جامعة أسيوط
كلية العلوم - قسم الجيولوجيا

كلية العلوم

امتحان التحريرى لطلاب المستوى الثانى بقسم الجيولوجيا (جميع الشعب)
المقرر: علم الطبقات (٢١٠ ج)
الفصل الثانى (دور يونيو) - العام الجامعى ٢٠٢٤-٢٠٢٥م

الزمن: ساعتان — الدرجة الكلية للامتحان: ٥٠ درجة

Answer the following questions:

Q1: Choose if the following statements are true (√) or false (X) (10 marks; 1mark each)

1- The "Member" is the basic lithostratigraphic unit.
2- Sediments that intrude into pre-existing rocks conform to law of superposition.
3- Stable carbon isotopes can be used in the recognition of stage boundaries.
4- Sets of magnetic polarity reversals in sedimentary sequences can be correlated between sections worldwide.
5- Lithostratigraphy deals with spatial arrangement of rock units and is independent of time.
6- In biostratigraphy we correlate rock successions using their physical characters, such as rock constituents and structures.
7- In stratigraphy we place rock units into a chronological order.
8- Fossils may be important in the recognition of a lithostratigraphic unit, but as adistinctive physical constituent.
9- A "Formation" may consist of one type of lithology or a variety of lithologies.
10- Correlation in stratigraphy can be carried out in local/regional areas only.

Q2: Shade the correct answer; A, B, C or D (5 marks; 1mark each)

1- Geologic periods mark .....with pronounced unconformities separating the systems.
A- minor transgressive/regressive cycles B- major transgressive/regressive cycles
C- mass extinction events D- non-eustatic sea level changes

2- The principal of superposition means that .....
A- igneous rocks form in horizontal layers B- all rocks in the earth are layered horizontally
C- sediments are younger from base to top D- sediments are younger from top to base

3- Geologic processes that acted in the past .....
A- stopped working today B- still working today
C- worked only during the Mesozoic D- worked for a short time periods

4- If a "Stratotype" is no longer exist a ..... must be determined.
A- "Holostratotype" B- "Neostratotype" C- "Parastratorype" D- "Lectostratotype"

5- If you have a planktonic dating; what type of stratigraphic and dating method is this?
A- Isotope stratigraphy, absolute dating B- Lithostratigraphy, relative dating
C- Chronostratigraphy, absolute dating D- Biostratigraphy, relative dating

Q3: Answer the following question: (15 marks; 5 marks each)

- Write in detail on **three only** of the following:
A- Angular unconformity B- Interval biozones
C- Time in stratigraphy D- Geologic time-keepers

Q4: Write an account on one only of the following: (10 marks)

A- Principles and application of magnetic stratigraphy B- Sea-level changes

Q5: Answer the following question: (10 marks; 5 marks each)

- Write shortly on: A- Lithostratigraphic units B- Uniformitarianism and catastrophism

إنتهت الأسئلة مع أطيب الأمنيات بالتوفيق

Examiners: *Prof. Dr. Magdy S. Mahmoud & Prof. Dr. Amr S. Deaf (Geology Department)*

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

Crystallography (G233)

Time: Two Hours — Mau., 2025

Total Marks (50)

Answer the following questions (30 Marks):

1-Sterographic projection of the following forms:
Octahedron, Rhombic-dodecahedron, Trioctahedra and Trapezohedra, in cubic system (10 Marks)

2-Sterographic projection of the following forms:
First order prism, Second order prism, Ditetragonal prism and Second order bipyramidal in tetragonal system. (10 Marks)

3-Sterographic projection of the following forms:
Prism, A-dome, B-dome and bipyramidal in monoclinic system. (10 Marks)

4-Indicate by the sign (✓) or (×): (10 Marks)

1-All system contain 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 ( )

5-CHOOSE THE CORRECT ANSWER OF THE FOLLOWING (10 Marks)

11-Prism form is: a-open b-closed c-both
12-First order prism has miller index: a-110 b-100 c-hko
13-Ditetragonal prism has miller index: a-110 b-100 c-hko
14-Bipyramid is: a-open b-closed c-compound
15-Ditetragonal bipyramid has: a-12 faces b-8 faces c-16 faces
16-Trapezohedron is: a-closed form b-open form c-both
17-Scalenohedron is: a-closed form b-open form c-both
18-Second order prism has miller index: a-110 b-100 c-hko
19-Miller index of octahern: a-110 b-100 c-111
20-Pbasal pincoid has miller index: a-010 b-100 c-001

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Assiut University
Faculty of Science
Geology Department

