicate structure? Mention the names of the most important common minerals related for each group. (9 Marks)

B- How minerals could be classified upon genetic basis? (3½ Marks)

QUESTION No. 2 [Total 12½ Marks]

A- Show with drawing How the staking pattern along with the type of cation can be used to classify the minerals belonging to Phyllosilicate structure group. What are the other sub groups of minerals that belong also to this type of silicate structure? Give the general formula and the most distinguished physical and optical properties for at least two important minerals with this structure. (8½ Marks)

B-The plagioclase feldspar are solid solution series, What this means? What its importance in studying igneous rocks? What names and appropriate chemical compositions of minerals occur in this series?. What are their optical characters and important alteration products? (4 Marks)

QUESTION No.3 [Total 12½ Marks]

A- The minerals belonging to olivine group posses a distinct crystal symmetry with nearly same geometric arrangement of atoms; in spite of its difference end members chemical composition, What this means? Where olivine minerals formed in the Earth? What are its important optical properties? What are the common alteration products of this mineral group? Mention the names of other minerals belonging to this silicate structure. (5 Marks)

B- Correct the mineralogical knowledge for the following underlined minerals:

Galena has a chemical formula (FeS_2) crystallized in tricliniс system while Chalcopyrite has (CuS_2) chemical formula and crystallized in cubic system. Calcite crystallized in tetragonal system and Aragonite crystallized in monoclinic system and both are carbonate minerals characterized by perfect rhombohedral cleavage. Barite has chemical formula Ba Co_3 and crystallized in tetragonal system and has very low specific gravity, while Malachite has a chemical formula of Cu S_2 and crystallized in cubic system and characterize with its clear white color. Flourite has chemical formula Ca SO_4 H_2O with a characteristic cubic system while Gypsum has a chemical formula of Ca Co_3 and commonly formed in the magma chamber. (7½ Marks)

Good Luck بالتوفيق Examiner Prof. Dr. Nadia Sharara

Geology Department Faculty of Sciences Assiut University Second Level		First Term Examination Rock forming Minerals (230G) 29th January, 2019 Two hours

Answer the following question

FIRST QUESTION (20 MARKS; 40 MINUTES)

Choose the correct answerS

(1) The negative charge on the anion unit in the silicate minerals is .....

(a)one (b)two
(c) three (d) four
(e) five (f) six

(2) Garnet minerals group is belong to.....

(a) Single silicate minerals (b) Independent silicate minerals
(c) Neosilicate minerals (d) Inosilicate minerals.
(e) Isolated silicate minerals (f) Phyllosiliate minerals.

(3) Alkali feldspar minerals involve ..... minerals.

(a) plagioclase (b) sandine
(c) orthoclase (d) albite
(e) labradorite (f) microcline

(4) The number of natural polymorphus of SiO_2 is.....

(a)two (b) three
(c)six (d) eight
(e) nine (f) nothing

(5) The Si: O ratios in double chain silicate minerals are.....

(a)4:10 (b) 4: 11
(c)2:5 (d) 8:20
(e) 1:3 (f) 2:6

(6) Mafic minerals are rich in..... elements.

(a) Mg and Si (b)Mg and alkalis
(c)Mg and Al (d) Mg and Fe
(e) Al and alkalis (f) Si and alkalis

(7)..... abundance in the common olivines is used as a good geothermometer.

(a) Ca (b) Fe
(c)Mg (d) Si
(e) Al (f) Mn

(8) Alumino-silicates(Al_2SiO_5) minerals groups involves.....

(a) Andalusite (b) Sillimanite
(c) Kyanite (d) Andradite
(e) Almandine (f) Pyrope

(9) Epidote minerals have internal structure mix between.....

(a) single and double silicates
(b)single and double chains silicates
(c) single and chain silicates
(d) single and phyllosilicates
(e) single and tectosilicates
(f) only double silicates

(10) Si: O ratios in the cyclosilicate minerals are.....

(a)1:3
(b)1:4
(c)2:5
(d)2:7
(e) 3:9
(f) 6:18

(11) Clinopyroxene minerals are characterized by presence Ca in .....sites

(a) M1
(b)M2
(c)M1 and M2
(d) tetrahedron sites
(e) octahedron sites between the chains
(f) there is no Ca in clinopyroxene

(12) Common amphiobole minerals are characterized by presence two cations .... In X -sites.

(a)Ca
(b)Mg and Fe
(c)Na
(d)K
(e) Al
(f) Ti

(13)Biotite is.....

