
	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY			
	Petroleum & Mining Geology Program (PMGP)			
	Final Exam For The Second Level of PMGP Students			
	Course Title:	Optical Mineralogy		Course Code: PMGE 2101
Date:	8/3/ 2021	First Semester	Total assessment marks: 180	Time allowed: 120 Min.

Part I (100 marks)

A. Electronic Exam (60 marks)

1. Mark (T) or (F) of the following phrases:(30 marks)

- 1-1. There is no optic axis in isotropic minerals.
- 1-2. The normal sections of the anisotropic minerals give rise to the highest optical properties.
- 1-3. Extinction position is relevant to the isotropism.
- 1-4. Isogyres refer to parallelism of polarizer vibration. .
- 1-5. Michel Levy Chart is used to determine optic sign.
- 1-6. Grey or yellow first order interference colors is most common in feldspar minerals.
- 1-7. Twinkling is most common optical feature in feldspar minerals.
- 1-8. When retardation equals zero increase, the mineral said to be isotropic.
- 1-9. When the retardation decrease, the ordering of interference color for minerals increase.
- 1-10. When the length FAST of the mineral parallel to length FAST of gypsum plate, the mineral said to be negative.
- 1-11. When the length FAST of gypsum plate parallel to the length SLOW of the mineral, it said to be positive.
- 1-12. Mica plate is mostly used to determine sign of elongation.
- 1-13. Quartz wedge is used to determine the optic sign of low birefringent minerals.
- 1-14. When the mineral has high order, you must use quartz wedge.
- 1-15. When the mineral has one set of cleavage, you must measure the cleavage angle.

2. Read carefully the following phrases and choose the correct answer between the brackets (A-D).(30 marks)

- 2-1. To examine the minerals under petrographic microscope, the light used must be:
 (A) Ordinary light (B) Polarized light (C) Mirror reflector (D) All
- 2-2. The technique of preparation of the thin section which gives rise to more rapid and accurate is:
 (A) Manual (B) Automatic (C) Semi-automatic (D) All
- 2-3. The microscope required to examine thin sections of minerals and rocks is:
 (A) Polarizer microscope (B) Ordinary microscope (C) Reflected microscope (D) All

2-4. Twinkling is only seen between:

- (A) Convergent light (B) XPL (C) Polarized light (D) Ordinary light

2-5. Dichroic of colored mineral is produced from:

- (A) Uniaxial minerals (B) Biaxial minerals (C) Isotropic minerals (D) All

2-6. Trichroic of colored minerals is produced from :

- (A) Isotropic minerals (B) Biaxial minerals (C) Uniaxial minerals (D) All

2-7. Parallell extinction angle occurs in

- (A) Uniaxial minerals (B) Isotropic minerals (C) Biaxial minerals (D) Both A+C

2-8. Twinkling is well noted in:

- (A) colorless minerals (B) uniaxial carbonate minerals (C) very high birefringence (D) All

2-9. Pleochroic halos is produced by:

- (A) Radioactive decay of some minerals (B) Inclusions (C) Alteration (D) All

2-10. Refractive index plays an important role to produce optical properties such as:

- (A) Interference color ordering (B) Relief (C) Twinkling (D) All

B. Written Exam (40 marks)

3. Explain WHY? (5 marks per each)

3-1 Istropic minerals have only optical properties under ordinary light.

3-2 Some colored minerals have no pleochrism.

3-3 When the order of retardation equals zero, the interference color is black.

3-4 Isotropic indicatrix is alawys sphere.

3-5 Anisotropic indicatrix gives rise to the interfernce figures approaches.

3-6 Relief and refractive index have inter-relationship.

3-7 Colorless minerals have never seen pleochrism.

3-8 Thickness of the mineral thin section plays an important role of its order of interference color.