Fossilization and Plant Fossils G219
Written Exam
2nd Semester, 2025

Answer the following questions

Q1: Chose the correct answer (5 marks: 1 mark each)

1- The classification of spores and pollen grains at generic and specific levels is based on:
a- aperture & ornamentation b- wall structure & ornamentation
c- grain size & grain symmetry d- none of them

2- Hard parts of fossils include:
a- bones b- teeth c- shells d- wood e- all of them

3- Extraction of palynomorphs from sediments using the standard HCl/HF acid treatment is based on the concept that:
a- Palynomorphs are made of organic walls that are resistant to non-fumic acids
b- Palynomorphs are sensitive to oxidation and diagenesis processes
c- Palynomorphs are very small entities that are not sensitive to acids or alkali treatment
d- None of them

4- Trilete spores are characterized by.....symmetry.
a- isopolar b- radial c- bilateral d- heteropolar

5- Entombment of body fossils inside amber includes:
a- recrystallization b- carbonization c- petrification e- none of them

Q2: Mark the correct and the wrong statements, and correct the wrong (10 marks: 2 marks each)

1- In the standard HCl/HF extraction technique of palynomorphs, oxidation is an essential step.
2- External molds preserve ornamental details of surface patterns.
3- Dinoflagellates are classified using the International Code of Zoological Nomenclature (ICZN) as protozoans.
4- In spores, aperture is located at the proximal face.
5- Width and displacement of cingulum are important criteria used in classification of dinoflagellates.

Q3: Define Only Five of the following (10 marks: 2 marks each)

Burrows, mesophragm, gastoliths, spores, coprolites, biostratinomy, sporopollenin.

Q4: Write briefly on Only TWO of the following: (25 marks: 12.5 marks each)

1- Aperture, symmetry, and sculpture in fossil spore grains (with drawings).
2- Alteration of fossil body parts.
3- Cavation in dinoflagellate cyst wall (with drawings).

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

Examiner: **Prof. Amr S. Deaf**

Good Luck

4. Foraminiferal wall structure is considered a genetically unstable feature of the test.

5. The lateral teeth in Bivalvia dental plate are marked by its large size and sit beneath the umbo.

B. Choose the correct answer (5 degrees, 1 each).

1. The earliest foraminifera are known from the.....Period

A. Devonian B. Triassic C. Cambrian D. Jurassic

2. During..... period, Oysters formed banks that could reach more than 5 meters in thickness.

A. Cretaceous B. Paleocene C. Jurassic D. Triassic

3. The closed posterior end in Gastropod shells known as.....

A. Protoconch B. Siphon canal C. Operculum D. Apex

4. Trilobites reached their acme during..... boundary

A. Cambrian/ Ordovician B. Paleocene/Eocene C. Jurassic/Triassic D. Permian/Triassic

5. ..... works as a system for gas-exchange in foraminiferal living cell.

A. Mitochondria B. Ribosomes C. Golgi body D. Nuclei

Fourth question (10 degrees, 5 degrees each)
Compare between the following items

1. Brachiopoda and Bivalvia

2. Megalospheric and microspheric forms in foraminifera

Fifth question (10 degrees, 5 degrees each)
Write on the following

1. Evolution of suture line in Cephalopods.

2. Types of foraminiferal wall structure.

انتهت الأسئلة.....بالتوفيق والنجاح

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

Second Semester Final Examination
Geology Students
(Invertebrate Paleontology)

June 2025	G215	50 Marks	Time: 2 hours

ملحوظة: الامتحان يتكون من ورقة واحدة على الوجهين

Answer the following questions

First question (5 degrees, 1 degree each)
Write the scientific term in front of the following definitions

1. The middle layer in Bivalvia shell which is composed of calcite crystals arranged perpendicular to the surface of the shell.

2. The study of the biological aspects of fossils such as evolution, adaptation, and behavior of fossil species.

3. Long strings of ectoplasm in foraminifera living cell that branch very often and surrounded by a fluid layer.

4. Marine invertebrate that resembles bivalve but has two or more arms of ciliated tentacles.

5. Teeth in Bivalvia dental plate which is characterized by very large size and lie on both sides of the central ligament pit.