(a) dioctahedral, common mica
(b) dioctahedral, brittle mica
(c)trioctahedral, common mica
(d)trioctahedral brittle mica
(e) dioctahedral, uncommon mica
(f) trioctahedral, uncommon mica

(14) Perthite texture characterizes the .....

(a)plagioclase feldspar group
(b) alkali feldspar group
(c)potash feldspar group
(d) Ca-rich feldspar group
(e) mica mineral group.
(f)Na-K feldspar series.

(15) High-temperature alkali feldspar series is characterized by.....

(a) wide compositional range of exsolution
(b) homogenous compositional range
(c)inhomogeneous compositional range
(d) unmixing compositional range
(e) its occurrence in volcanic rocks
(f) its occurrence in plutonic rocks.

(16) Megascopic unmixing in K-feldspar minerals .....

(a) means rapid cooling
(b) means slow cooling
(c) occurs in the volcanic rocks
(d) occurs in the plutonic rocks
(e) is called perthite texture
(f) is called plagioclase feldspar.

(17) Serpentine minerals are.....minerals.

(a) sheet silicates
(b) framework silicates
(c) chain silicates
(d) tectosilicates
(e) phyllosilicates
(f) inosilicate

(18) ..... Is a pyroxene mineral.

(a) Enstatite
(b) Ferro-enstatite
(c) Diopside
(d) Hedenbergite
(e) Wollastonite
(f) hornblende

(19) ..... are not silicate minerals
(a) Olivine group minerals
(b) Garnet group minerals
(c) Aluminosilicate minerals.
(d) Pyroxene group minerals.
(e) Phyllosilicate minerals.
(f) Tectosilicate minerals.

(20) ..... are the most Si-rich minerals.
(a) Tectosilicate minerals
(b) Framework silicate minerals.
(c) Neosilicate minerals.
(d) Pyroxene group minerals. .
(e) Amphibole group minerals minerals.
(f) Inosilicate group minerals..

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Answer only<u>THREE</u> questions from the followings:

SECOND QUESTION (10 MARKS, 20 MINUTES)

Compare between the following pairs:

(1) Alkali feldspar and plagioclase feldspar!

Alkali feldspar	Plagioclase feldspars

(2) Clinopyroxene and orthopyroxene!

Clinopyroxenes	Orthopyroxenes

(3) Mucovite and biotite micas!

Muscovite	Biotite

(4) Pyroxene and pyroxenoid minerals!

Pyroxenes	Pyroxenoids

(5) Fayalite and forsterite minerals!

Fayalite	Forsterite

(6) Amphibole and pyroxene minerals!

Amphibole	pyroxene

(7) Single and double chain silicate minerals!

Single chain silicate	Double Chain Silica

(8) Quartz group mineral and feldspar group minerals!

Quartz group minerals	Feldspar group Minerals

(9) Common and brittle mica minerals

Common mica minerals	Brittle mica minerals

(10) Carbonate and silicate minerals

Common mica minerals	Brittle mica minerals

Third QUESTION (10 MARKS, 20 MINUTES)

Explain why?

(i) Ca in common olivine is a good geothermometer!

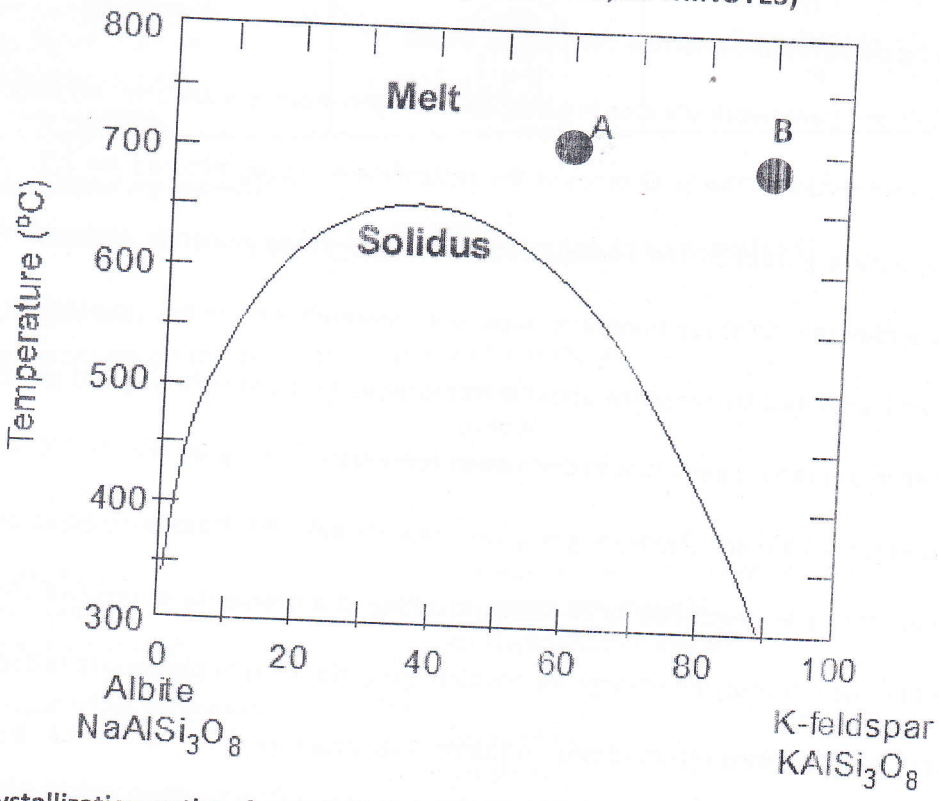
(ii) Alumino-silicate minerals are geo-thermobarometers!