Part II (80 marks)

2

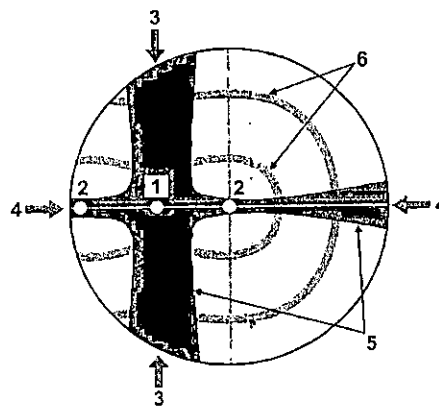
1-A- Tick (True) or (False) and correct the false one (40 marks)

1. Along the optic axis, the mineral behaves as if it was isotropic.
2. Uniaxial minerals belong to either the orthorhombic or tetragonal crystal systems.
3. If $OA > \sim 30^\circ$ to stage in uniaxial mineral, the melatope will appear in FOV.
4. The circular section in uniaxial indicatrix is spheroid with no radii.
5. In biaxial indicatrix $2V\alpha + 2V\gamma = 90^\circ$.
6. Melatope represents the optic axis itself.
7. In biaxial minerals, the smallest refractive index is the slowest ray speed.
8. A mineral that has sphere indicatrix is called biaxial.
9. In obtuse interference figure, both Melatopes lie within FOV when the $2V$ angle is $< 60^\circ$.
10. Types of interference figures controlled by cutting of the grain
11. Optic Axis figure results when the Bxa is perpendicular to the microscope stage.
12. Obtuse bisectrix interference Figure results when one Optic Axis (OA) is vertical to the stage.
13. The uniaxial indicatrix would take the form of an oblate spheroid when $n_\epsilon > n_\omega$.
14. When $2V_x < 90^\circ$, the mineral is positive optic sign.
15. In Acute bisectrix interference figure, when $n_{Bxo} = n_\alpha$, the optic sign is negative.
16. Maximum Birefringence in Biaxial mineral equal $|n_\alpha - n_\beta|$.
17. Anisotropic minerals always have more than one principal refractive index.
18. $2V$ is the obtuse angle between Optic axes in biaxial minerals.
19. Isogyres appear straight (no curvature) in centered Optic Axis Figure when $2V > 90^\circ$.
20. The optic sign is positive in uniaxial minerals when $\epsilon < \omega$.

1-B- Answer the following questions..... (40 marks)


1) In the shown figure:

- 1- Label each number, and what is the name of this interference figure? (10 pt.)
- 2- How to determine the optic sign of this interference figure and what does it mean? (10 pt.)



2) Draw a uniaxial highly off centered optic axis IF and label all of the parts. (8 pt.)

- 1- How to detect the optic sign using gypsum plate in the same figure? (6 pt.)
- 2- Explain what optic sign does mean. (6 pt.)

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY			<i>جامعة طنطا</i>
	EXAMINATION FOR (LEVEL 2) PETROLIUM & MINING PROGRAM			
COURSE TITLE:	Stratigraphy		CODE: PMGE-2206	
DATE:	JULY, 2020	SEMESTER: 2	TOTAL MARKS:100	TIME ALLOWED: 2 HOURS

Answer the following questions (Illustrate your answer with drawing):

Question 1:

(25 Marks)

Define and discuss:

- a- The law of faunal succession.
- b- Inclusion principle
- c- Angular unconformity

Question 2:

(25 Marks)

Write briefly on:

- a- Permian-Triassic extinction event.
- b- Four (4 only) physical evidence of correlation.
- c- Zombie effect.

Question 3:

(25 Marks)

a- What are the factors that control the dispersal and distribution of species of marine invertebrate organisms (Barriers to Dispersal)?

b- Discuss briefly the biostratigraphic Problems

Question 4:


(25 Marks)

Define and briefly discuss the following stratigraphic units:

- 1- Formation 2- Age and Stage 3- Total range zone 4- Abundance zone

Best wishes

Examiners	Prof. Dr. H. Khalil	Prof. Dr. A. Zalal
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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY			<i>مطالعات گریج</i>
	EXAMINATION FOR (LEVEL 2) PETROLIUM & MINING PROGRAM			
COURSE TITLE:	Stratigraphy		CODE: PMGE 2206	
DATE:	JULY, 2020	SEMESTER: 2	TOTAL MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions (Illustrate your answer with drawing):