Second question (15 degree, 5 degrees each)

1. Write on the necessary conditions of fossilization.

2. Effect of salinity variations on foraminifera shells.

3. Describe Brachiopoda shell morphology.

Third question (10 degrees)

A. Put true or false in front of the following sentences (5 degrees, 1 each).

1. Oyster shells always have two equal valves.

2. Mold usually formed as a result of cast formation.

3. Inarticulate brachiopods are often the most common fossil brachiopods.

السؤال الخامس: (١٠ درجات .. يتم توزيعهم بالتساوى على كل اجابة فى موضعها المحدد)

تم أخذ مجموعة من القراءات باستخدام الميزان وكانت كالتالى (١.٦٤ – ٢.٠١ – ٢.٤٦ – ٢.٧٧ – ٣.٠٤ – ١.٥٦ – ١.٩١ – ١.٨٢) .. مع العلم أن الميزان تم نقله الى موضعه الثانى بعد النقطة الخامسة .. وكان منسوب النقطة الأولى (الروبير) = ٢٢.٢٢ متر .. المطلوب حساب مناسيب جميع نقاط الميزانية باستخدام طريقة الارتفاع والانخفاض

النقطة	قراءات الميزانية			الارتفاع (+)	الانخفاض (-)	مناسيب نقاط الميزانية	ملاحظات
	خلفية	متوسطة	أمامية				
A							
B							
C							
D							
E							
F							
G							

مع تمنياتى بالتوفيق والنجاح .....

د. هيثم محمد أبو العيون أحمد

السؤال الرابع: (١٠ درجات .. يتم توزيعهم بالتساوى على كل اجابة فى موضعها المحدد)

تم أخذ مجموعة من القراءات باستخدام الميزان وكانت كالتالى (٠.٨٠ – ٢.١٠ – ١.٥٠ – ٠.٥٠ – ٣.٤٠ – ١.٧٠ – ٢.٦٠) .. مع العلم أن الميزان تم نقله الى موضعه الثانى بعد النقطة الرابعة .. وكان منسوب النقطة الأولى (الروبير) = ١٠.٥٠ متر .. المطلوب حساب مناسيب جميع نقاط الميزانية باستخدام طريقة منسوب سطح الميزان (مع التحقق من صحة الميزانية)

النقطة	قراءات الميزانية			منسوب سطح الميزان	مناسيب نقاط الميزانية	ملاحظات
	خلفية	متوسطة	أمامية			
١						
٢						
٣						
٤						
٥						
٦						
المجموع						

التحقق من صحة الميزانية:

.....

.....

٥١

السؤال الثالث: (١٠ درجات .. يتم توزيعهم بالتساوى على كل اجابة فى موضعها المحدد)

تم أخذ مجموعة من القراءات باستخدام الميزان وكانت كالتالى (٠.٨٠ – ٠.٥٠ – ٣.٤٠ – ٢.٦٠ – ٢.٨٠ – ٣.٣٠) .. مع العلم أن الميزان تم نقله الى موضعه الثانى بعد النقطة الثانية .. ثم تم نقله الى موضعه الثالث بعد النقطة الثالثة .. وكان منسوب النقطة الأولى (الروبير) = ١٠.٥٠ متر .. المطلوب حساب مناسيب جميع نقاط الميزانية باستخدام طريقة الارتفاع والانخفاض (مع التحقق من صحة الميزانية)

النقطة	قراءات الميزانية			الارتفاع (+)	الانخفاض (-)	مناسيب نقاط الميزانية	ملاحظات
	خلفية	متوسطة	أمامية				
١							
٢							
٣							
٤							
المجموع							

التحقق من صحة الميزانية:

.....

.....

.....

.....

٤) يمكن تقسيم مقياس رسم الخريطة الى الأنواع التالية:

١. مقياس رسم .....
٢. مقياس رسم .....
٣. مقياس رسم ..... والذى ينقسم حسب الدقة المطلوبة الى:

- مقياس رسم .....
- مقياس رسم .....
- مقياس رسم .....

٥) ارسم مقياس رسم طولى للمقياس النسبى ١ : ١٠٠٠

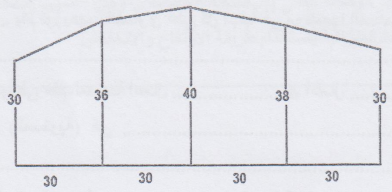
.....
.....

٦) ارسم مقياس رسم طولى للمقياس النسبى ١ : ٥٠٠٠ .. بحيث تكون دقة المقياس ١٠ أمتار

.....
.....
.....
.....

السؤال الثانى: (١٠ درجات .. يتم توزيعهم بالتساوى على كل اجابة فى موضعها المحدد)

١) اذا كان المطلوب حساب مساحة الشكل التالى باستخدام طريقة أشباه المنحرفات وطريقة سيمبسون



المساحة بطريقة أشباه المنحرفات = ...