(iii)The low-temperature alkali feldspar series exhibit wide compositional range of unmixing?

(v) Pyroxenoid minerals crystallize in triclinic system whereas clinopyroxene minerals crystallize in monoclinic system ?

(vi) Granitic rocks are rich in the tectosilicate minerals whereas the ultrabasic and basic rocks are rich in the neosilicate minerals.

FORTH QUESTION (10 MARKS; 20 MINUTES)



Constrain on the crystallization paths of a melts has composition (A) and (B) when the cooling rate is: (1) rapidly, (2) slowly to 600°C and (3) slowly to 500°C, illustrate by drawing!

FIFTH QUESTION (10 MARKS; 20 MINUTES)

Correct the following paragraph! Underline the correct word!

Tectosilicate minerals are framework silicates in which each oxygen atom is shared by two silicon octahedron forming nets extending in two directions. The Si: O ratios in the tectosilicate silicate minerals are 2:5. This group of mineral is the most common silicate groups in the Earth. It involves silica group minerals, feldspar minerals, feldspathoids minerals and zeolite minerals. Of these mineral groups, silica minerals are the less resistant to weathering. The silica minerals group is characterized by presence about 8 isomorphus that can help as good geothermobarometers. For example, the presence α-quartz means that theformation temperature is higher than 573°C whereas the presence of tridymite means meteorites impact. Feldspar group minerals are different from silica group minerals in that some of the octahedral silica atoms are replaced by Al atoms resulting in a deficiency in positive charge. This deficiency in charge is balanced by the introduction of large monovalent (e.g. Na, K) as in plagioclase feldspars or divalent cations (e.g. Ca) as in alkali feldspars into tetrahedrons in the crystals structure. It is important to denote that the feldspars series in the volcanic rocks are characterized by wide ranges of antiperthite textures whereas the feldspar sires in the plutonic rocks are greatly homogenous. The most common mixing compositions in the alkali feldspar series is called perthite intergrowths in which bodies of Ca-rich phases exsol

ved in the host phases rich in K. Compared to feldspar minerals, the feldspathoid minerals show less substitution of silicon ions by Al, resulted in minerals poor in alkalis contents. Therefore, we do not expect the feldspathoid minerals on silica-poor rocks.

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

Geology Department Faculty of Science Assiut University	Final Exam in Geogrsphic Information System (G 208)	January 2020 Total marks: 50 Time: 2 hours

Answer the following questions:

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

Georeferencing – Spatial resolution – UTM – Digitizing – GIS topology

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

a- TIN and raster models.

b- Map projection.

c- File formats in GIS.

d- Primary data capture in GIS.

3- Discuss the following: *(20 marks)*

a- Applications of GIS in urban planning.

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

c- GIS applications in geomorphology.

Good Luck .....

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

First Semester Final Examination
Zoology Students
(Paleontology)

January 2020	G211	50 Marks	Time: 2 hours

Answer the following questions:

First Question (15 marks)

Compare between the following:

1. **Microspheric and Megalospheric forms in Foraminifera.**
2. **Nautiloids and Ammonids.**
3. **Ostracoda carapace elements.**

Second Question (10 marks)

Choose the correct answer:

1- Coccolithophore is an expression to describe..... nannoplankton

a. Living b. Extinct

2- Foraminiferal wall structure is a stable morphological feature.....

a. True c. False

3- The Paleogene group of discoasters has recorded its first occurrence during the .....

a. Pliocene b. Paleocene c. Eocene

4- A group of microfossils can be used as a geo-thermometer indicator.....

a. Diatoms b. Nannofossils c. Conodonts d. Foraminifera

5- Family Fasciculithaceae is a common morphological type of .....