Question 1:

(25 Marks)

Define and discuss:

- a- The law of faunal succession.
- b- Inclusion principle
- c- Angular unconformity

Question 2:

(25 Marks)

Write briefly on:

- a- Permian-Triassic extinction event.
- b- Four (4 only) physical evidence of correlation.
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Best wishes

Examiners	Prof. Dr. H. Khalil	Prof. Dr. A. Zalat
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c) The propagation of the seismic waves depends on plasticity of the medium.

3- Nearly all geophones currently used for seismic recording in marine (offshore) are of the electromagnetic type.

a) True

b) False

4- Seismic survey for oil exploration is belonging to

a) Geophysical active methods

b) Geophysical passive methods

c) Geophysical passive and active methods

5- Nearly all hydrophones and geophones currently used for seismic recording in marine (offshore) are pressure-sensitive phones (piezoelectric).

a. True

b. False

6- Airgun and sledge hammer are the main onshore seismic wave sources.

a) True

b) False

EXAMINERS	PROF. SHADIA TAHA ELKHODARY	DR. MOHAMED SALEM
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1989	COURSE TITLE:	Geophysics (2)		COURSE CODE: GE3226
DATE:	JANUARY, 2021	TERM: SECOND	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions (Sketch maps and diagrams should be drawn whenever possible).

Part I: (60 Minutes, Total Marks 50)

Answer of the following questions:-

1) Discuss each of the following : (30marks)

- Electrical Resistivity of Rocks.
- Types of Electrode Configuration.
- Factors affecting the resistivity of rocks and minerals.

2) What are the equipments for resistivity field work? (10marks)

3) Read each of the following statements and mark either (✓) if correct or (X) if wrong: (10marks)

- Materials whose pore spaces lacks water will show high resistivity. ()
- $\rho_1 > \rho_2 < \rho_3$ is A-type curve. ()
- $\rho_1 < \rho_2 > \rho_3$ is H-type curve. ()
- Quantitative interpretation includes determination of the resistivities and thicknesses of electrical horizons for VES field curves. ()
- Resistivity surveying is an efficient method for delineating very deep layered sequences. ()

Part II: (60 Minutes, Total Marks 50)

Answer the following questions:

I- How seismic waves are received I offshore and onshore environments?

II- Choose the best answer:



1- What is correct in the following?

- Velocity of Seismic P-waves < S-waves < surface waves.
- Velocity of Seismic P-waves > S-waves < surface waves.
- Velocity of Seismic P-waves > S-waves > surface waves.

2- What is wrong in the following?

- The propagation of the seismic waves depends only on density of the medium.
- The propagation of the seismic waves depends on elasticity of the medium.

باقي الأسئلة بالخلف

	DEPARTMENT OF GEOLOGY TANTA UNIVERSITY FACULTY OF SCIENCE		
	Examination for second level students of Petroleum & Mining Geology Program (PMGP)		
	COURSE TITLE:	MICROPALAEONTOLOGY	COURSE CODE: PMGE2107
DATE:	27 FEBRUARY, 2021	TERM: FIRST	TOTAL ASSESSMENT MARKS: 180 TIME ALLOWED: 2 HOURS

1) Answer Three only of the following questions: illustrating your answer with clear drawing:-

- a) Explain the main morphological characters of Diatom frustule? (20 Marks)
- b) Elucidate the different hinge structure in Ostracod carapace? (20 Marks)
- c) Describe the morphological features of Ostracoda carapace? (20 Marks)
- d) Write about the fossil record and evolutionary trends of diatoms? (20 Marks)

2) Write short notes on the following questions with clear drawings and give examples:

- a) Position of the apertures in Foraminifera. (Five only) (15 Marks)
- b) Mode of coiling. (15 Marks)
- c) General shape of the multilocular Test (Five only) (15 Marks)