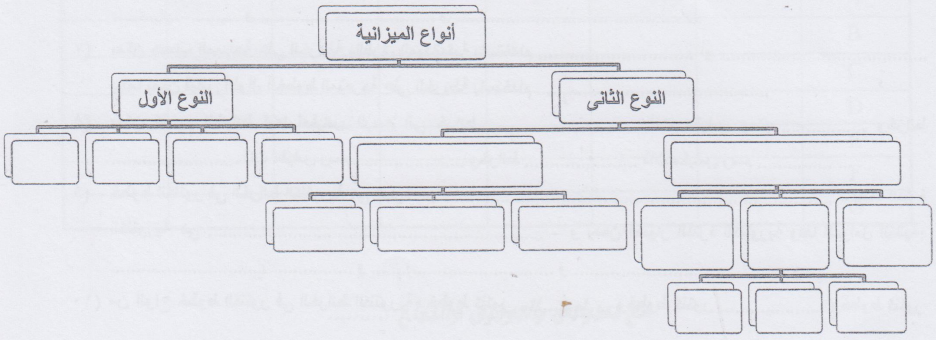
$$Area = 0.50 * B[(h_1 + h_{N+1}) + 2(h_2 + h_3 + h_4 + \cdots + h_N)]$$

المساحة بطريقة سيمبسون = ...

$$Area = \frac{B}{3}[(h_1 + h_{N+1}) + 4(h_2 + h_4 + \cdots + h_N) + 2(h_3 + h_5 + \cdots + h_{N-1})]$$

الطريقة الأدق هى طريقة .....

٢) أكمل الشكل التالى .. والذى يوضح أنواع الميزانية:



٣) حامل الشعرات فى جهاز الميزان يحتوى على الشعرة ..... والتى قراءتها تستخدم فى ..... – كما يحتوى حامل الشعرات على الشعرات ..... والتى تسمى ..... والتى قراءتها تستخدم فى .....

جامعة أسيوط – كلية الهندسة – قسم الهندسة المدنية
امتحان الفصل الدراسى الثانى ٢٠٢٤ / ٢٠٢٥
مقرر: المساحة المستوية – كود: ٢٠٠ هـ
قسم جيولوجيا – كلية العلوم
درجة الامتحان: ٥٠ درجة – زمن الامتحان: ساعتين

This Exam measures ILOs (c6, c12, c15, d1, d2 & d8)

- ✓ الامتحان مكون من خمسة أسئلة فى ستة صفحات
- ✓ على الطالب الاجابة على جميع الاسئلة فى المكان المخصص للاجابة .. لن يتم الالتفات الى الاجابات فى غير موضعها المحدد

السؤال الأول: (١٠ درجات .. يتم توزيعهم بالتساوى على كل اجابة فى موضعها المحدد)

١) علم المساحة هو .....

٢) من الأعمال الأساسية فى علم المساحة أعمال ..... & أعمال .....

٣) المساحة الأرضية (المستوية) هى ..... بينما المساحة الجيوديسية هى ..... – ويمكن تقسيم المساحة الأرضية (المستوية) الى المساحة ..... والمساحة .....

٤) الطول هو ..... بينما المسافة هى .....

٥) الشريط المستخدم فى قياس الأطوال فى الطبيعة بطريقة مباشرة من أنواعه:
   ١. شريط .....
   ٢. شريط .....
   ٣. شريط .....
   ٤. شريط .....

٦) من الأدوات المساعدة مع الشريط فى قياس الأطوال ..... و ..... و ..... و ..... و .....

٧) يمكن حساب المساحة على الخريطة بالطرق الميكانيكية باستخدام ..... أو ..... بينما يمكن قياس أطوال الخطوط المتعرجة على الخريطة باستخدام .....

٨) يمكن تقسيم الخرائط تبعا لمقياس الرسم الى خرائط ..... ذات مقياس رسم ..... وخرائط ..... ذات مقياس رسم ..... وخرائط ..... ذات مقياس رسم .....

٩) خطوط الكنتور فى الخرائط الكنتورية هى عبارة عن ..... – بينما الفترة الكنتورية هى ..... – و يمكن اختيار الفترة الكنتورية وفقا للعوامل التالية: ..... و ..... و .....

١٠) من أنواع خطوط الكنتور فى الخرائط الكنتورية: خطوط كنتور ..... وخطوط كنتور ..... وخطوط كنتور .....

١١) مقياس رسم الخريطة هو .....

١٢) نقطة الدوران فى أعمال الميزانية هى النقطة التى عندها قراءة ..... ثم قراءة .....

١٣) يستخدم الميزان فى ..... بينما التيودوليت يستخدم فى .....