a. Holococcoliths b. Nannolith c. Heterococcoliths

6- Bivalvia prefer..... water

a. Fresh b. Brackish c. None of them d. All of them

7- Class Scyphozoa contains ..... amount of mesoglea

a. Large b. Small c. Intermediate d. No

8- The geologic range of Archaeocyatha is.....

a. Cambrian to Recent b. Devonian to Permian c. Cambrian d. Precambrian

9- The skeleton of Triaxonida is made up of.....

a. Organic matter b. Calcite c. Silica d. Aragonite

10- Group of fossils that have the oldest living hard shell organisms.....

a. Bivalvia b. Brachiopoda c. Ostracods

Continued.....

Third Question (15 marks)

Write on the following:

1- Different modes of fossil preservation.

2- Characterizations of index fossils, give some examples.

3- Dental plate in Pelecypoda.

Fourth Question (10 marks)

Put true (√) or false (x) in the front of the following sentences and correct the false one.

1- Bivalvia shell wall structure is made up of Silica..... ( )

2- Ceratitic suture line in Ammonidea is restricted to Triassic age..... ( )

3- The light intensity is directly controlled the distribution of Foraminifera..... ( )

4- Cornacuspongia that contains Ascon type ranges from Cambrian to Permian in age... ( )

5- Marine environments consider the best environment for fossil preservation..... ( )

6- During the Permian age Tetracoralla reach their maximum diversity..... ( )

7- The fossil remains of Hydrozoa are abundant from Cambrian to Recent..... ( )

8- The nannolith calcareous nannofossil group has a well-documented biologic affinity.. ( )

9- Formation of Diatomaceous sediments needs high energy environment..... ( )

10- Ostracods ornamentation reflects its habitat..... ( )

Good Luck

Dr. Amr Abdel-Sabour

Geology Department
Faculty of Science
Assiut University

Time: 2 H
Jap. 2020

Optical Mineralogy (235 G)

I-Indicate by the sign (✓) or (×) and correct the mistaken one (12 marks):

1-If we rotate the **biaxial** mineral around the minor axis we get a shape that is flattened along the rotation axis and is said to be optically negative (**uniaxial**) ( )
2-If we rotate the **biaxial** mineral around the major axis the ellipsoid is elongated along the rotation axis and is said to be optically positive (**uniaxial**) ( )
3-**Biaxial** materials have one principal symmetry axis and are tetragonal, hexagonal, or trigonal (**uniaxial**) ( )
4-Birefringence and thickness both **decrease** uniformly with increasing angle from the optic axis of uniaxial mineral (**increase**) ( )
5-There are one optic axis of **biaxial** minerals (**uniaxial**) ( )
6-Biaxial minerals are **cubic**, monoclinic or triclinic (**orthorhombic**) ( )
7-Isotropic mineral do **give** interference figures (**not give**) ( )
8-When 2V is acute about Z: (+) ( )
9-When 2V is acute about X: (-) ( )
10-When 2V = 0°, mineral is uniaxial ( )

Choose the correct answer of the following

11-The most characteristic mineral twins are
a-feldspar
b-bioteite
12-Cross-hatching occur in
a-hornblende
b-plagioclase
c-orthoclase
d-all these
13-A simple twin occur in
a-hornblende
b-plagioclase
c-orthoclase
d-all these
14-Polysynthetic or **albite** twins **occur in**
a-olivine
b-plagioclase
c-orthoclase
d-all these

15-parting occur in
a-olivine
b-plagioclase
c-orthoclase
d-all these
16-Biaxial minerals have
a-Two optic axis directions
b-One optic axis direction
c-no optic axis direction
17-Uniaxial minerals have
a-Two optic axis directions
b-One optic axis direction
c-no optic axis direction
18-Isotropic minerals have
a-Two optic axis directions
b-One optic axis directions
c-no optic axis direction

Write shorts notes on:

19-What the flash figures **(5Marks)**
20-What the meaning of extinction **(5Marks)**
21-Ray velocity surfaces of isotropic minerals is **(5Marks)**
22-Write on double refraction **(5Marks)**
23-What the interference figure of uniaxial mineral **(12 Marks)**

Good luck
Prof. Dr. Mohamed Abd El-Raouf Hassan

جامعة أسيوط
كلية العلوم - قسم الجيولوجيا

امتحان التحريرى لطلاب المستوى الثانى بكلية العلوم شعب الجيولوجيا – الجيوفيزياء – الجيولوجيا- كيمياء
المقرر: علم الطبقات (٢١٠ ج)
دور يناير - العام الجامعى ٢٠١٩-٢٠٢٠م