3) Give Examples: (15 Marks)

- a) Coiled to uniserial arrangement
- b) Spinose ornamentation
- c) Biumbonate Test

1) Choose the correct answer of the following questions:

(60 Marks)

1. The wall of foraminifera is

- a) Siliceous
- b) phosphatic
- c) chitinous
- d) calcareous

2. The earliest raphid pennate diatoms appear in

- a) Cretaceous
- b) Paleocene
- c) Middle Eocene
- d) Middle Miocene

3. Freshwater ostracods carapace tends to be:

- a) Heavily calcified,
- b) weakly silicified
- c) weakly calcified
- d) moderately silicified

4. The earliest recorded well-preserved diatoms are

- a) Biraphide pennaes
- b) centric forms
- c) Monoraphide pennaes

5. Merodont hinge is characterized by having

- a) No terminal teeth
- b) terminal teeth in one valve only
- c) terminal teeth in both valves

6. Microfossils are generally excellent indicators of

- a) Tectonics
- b) Earthquake
- c) paleoecology
- d) Paleogeography

7. Commercial Microfossils are generally associated with

- a) petroleum industry
- b) paint industry
- c) Ceramic industry

8. To study the microfossils, we need to:

- a) large sediment samples
- b) small sediment samples
- c) enough sample



9. The dominant morphological features in pennate diatoms are

- a) Raphe slit
- b) central area
- c) radial striae
- d) flat rounded valve face

10. A pseudoraphe structure in Pennate diatoms is

- a. true raphe
- b. A slit like structure
- c. apical pore
- d. blank space

Examiners	Prof. Abdelfattah Ali Zalal
	Prof. Mahmoud Faris Mohamed

	DEPARTMENT OF GEOLOGY TANTA UNIVERSITY FACULTY OF SCIENCE		
	Examination for second level students of Petroleum & Mining Geology Program (PMGP)		
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Examiners	Prof. Abdelfattah Ali Zalal
	Prof. Mahmoud Faris Mohamed

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY			
	EXAMINATION FOR LEVEL 2 STUDENTS PETROLEUM AND MINING GEOLOGY PROGRAM			
	COURSE TITLE:	Structural Geology		COURSE CODE: PMGE 2103
DATE:	MARCH 6, 2021	TERM: FIRST	TOTAL MARKS: 180	TIME ALLOWED: 2 HOURS

I- Complete the following:

(30 points)

- 1- A fold that closes sideways (right or left) is called:.....
- 2- A type of unconformity with no tectonic deformation:
- 3- The footwall and hanging wall blocks are separated by
- 4- A fold is named plunging when
- 5- In oblique-slip fault, the net slip is equal to and
- 6- Ramsay classification of folds is subdivided folds based on: and
- 7- A circular up-folded structure with the oldest strata in the center:
- 8- The angle between a linear element that lies in a given plane and the strike of that plane:.....
- 9- Recumbent folds are folds that have horizontal
- 10- Young rocks surrounded old in the rule of:

II- Write with drawing on the following:

(45 points)

- 1- Fault classification based on the principal stresses.
- 2- Fluety classification of folds
- 3- Types of strain

III- Compare with drawing between the following:

(50 points)

- 1- Grabens and horsts.
- 2- Class 1B and class 2 in Ramsay classification
- 3- Normal fault and reverse fault
- 4- Nonconformity and angular unconformity
- 5- Fault-bend folding (FBF) and Fault-propagation Folding (FPF)

VI- Match TEN words only from column (A) with column (B): (30 pts)

Column (A)

- 1- Limbs
- 2- Superposition
- 3- Thrust fault
- 4- Plunge
- 5- Detachment fold
- 6- Fault plane
- 7- Inclined axial plane
- 8- Rake
- 9- Isoclinal fold
- 10- Horizontal displacement

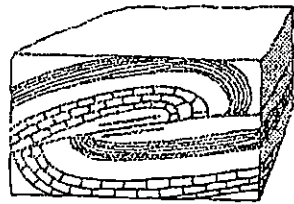
Column (B)

- Parallel limbs
- No ramp
- Planar structure
- Strike-slip fault
- Nonconformity
- Dip angle (10° - 30°)
- Dome
- Fold axial line
- Two sides of a fold
- Young rock overlies old rock
- Linear structure
- Overtaken fold

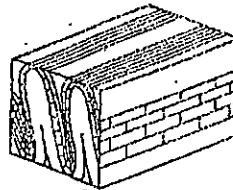
V- The figures below show different types of geological structures.