44) To record arrival times of seismic waves on land we use:
a) Hydrophones b) electrodes c) geophones d) resistivity meters

45) One of the problems in interpretations of seismic refraction data is:
a) the increase in velocity with depth b) hidden layers c) low resistivity layers d) none the above

46) Seismic refraction method can be used to:
a) depth and thickness of geologic strata b) depth to bedrock c) depth to water table d) all the above

47) Which of the following represents geometric factor (G) of wenner array:
a) $G = 2\pi a$ b) $G = 4\pi a$ c) $G = \pi a$ d) $G = 3\pi a$

48) We can increase the penetration depth in electrical resistivity by:
a) decreasing the current electrode spacing
b) decreasing potential electrode spacing
c) increasing the potential electrode spacing
d) increasing the current electrode spacing

49) Which of the following geophysical methods can be used to map depth to bedrock:
a) Self-Potential b) Seismic refraction c) Electrical resistivity d) b and c

50) The interpretation of self-potential method is mostly:
a) Qualitatively b) quantitively c) both qualitatively and quantitatively d) semi-qualitatively

Second question: Choose three ONLY to answer: (15 marks)

1) What is the *critical distance* in seismic refraction surveying? What is the *crossover* distance? What is a *head wave*? What are supercritical reflections? Explain your answer with schematic representation.

2) What are the apparent resistivity formulas for the electrodes configurations for (a) Wenner, (b) Schlumberger, and (c) double-dipole? What are the four common shapes of apparent resistivity curves for a layered structure consisting of three horizontal layers?

3) Using the definition of the geomagnetic elements, the geomagnetic field can be described by north (X), east (Y) and vertically downward (Z) Cartesian components. Derive the definition by the angles of declination (D) and inclination (I) together with the total field intensity (F).

4) What is the geoid? Using schematic representation, show how the geoid reacts with mass excess in the subsurface.

End of questions

GOOD LUCK

Prof. Assoc. Mostafa Thabet

) The correction of gravity data due to elevation only is called:
a) drift correction b) free air correction c) latitude correction d) bouguer correction

31) The correction of gravity data due to the variation in density of earth materials is called:
a) drift correction b) free air correction c) latitude correction d) bouguer correction

32) The correction of gravity data due to environmental changes or tidal effect is called:
a) drift correction b) free air correction c) latitude correction d) bouguer correction

33) The following formula $g_\lambda = 978031.8\,(1 + 0.0053024\sin^2\lambda - 0.0000059\sin^2 2\lambda)\,\text{mGal}$) is known as:

a) IGPF b) IGF c) IGRF d) IGKF

34) The Eötvös correction is huge and may reach:
a) ~2.5 mGal per km/h b) ~5 mGal per km/h c) ~15 mGal per km/h d) none the above

35) Rock density can be determined by:
a) borehole gravity measurements b) Nettleton's method c) Nafe-Drake curves d) all the above

36) The parameters which affect the elapse time of transmission of a pulse from its source to the detector are:
a) Propagation velocity of the seismic wave
b) electrical resistivity of the subsurface
c) Geometry of the propagation path
d) a and c

37) Bulk modulus is defined as:
a) shear stress over shear strain
b) volume stress over volume strain
c) shear stress over volume strain
d) volume stress over shear strain

38) Which of the following can support shear forces:
a) Gases b) liquids c) solids d) a and b

39) Primary seismic waves can travel through:
a) Gases b) liquids c) solids d) all the above

40) The primary seismic waves are:
a) slower than secondary seismic waves
b) faster than secondary seismic waves
c) equal in speed to the secondary seismic waves
d) none the above

41) which of the following considers surface waves:
a) Primary waves b) Love waves c) Secondary waves d) none the above

42) The following characterize the surface waves:
a) travel along the outer part of the Earth b) have complex motions
c) causes greatest destruction d) all the above

43) The angle of incidence that results in an angle of refraction equals to 90° is called:
a) absolute angle of refraction b) relative angle of refraction
c) critical angle of refraction d) none the above

14) which of the followings are disadvantages of resistivity method:
a) the electrode must be in a good contact with soil
b) culture problems causing interference
c) highly conductive or resistive surface layer
d) all the above

15) Subsurface cavities filled with air will show:
a) resistive response b) conductive response c) no response d) all the above

16) Areas of seepage in dam investigations will show:
a) resistive response b) conductive response c) no response d) all the above

17) Self-potentials are generated by a number of natural sources such as:
a) presence of metallic minerals b) fluid streaming c) electrochemical reactions d) all the above