الدرجة الكلية للأمتحان: ٥٠ درجة الزمن: ساعتان

ملحوظة الامتحان يتكون من ورقة واحدة على الوجهين

ANSWER THE FOLLOWING QUESTION (Obligatory):

Question No. 1: Choose if the following are (right) or (wrong): *(5 marks; 0.5 mark each)*

a- Fossils may be valuable in recognizing lithostratigraphic units, but only as distinctive physical constituents or as rock forming constituents.
b- Bracketing relationships are used to estimate absolute rock ages.
c- A rock unit of a Jurassic-Cretaceous age means that this rock unit has only a Cretaceous age.
d- Biostratigraphy is the study and interpretation of layered rock sequences, based on their physical characteristics.
e- The fundamental taxonomic unit used in any refined biostratigraphy is the species.
f- Stratigraphic units are not limited by the political boundaries and have different naming across them.
g- Correlation of rock sequences in a given area on different basis (e.g. lithostratigraphic, chronostratigraphic, geochronologic or biostratigraphic) can be highly variable.
h- Numerical dating has traditionally formed the most important basis for chronostratigraphic classification.
i- The lithostratigraphic units are considered secondary units of geologic mapping.
j- Sedimentary rocks showing different colours due to change in their mineral composition can be used to infer the principal of superposition and nature of vertical contact.

ANSWER THREE ONLY FROM THE FOLLOWING QUESTIOS:

Question No. 2: Complete the missing word(s) in the following: *(15 marks; 3 marks each)*

a- ..... can give a partial picture of the subsurface geological environment (especially in areas where there is no exposure such as in tropical terrains and in areas with ice cover).
b- Naming of a lithostratigraphic unit consists of a geographic name plus a term indicating the rank of the unit such as .....
c- Iridium anomalies (southands of ppm) can be considered an indication of .....
d- Correlation of magnetostratigraphic units requires age adjustments using .....
e- Shapes of geophysical logs in subsurface drilling curves can give ideas about .....

Question No. 3: Answer the following questions: *(15 marks; 5 marks each)*

a- What are the different kinds of remnant magnetism?

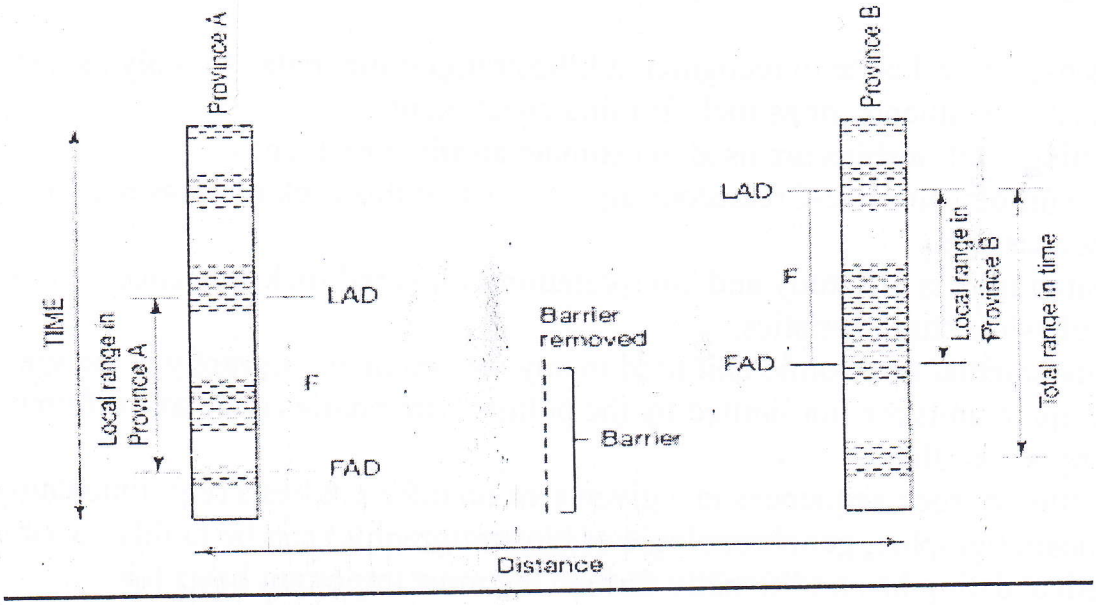
b- What are the general characteristics of lithostratigraphic units?

c- Write on the chronostratigraphic classification and the geologic time scale.

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

a- Write on the general characteristics applied for distinguishing between different rock formations.

b- As seen from the diagram below, explain how can the local range of a hypothetical species differs across distance and time in this region?



c- What are the limitations and advantages of core and ditch (cuttings) samples.