Write the name of each type.

(25 points)



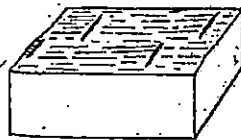
(A)



(B)



(C)



(D)



(E)

Good Luck!



TANTA UNIVERSITY
 FACULTY OF SCIENCE
 DEPARTMENT OF
Petroleum & Mining Geology Program (PMGE)

1969

THEORETICAL EXAMINATION IN GEOPHYSICS FOF SECOND LEVEL
PMGP STUDENTS

**COURSE
 TITLE:**

**"METHODS OF POTENTIAL
 EXPLORATION"**

**COURSECODE:
 PMGE 2105**

**DATE
 :**

/1 /2021

TERM: FIRST

TOTAL ASSESSMENT MARKS: 100

TIME: 2 HOURS .

PART : 1

60 Min. & (60 Marks).

ANSWER THE FOLLOWING QUESTIONS

MARKS (40)

- 1- Write about the elevation and Latitude corrections . (15)
- 2- What are you know about the Earth's magnetic Field. (15).

Answer The Following Sheet

1- MCQ EXAMINE : CHOOSE THE CORRECT ANSWER : (10 Marks).


- A)- Gravity method depends on measuring (density ; magnetic intensity or resistivity) of rocks.
- B)- Latitude correction deals with the error caused by the (topography, density or the shape of the Earth.
- C)- The GRID SPACING design in potential survey depends on the (the type of instrument , type of rock or the aim of the survey).
- D)- The origin of Geomagnetic Field comes from the (outside , core of the Earth , or the Sun .
- E)- The maximum positive intensity of the Earth's magnetic Field presents at (Equator, north pole or south pole) of the Earth .

11- TRUE AND FALSE EXAMINE: (10 Marks).

Put sin (√) for correct answer an put sin (X) for false answer:

- A- The Earth's magnetic Field depends on the presence of igneous intrusions.().
- B- The gravity force of the Earth is affected by the centrifugal force . ().
- C- The Geomagnetic Field is affected by the Sun ; but the gravity force is affected by the Moon . ().
- D- Residual gravity map has more number of closures than that of magnetic. ().

EXAMINERS: Prof. Dr./ Mohamed R. Soliman

 1989	TANTA UNIVERSITY - FACULTY OF SCIENCE - DEPARTMENT OF GEOLOGY		
	EXAMINATION FOR SOPHOMORES (SECOND YEAR) STUDENTS OF PETROLUEM AND MINING GEOLOGY PROGRAM		
	COURSE TITLE:	POTENTIAL EXPLORATION	COURSE CODE: PMGE 2105
DATE:	10 MARCH, 2021	TERM: FIRST	TOTAL ASSESSMENT MARKS: 120
			TIME ALLOWED: 2 HOURS

PART 2 (ONE HOUR – 60 Marks)

Answer the Following

1- Choose the Correct: (2 mark each)

1. Dipole array is used for the investigation of
a- Lateral variations b- vertical variations c- lateral and vertical
2. The EM methods based on
a- conductivity b- resistivity c- density
3. In schlumbergure array the MN distance is ----- AB distance
a. 1/5 b- equals c- half
4. Non polarized electrodes are essentially used -----survey
a. Self-potential SP b- EM c- DC
5. The skin depth of EM survey based on
a. frequency b. shape of the transmitter T_x and receiver R_x c. both
6. Square array is used for -----investigation
a- deep b- shallow c-lateral
7. K factor of Wenner arrays equals to -----
a. $2 \pi a$ b- $2 \pi a V/l$ c- $2 \pi a l/V$
8. For a curve type A has
a. $\rho_1 > \rho_2 > \rho_3$ b. $\rho_1 < \rho_2 > \rho_3$ c. $\rho_1 < \rho_2 < \rho_3$
9. The EM methods based on
a- conductivity b- resistivity d-magnetic susceptibility
10. In DC resistivity method the depth of investigation based on
a. Intensity of current b. array configuration c- both