18) Self-potential method is best suited for the exploration of:
a) velocity of seismic layers b) massive ore deposits c) electrical resistivity of layers d) all the above

19) The presence of sulfide ore deposits can result in:
a) Low positive SP anomaly b) high negative SP anomaly
c) high positive SP anomaly d) Low negative SP anomaly

20) Electrokinetic potential may result from the gradient in:
a) Pressure b) temperature c) ion concentration d) none the above

21) Electrochemical potential is also called:
a) liquid-junction potential b) Bioelectric potential c) streaming potential d) a and b

22) To make Self-Potential measurements we need:
a) High impedance voltmeter b) electric wires c) non-polarizable electrodes d) all the above

23) The non-polarizable electrode is consisting of:
a) porous pot b) metallic electrode
c) super saturated solution of the same electrode d) all the above

24) One of the electrode configurations for self-potential survey is:
a) Wenner b) dipole-dipole c) leap-frog d) none the above

25) SP anomalies are often interpreted qualitatively by:
a) Profile shape b) Amplitude c) number of layers d) a and b

26) The normal gravity acceleration at the surface of the earth equals to:
a) 9.8 m/s^2 b) 980 Gal c) 9800 g.u. d) all the above

27) The variation in gravity acceleration from the pole to the equator equals to:
a) 10% b) 5% c) 1% d) d. 0.5 %

28) The most factor controlling the density of sedimentary rocks is:
a) Compaction b) age c) depth of burial d) porosity and fluid content

29) The typical station spacing for near surface targets (e.g., archaeology) in gravity survey is:
a) 1000's of m b) few meters c) 100's of m d) 10's of m

Assiut University
Faculty of Science
Geology Department

جامعة أسيوط
كلية العلوم
قسم الجيولوجيا

Second Semester, Second Level Final Examination

Time: 2 hours	Total marks: 50	Fundamentals of Geophysics (G250)	May, 2025

First question: Choose the correct answer: **(35 marks)**

1) The physical property of rocks that is most commonly utilized in electrical resistivity method is:
a) Density b) Magnetic susceptibility c) Elasticity d) Electrical resistively or conductivity

2) The physical property of rocks that is most commonly utilized in seismic method is:
a) Acoustic velocity b) Density c) Magnetic susceptibility d) Electrical resistively or conductivity

3) The electrical conduction occurred by the slightly displacement of electrons to their nucli is called:
a) electronic conduction b) electrolytic conduction c) dielectric conduction d) atomic conduction

4) The electrical conduction occurred by the free electrons in metallic minerals is called:
a) electronic conduction b) electrolytic conduction c) dielectric conduction d) atomic conduction

5) The SI unit of electrical resistivity is:
a) Ohm b) m/sec c) ohm.m d) siemens/m

6) Which of the followings control the resistivity of clay free and saturated rocks in Archie's law:
a) pore fluid saturation b) resistivity of pore fluid c) pore water resistivity d) all the above

7) Which of the following control the electrical resistivity of earth materials:
a) magnetic susceptibility b) water content c) porosity d) b and c

8) The presence of clay minerals tends to decrease the resistivity because clay minerals:
a) can combine with water
b) can absorb cations in an exchangeable state on the surface
c) tend to ionize and contribute to the supply of free ions
d) all the above

9) True resistivity can be obtained when the subsurface is:
a) isotropic and homogeneous b) anisotropic and homogenous
c) isotropic and inhomogeneous d) anisotropic and inhomogeneous

10) The most common electrode arrays are:
a) Wenner array b) Sato and Money Array c) Archie's array d) all the above

11) Choosing the best electrode array for resistivity survey depends on:
a) type of structure to be mapped b) sensitivity of the resistivity meter
c) background noise level d) all the above

12) Which of the following techniques are used for electrical resistivity field survey:
a) Sounding b) leap frog c) common midpoint d) a and c

13) Quantitative interpretation of resistivity sounding data can provide information about:
a) density of electrical resistivity layers
b) velocity of electrical resistivity layers
c) depth to electrical resistivity layers
d) none the above

5. **The X-value, called the Easting, has a value of _____ at the central meridian of each zone in the UTM coordinate system.**
   a) 10,000,000 m. b) 1,000,000 m. c) 750,000 m. d) 500,000 m.