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

a- Law of superposition.

b- Types of stratigraphic correlations.

c- Nature of vertical and lateral contacts between sedimentary rock units.

تمت الأسئلة مع أطيب الأمنيات بالتوفيق

Examiners:

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

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

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

First Semester Final Examination
Geology students 2nd Level
(Invertebrate Paleontology)

December 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. Classification of marine organisms.
b. Main conditions for fossilization.
c. Different modes of fossilization.

The Second Question (12.5 Marks)

a. The structure of Archaeocyatha shell and its exact age.
b. Write on the development of Tetracoralla, their age and their relation to Hexacoralla.
c. Write on the shell morphology and different wall composition of Foraminifera.

The Third Question (12.5 Marks)

What do you know about the importance of index fossils? Give some examples in the geological history.

The Fourth Question (12.5 Marks)

Explain the following:

a. Apical system in echinodermata.
b. Skeleton of Crinoidea.
c. Type of coiling and shape of in Gastropoda.

The Fifth Question (12.5 Marks)

Give short notes about:

a. Morphology test of Brachiopoda.
b. Geological history of Cephalopoda.

The Sixth Question (12.5 Marks)

a. Belemnites in Coleoidea.
b. Suture line in ammonoidea.

Good Luck,,,

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

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

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

Jan 2020	G 216	50 Marks	Time: 2 hours

PART I: VERTEBRATE PALEONTOLOGY (25 degreee)

First Question (5 marks).

Choose the correct answer

1- *Basilosaurus* is……..

A. Mammals B. Fishs C. Reptiles D. Amphibians

2- *Ichthyornithiformes* is belonging to……Birds.

A. Paleocene B. Pleistocene C. Cretaceous D. Eocene

3- The describtion of mammal-like reptiles usually describe……

A. Anapsids B. Synapsids C. Diapsids

4- *Bahariasaurus ingens* is one of the Egyptian dinosaurs of the…… age.

A. Maastrichtian B. Campanian C. Cenomanian

5- Order Anthracosauria is known as……

A. Lizards B. Frogs C. Marine reptiles D. None of them

Second Question (5 marks)

Complete the following sentences

1- The first Egyptian mammal fossils (whale fossils) were collected from Geziret al-Qarn in the Lake Qarun from…… Formation.

2- The Placodermi lived from ……to the end of the ……

3- Amphibians became common in……and saw virtual extinction during……..

4- The oldest Tetrapods discovered are …….. and……..

5- The Reptiles originally appeared during……Period, when they first evolved from……..

Third Question (10 marks)

Write briefly on the following:

1- Origin of jaws in Jaws Fish.
2- Characteristics of Amphibians.
3- Main Reptile groups
4- Characteristics of *Tiktaalik roseae.*

Fourth Question (5 marks)

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

1- *Elephant Bird* is one of the most important flight Pleistocene Birds…….. ( )
2- Pterosaurs existed from the late Triassic to the end of the Cretaceous…….. ( )
3- The limbs of the earliest Tetrapods first evolved for walking on land…….. ( )
4- Acanthodians jaws fish ranged from Silurian to Permian Period…….. ( )
5- Anapsid is an ancestor of the first turtles, which appeared in the Triassic….. ( )

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

Part II: Origin of Species (25 degrees)

Answer the following questions

1- Write briefly on TWO only of the following: (10 marks; 5 marks each)

A- Adaptive radiation as a mean of allopatric speciation (with drawings).
B- Differentiate between the Shannon-Wiener index and Simpson index.
C- Prezygotic reproductive isolation.

2- Define FIVE Only of the following: (10 marks; 2 marks each)

A- Microevolution, B- Genetic drift, C- Random sampling, D- Prokaryotes, E- Species richness, F- Ecological species concept.

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

A- Deductive statistics are used to organize, summarize and describe measures of a sample.
B- Dominance indices are heavily weighted towards the most commonest species, but it can be used to indicate species diversity.
C- In statistic, population means all individuals of a species interact with one another to maintain a homogenous gee pool.
D- Biodiversity may be expressed in a number of ways for example species richness or by various indices that take into account richness and abundance.
E- Similarities among embryos of different vertebrates point to a common ancestor.