2- Choose False or True (2 mark each)

- 1- Resistance of a material $R = I / V$
- 2- For homogenous earth's materials apparent and true resistivity are equal.
- 3- Electric survey can be applied for contaminate groundwater.
- 4- In DC resistivity method we use direct DC current.
- 5- Interpretation of geoelectric data give density and thickness of subsurface layers.

- 6- ρ_a is usually measured in the SP methods.
- 7- For schlumberger array, AB electrode separation must be > 3 time of the target depth.
- 8- Sources of the SP voltage is artificial.
- 9- Low frequency transmitter is used for shallow investigation in DC-methods.
- 10- Dipole-dipole array is more sensitive than schlumberger for depth variations
- 11- Number of inflection points on VES curve equals to No of layers
- 12- The SP methods is an active method.
- 13- Resistivities of igneous rocks is lower than clays
- 14- In homogeneous (isotropic) medium the apparent and true resistivity is different
- 15- Schlumberger array is good for determining lateral variations
- 16- Wenner array is more sensitive than schlumberger for depth variations
- 17- Ionic conduction is common geoelectrical methods
- 18- Induced polarization decreases with increasing metallic contents of the rocks
- 19- Resistivity of earth material increase with moisture content.
- 20- The electromagnetic survey based on occurrence of conductive target

انتهت الأسئلة

With my Best Wishes
Prof. Hosni Ghazala

EXAMINERS	Prof. Hosni Ghazala	Prof. Mohamed R. Soliman
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TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF GEOLOGY
Petroleum & Mining Geology Program (PMGP)



Final EXAM For 2nd Level of PMGP Students

COURSE	Geosciences and Society	CODE: PMGE 2113		
DATE	20th March 2021	SEM.: 1st	T. Assess.: 120 marks	TIME: 2 hours

Part I: Answer the following questions (Sketch maps and diagrams should be drawn whenever possible).


- 1) Describe the following: (30 Marks)
 - a) Types of soils.
 - b) The Artificial ground classification.
 - c) Factors that influence the rate of infiltration.
- 2) Write on brief account on Basin analysis? (10 Marks)
- 3) Illustrate Soil – Rock Cycle? (13 Marks)

Part II: Discuss the following supporting your answers with drawing whenever possible (67 MARKS).

- 4) EXPLAIN IN DETAILS THE RELATIONSHIP BETWEEN MINERAL RESOURCES AND THE ENVIRONMENT.(22 MARKS)
- 5) WRITE ON ENERGY SOURCES WITH SPECIAL FOCUS ON THE RENEWABLE SOURCES. (22 MARKS)
- 6) WRITE ON THE SOILS AND THE ENVIRONMENT.(23 MARKS)

BEST WISHES

EXAMINERS: Prof Dr Alaa A. Masoud , Prof Dr Shadia El-Khodary

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY			
	EXAMINATION FOR (LEVEL 2) PETROLIUM & MINING PROGRAM			
1949	COURSE TITLE:	Macropaleontology		CODE: PMGE 2111
DATE:	JANUARY, 2021	SEMESTER: 1	TOTAL MARKS:120	TIME ALLOWED: 2 HOURS

Question 1:

(20 Marks)

a- What are the conditions that lead to fossilization and what are the importance of fossils

Question 2:

(20 Marks)

Discuss and illustrate by drawing the following:

- a- Dissolution / Replacement
- b- Permineralization

Question 3:

(20 Marks)

Illustrate by drawing only:

- a- Mold and cast
- b- Suture pattern in Cephalopods

Question 4:

(30 Marks)

Choose the correct answer:

1- Original Skeletal Materials include:

- a. calcite
- b. silica
- c. calcite & silica

2- Ceratitic suture line characterizes:

- a. Jurassic
- b. Cretaceous
- c. Triassic

3- External molds are:

- a. trace fossils
- b. casts
- c. body fossils

4- Gastropods with outer whorls moderately embracing inner ones are:

- a. advolute
- b. convolute
- c. involute

5- Agoniatitic suture line characterizes:

- a. Devonian
- b. Jurassic
- c. Triassic

6- Refrigeration is:

- a. trace fossil
- b. unaltered remains
- c. mold

7- The important index fossils are:

- a. Ammonites
- b. Gastropods
- c. Bivalvia

8- Carbonization is:

- a. altered remains
- b. unaltered remains
- c. trace fossils

9- Trace fossils include:

- a. tracks and trails
- b. coprolites
- c. a & b

- 10- Two equal adductor scars in bivalvia are called:
a. dimyrian b. monomyrian c. isomyrian
- 11- Fossils are found in:
a. igneous rocks b. sedimentary rocks c. metamorphic rocks
- 12- Orthoceratitic suture is characterized by:
a. lack lobes & saddles b. numerous lobes & saddles
c. subdivided lobes & saddles
- 13- Orthoceratitic suture is found in cephalopods of:
a. Eocene age b. Jurassic age c. Late Cambrian to Holocene.
- 14- Pallial line is described in:
a. Mollusca shells b. Bivalvia shells c. Gastropod shells
- 15- Suture lines are found in:
a. Gastropod shells b. Bivalvia shells c. Cephalopod shells

Question 5:

(30 Marks)

Mark True or False:

- 1- Bivalvia ligament lies inward of the anterior is called opisthodetic
- 2- Bivalvia beak in front is called orthogyral
- 3- Cephalopod shells have two valves
- 4- Gastropods have coiled shells
- 5- Gastropods with right-handed aperture are sinistral
- 6- Amber entombments are body fossils
- 7- Ammonitic suture line is characteristic of Cambrian Ammonoids.
- 8- Petrification is altered remains
- 9- Goniatitic suture line is characteristic of Paleozoic (Devonian - Permian).
- 10- Body fossils represent the direct remains of organisms
- 11- Palaeontology is the scientific study of fossil remains.
- 12- Isodont is a series of small parallel to sub parallel teeth.
- 13- Taxodont is a series of small parallel to sub parallel teeth.
- 14- Fossil sharks teeth are trace fossils
- 15- Gastropods and Bivalves have external shells

Best wishes

Examiner	Prof. Dr. Hamza Khalil	Dr. M. Sobhy
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TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF GEOLOGY

EXAMINATION FOR SECOND LEVEL STUDENTS OF GEOLOGY

COURSE TITLE:	MACROPALEONTOLOGY (1)	COURSE CODE: GE2109		
DATE:	24 MARCH, 2021	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions. Illustrate your answers with clear drawings and give examples:

- 1) a. Mixed arrangements. **(Five only)** (10 Marks)
b. Surface ornamentation in Foraminifera. **(Five only)** (10 Marks)
c. General shapes of the unilocular Test. **(Five only)** (10 Marks)
d. Shape of the Apertures. **(Five only)** (10 Marks)
- 2) **Give example** (15 Marks)
a-Biumbonate Test.
b-Lobulate periphery.
c- Uniserial arrangements.
d-Sutural aperture.
e-Evolute coiling in Foraminifera.
- 3) Write short notes on the following: - (20 Marks)
a- Holotype
b- Dimorphism
c- Small and larger benthic foraminifera
d- The major evolution and extinction events in foraminifera (three examples)
- 4) Explain the main applications of the foraminifera. (25 Marks)

Best wishes

Examiners	Prof. Mahmoud Faris	Prof. Abdelfattah Ali Zalat
	Prof. Akmal Marzouk	