6. **_____ occur when the shared boundary of two polygons does not meet exactly.**
   a) Overlaps b) Slivers c) Gaps d) Symmetrical difference

7. **City names such as New York, Tokyo, or London refer to _____.**
   a) Nominal locations b) Absolute locations
   c) Relative locations d) None of them

8. **A source of potential error in an aerial photograph is the _____ which arises from the three-dimensional aspect of terrain features.**
   a) Curvature b) Orthophoto c) Relief displacement d) Error propagation

9. **Landsat-7 satellite maintains _____ radiometric resolution for its bands and can therefore record values for each pixel that range from 0 to 255.**
   a) 4-bit b) 8-bit c) 12-bit d) 16-bit

10. **A raster model with pixels representing 10 m by 10 m in the real world would be said to have a spatial resolution of _____**
    a) 100 m b) 20 m c) 10 m d) 1 m

11. **The global World Geodetic System of 1984 datum uses the _____ as the origin of the geographic coordinate system and is used for defining locations across the globe.**
    a) Sea level b) Ground elevation c) Centre of the Earth d) None of them

12. **In ArcMap, the _____ provides a page view where map elements such as the data frame, a scale bar, and a map title, are arranged on a page for map printing.**
    a) Data frame b) Layout view c) Table of contents d) Symbology

13. **_____ refers to define and describe places in relation to other known locations. For instance, Cairo, Egypt, is north of Johannesburg, South Africa.**
    a) Nominal location b) Absolute location c) Relative location d) None of them

14. **Universal Transverse Mercator (UTM) used from _____**
    a) Latitudes 84°N to 84°S b) Latitudes 84°N to 80°S
    c) Latitudes 80°N to 84°S d) Latitudes 80°N to 80°S

15. **Zone 1 in the UTM system is from _____ longitudes.**
    a) 180°W to 170°W b) 180°W to 160°W
    c) 180°W to 174°W d) 180°W to 164°W

Good Luck,,,

Assoc. Prof. Rashad Sawires

Assiut University
Faculty of Science
Department of Geology

جامعة أسيوط
كلية العلوم
قسم الجيولوجيا

2024/2025 Second Semester, Final Examination		
16 May 2025	On: Geographic Information System (G-240)	Time: 2 hours

Answer ONLY the required questions, illustrating your answer by suitable sketches wherever possible:

First Question: Answer ONLY TWO questions from the following: **(20 marks)**

1. Write short notes highlighting the key differences between the Universal Transverse Mercator (**UTM**), Egyptian Transverse Mercator (**ETM**), and Modified Transverse Mercator (**MTM**) coordinate systems used in Egypt, focusing on the geodetic datum, number of zones or belts, zone width, and reference latitude.
2. Briefly compare **spatial, temporal, spectral, and radiometric resolutions** in remote sensing, highlighting their definitions and key differences.
3. Compare **raster and vector data** in GIS, focusing on their structure, data representation, resolution, storage needs, advantages, disadvantages, and common uses.

Second Question: GIS is a powerful tool used in many fields to analyze and understand spatial data. It helps in making better decisions in different fields. **Can you list five common applications of GIS across different fields?** **(5 marks)**

Third Question: Compare between ONLY TWO from the following concepts: **(10 marks)**

a) Active vs. passive satellites
b) Small-scale vs. large-scale maps
c) Equidistant vs. conformal projections
d) Geostationary vs. sun-synchronous satellites

Fourth Question: Choose the correct answer: **(15 marks)**

1. **Online maps and GISs are _____ because we can zoom in and out at will.**
   a) Large-scale maps b) Small-scale maps
   c) Scaleless maps d) None of them
2. **Polygons that can be drawn at a constant distance around every feature in a layer, or at a distance that varies according to attribute values are called _____**
   a) Overlays b) Boundaries c) Buffers d) None of them
3. **If a certain location has the following geographic coordinates (longitude 39° 10′ 17″E and latitude 21° 29′ 55″N), the corresponding UTM zone will be:**
   a) Q36 b) Q37 c) R36 d) R37
4. **Each UTM zone divided into _____ East/West bands, each 8° high lettered from the south pole using C through X letters.**
   a) Twenty b) Twenty-one c) Twenty-two d) Twenty-three

Choose the correct answer of the following (8 marks):

18-Isotropic mineral have
a-Two optic axis directions b-One optic axis direction
c-no optic axis direction

19-Biaxial minerals have
a-Two optic axis directions b-One optic axis direction
c-no optic axis direction

20-Uniaxial minerals have
a-Two optic axis directions b-One optic axis direction
c-no optic axis direction

21-The most characteristic mineral twins are
a-feldspar b-bioteite c-muscovite

22-Cross-hatching occur in
a-hornblende b-plagioclase c-microcline

23-A simple twin occur in
a-hornblende b-plagioclase c-orthoclase

24-Polysynthetic or albite twins occur in
a-olivine b-plagioclase c-orthoclase

25-Parting occur in
a-olivine b-plagioclase c-orthoclase

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

Crystallography and mineralogy (G234)