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

Good Luck

Assoc. Prof. Dr. Amr S. Deaf

Dr. Amr A. Abdelhamid

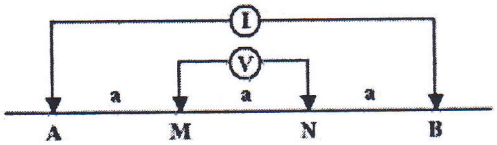
ASSIUT UNIVERSITY
FACULTY OF SCIENCE
GEOLOGY DEPARTMENT

Final Examination
Principals of Geophysics (G250)

Time: 2 hours	Total marks: 50	one page	Jan., 2020

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

1. Explain with drawing the Sato and Mooney model for Mineralization Potential in SP method.
2. Calculate the geometric factor (K) of the electrode array sketched below



3. Discuss with drawing two problems associated with the interpretation of seismic refraction data.

B) Provide short answers for <u>only ten</u> of the followings: (*Three and half marks each*)

1. Common modes/techniques of electrical resistivity field survey
2. The formula of Archie's law and define all of its components
3. Three different ways of electrical current conduction
4. The source mechanisms of self-potentials
5. The different component of non-polarizable electrode
6. The field techniques for measuring the self-potential
7. Different types of seismic waves
8. Instrumentation used for seismic refraction field survey
9. Applications of seismic refraction method
10. List the different corrections applied to gravity data
11. Methods for measuring the absolute gravity acceleration "g".
12. The procedure for gravity survey on land
13. The three sources of earth's magnetic field
14. Applications of magnetic method
15. The definition of inclination, declination and magnetic susceptibility

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

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

Second Level Examination in

Geomorphology and Environmental Geology (201G)

Time: Two Hours *(Total degrees 50)* **23-Dec. - 2018**

PART I

GEOMORPHOLOGY (25 degree)

أجب في نفس ورق الأسئلة

A) - Complete the Following: *(Illustrate when possible)*

1- Development of geomorphic features is affected by both: *(2degree)*

a-The exogenic processes which means .....

Such as ..... And

b- The ..... **Processes which means** .....

Such as .....

2-Base level is: ..... *(1degree)*

a. the level associated with the base of a river channel
b. the normal elevation of a reservoir
c. the level above which flood waters will not rise
d. the level below which streams will not erode

3-A drainage basin is ..... *(1 degree)*

a- The length of a large river.
b- A lake or ocean into which a river drains.
c- The lowest level a river can erode
d- The total area drained by a stream and its tributaries.

4- Asymmetrical cross profiles of valleys is due to: *(3degree)*

a. .....
b. .....
c. .....
d. .....

5. Inversion of topography means either: *(3 degree)*

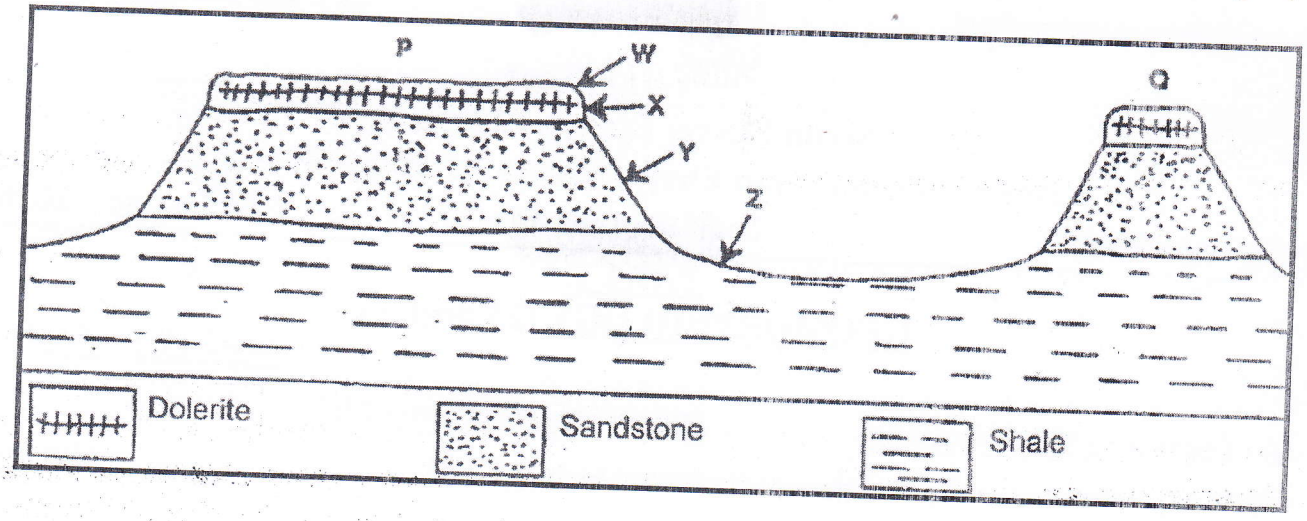
A- .....