Time: Two Hours — Mau., 2025

Total Marks (50)

Answer the following questions (25 Marks):

1-Sterographic projection of the following forms:
Octahedron, Rhombic-dodecahedron, Trioctahedra and Trapezohedra, in cubic system (9 Marks)

2-Sterographic projection of the following forms:
First order prism, Second order prism, Ditetragonal prism and Second order bipyramidal in tetragonal system. (8 Marks)

3-Sterographic projection of the following forms:
Prism, A-dome, B-dome and bipyramidal in monoclinic system. (8 Marks)

4-Indicate by the sign (✓) or (×) (17 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 ( )
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 ( )
3-Biaxial materials have one principal symmetry axis and are tetragonal, hexagonal, or trigonal ( )
4-Birefringence and thickness both decrease uniformly with increasing angle from the optic axis of uniaxial mineral ( )
5-There are one optic axis of biaxial minerals ( )
6-Biaxial minerals are cubic, monoclinic or triclinic ( )
7-Isotropic mineral do give interference figures ( )
8-When 2V is acute about Z: (+) ( )
9-When 2V is acute about X: (-) ( )
10-When 2V = 0°, mineral is uniaxial ( )
11-Olivine has parting ( )
12-Pyroxene has two cleavage ( )
13-Amphiboles have two cleavage ( )
14-biotite has one cleavage ( )
15-All uniaxial minerals show parallel extinction ( )
16-Orthrohombic minerals show parallel extinction ( )
17-The indicatrix is a sphere of isotropic mineral ( )

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20. The olivine phase diagram (5 points)

18 a) What is the structure of mucovite ?.

b) write the steps of mucovite formation (5 points)

19. How TOT strips of amphibole are formed? Answer with drawing (5 points)

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10. Chemical formula of Garnet group is .....and the garnet minerals are classified into two groups named as ..... and ..... (2 points)

11. The isomorphism is..... and give example of isomorphic minerals..... (2 points)

12. What is the mineral hold only by covalent bonds? ..... (2 points)

13. Which minerals of the silica group is found only in extremely high pressure?

The minerals are..... (2 points)

14. Pyroxene and amphibole are classified into ortho- or clino pyroxene/amphibole according to the identity of structural site.....in pyroxene and structural site.....in amphibole. (2points)

15. Draw the structure of diopside. (2 points)

16. Draw the structure of hypersthene. (2 points)

C. Write briefly on the following:

17. a) What is the structure of margarite

b) write the steps of margarite formation ?. (5 points)

Assiut University

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Final Exam for Rock – Forming Minerals (G 230)

Prof. Dr. Fawzy Farahat Second Semester, June 2025 Time allowed: 2 Hours

A. Choose the Correct answer: Total Points=50

1. Double chain and sheet silicates group minerals are anhydrous minerals. (2 points)

a. False b. True.

2. Epidote and zeosite minerals are examples of: (2 points)

a. Inosilicates, b. Phyllosilicates, c. Orthosilicates d. Sorosilicates e.Cyclosilicates

3. Wollastonite mineral is belongs to: (2 points)

a. Double chain silicate b. Disilicate c. Single chain silicate d. sheet silicate e. pyroxenoid

4. Pyrophyllite mineral is example of: (2 points)

a. TOT b. TOT+C c. TO d. TOT+O Structure

5. The general formula of silicate ion presents in sorosilicate is: (2 points)

a. $(SiO4)^{4-}$ b. $(Si2O5)^{2-}$ c. $(Si2O7)^{6-}$ d. $(Si_nO_{3n})^{2n-}$ e. $(Si2O5)^{4-}$ f. $(Si2O7)^{4-}$

6. β-Quartz is high-temperature and low symmetry? (2 points)

a. True b. False

7. Feldspar and silica groups are tectosilicates, while clintonite and margarite are sheet silicates.

a. True b. False (2 points)

8. Match minerals in group I with the corresponding silicate structures in group II. (2 points)

Group I	Group II
Sillimanite	Inosilicates
Lamprobolite	Nesosilicates
Bytownite	Double chain silicates
Spodumene	Tectosilicates

B. Answer the following questions and fill the spaces with scientific terms:

9. Arrange the following minerals which crystallized from the magma according to the decreasing degrees of temperature (From high to low temperature). (2 points)

a. Biotite b. orthoclase c. hornblende d. olivine e. quartz f. pyroxene g. muscovite