Such as; 1) ..... *,2)* ..... *and*

B- .....

Such as; 1) ..... *,2)* .....

6- Refer to the figure below showing a landscape found in Africa. Choose the answer and write only the letter (a– d) next to the question number. *(3degree)*



Identify landforms P ..... **and Q**..... **respectively.**

a- What evidence in the figure suggests that landforms P and Q developed from the same landform that existed earlier? .....

.....

b- Which rock type in the figure is the most resistant to erosion? .....

c- Give ONE reason for your answer to question c. .....

d- Briefly describe how landform P will change into landform Q. .....

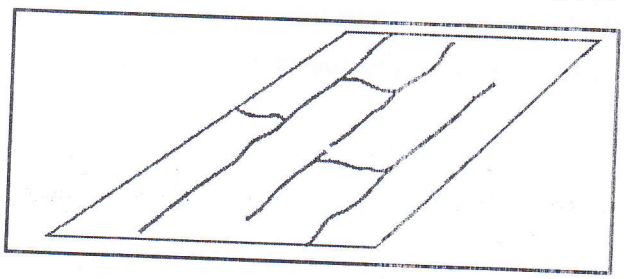
.....

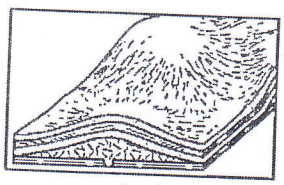
.....

7-The diagram below represents a map view of a stream drainage pattern. *(2 degree)*

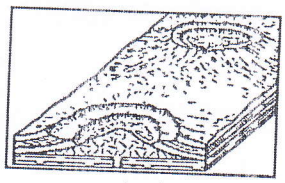
Which underlying bedrock structure most likely produced this stream drainage pattern?.....

Why? .....

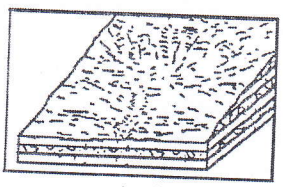




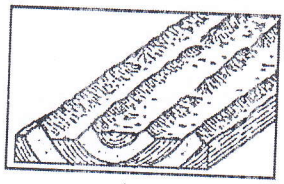
(1)



(3)



(2)



(4)

B) - Answer the following question (In the following Sheet): *(10 degree)*

8) Discuss briefly the **Scarps** associated with **both faults** and **domal structural** *(6degree)*

9) Complexity of geomorphic evolution is most, common than simplicity; therefore landscapes can be grouped into various categories, Discuss. *(4degree)*

PART TWO
ENVIROMENTAL GEOLOGY (25 degree)

الامتحان في خمس صفحات

أجب في نفس ورق الأسئلة

I- (Questions 1-13, one mark for each);

Select the letter (a, b, c, d, or e) of the choice that BEST answers the question. Each question has ONLY one correct answer.

1- Planetary bodies with rocky surfaces have regolith but the Earth's regolith is unique because

.....

.....

.....

.....

.....

2- Planets farther from the Sun

a. contained mainly high-temperature materials
b. contained few minerals with very high melting temperatures
c. are too cold for water to exist as both a liquid and a gas

3--A system can be defined as.....

.....

.....

.....

.....

4- When changes are made in one part of a closed system, the results of those changes will eventually affect other parts of the system (explain that).

5-The Banded iron ore was formed during

a. Precambrian b. Cambrian c. Mesozoic
d. Cenozoic e. All above

6 -Angle of Repose is .....

.....

.....

.....

7 -Topple-is

a. free vertical drop of material from a cliff or steep slope.
b. a block turning round
c. mass sliding along well-defined failure surface
d. all above

8-The main factors that influence slope stability are:

a-.....
b-.....
c-.....
d-.....

9 -Slope Remediation Techniques involve:

a-.....

b-.....

c-.....

10-Magmas with low silica content and higher melting temperatures

a. tend to be lower in temperature than those of high silica content.
b. tend to be higher in temperature than those of high silica content
c. tend to produce explosive eruptions.

11- Inactive volcano is .....
.....
.....

12- High viscous magmas lead to ..... eruption

13- Rhyolite/dacite flows will retain low slope fronts because of low viscosity (yes or no)

==========

II- Answer only 3 from the following: (4 marks for each)

1- **Discuss briefly: the potential effects of human interruption on climate that can cause imbalances in the global carbon cycle**

2- **Discuss briefly: the Evolution of Earth's Atmosphere**

3- **The life on the earth has had an intense influence on the chemical evolution of the Earth's lithosphere and atmosphere. Explain that?**

4- **Effects of volcanism on climatic changes?**