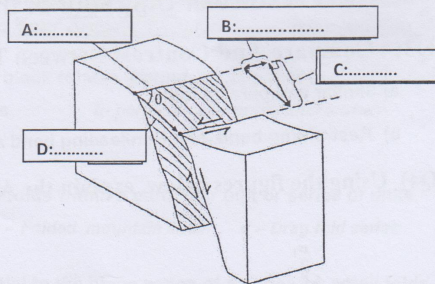


Q7: Answer the Following:

- a) What is the type of the fault?
- b) Show the different fault-slip components in the blank rectangles. (5 marks)



GOOD LUCK!

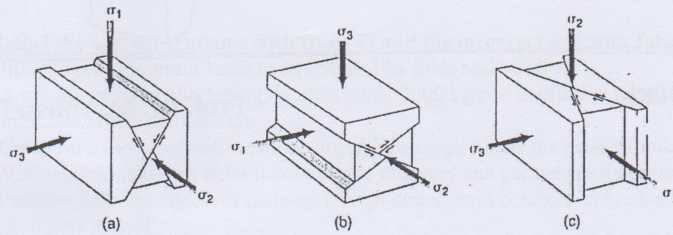
Prof. Dr. M. Youssef

Answer Only Four of the Following Questions

Q3: Compare And Contrast Between The Following: (5 marks)

- a) Similar and parallel folds
- b) Restraining bend, and Rereleasing bend along a strike-slip fault.

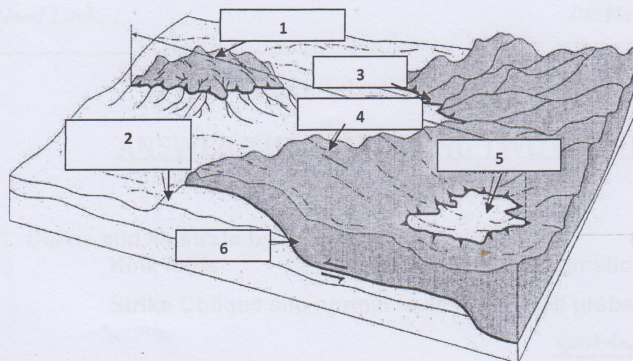
Q4) Using the figures below, explain the Anderson's theory of faulting. (5 marks)



Q5: Explain how folds may develop as

- a) a direct result of compressive stress.
- b) an indirect result of the action of a shearing couple. (5 marks)

Q6) Write the proper name of each structural feature 1, 2, 3, 4, 5 & 6 shown on the figure below: (5 marks)



باقي الأسئلة على الصفحة التالية

Q2: Choose The Correct Words To Complete The Following Phrases And Then Rewrite The Complete Sentence In Your Answer Paper. (One mark each)

- 1) On a listric fault the hanging-wall block rotates around an axis that is
 a- parallel to the fault surface b- perpendicular to the fault surface
 c- oblique to the fault surface d - of no orientation
- 2) A is a series of folds within a particular unit or series of units.
 a- Folded belt b - Fold train c - Folded mountain chain d - Drag fold series
- 3) An imaginary plane that is tangential to the hinge zones of a series of small folds is called:
 a- Axial surface b - Enveloping surface c -Bedding surface d - Symmetric plane
- 4) In faulting, the horizontal component of dip separation is called.....
 a-Throw b- Heave c- Dip slip d- stratigraphic separation
- 5) High point of the hinge line in a non-cylindrical fold is called
 a- Depression b - Culmination c - Amplitude
- 6) In similar folds
 a- the layers maintain constant thickness across the folded surface.
 b- the layer thickness parallel to the axial surface remains constant.
 c- inter-limb angles are equal.
 d- The outer layers are more folded than the inner ones
- 7) andare two of the non-tectonic secondary structures.
 a- Cross bedding b- Slumping c - Landslides d - Columnar jointing
- 8)is a term used to indicate the direction of movement and rotation that occurred during deformation.
 a- Inter limb angle b - Vergence c - Roll over d- hade

باقى الأسئلة على الصفحة التالية



كلية العلوم - قسم الجيولوجيا



جامعة أسيوط

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

الزمن : 3 ساعات

الدرجة الكلية (50 درجة)

مايو 2025

Part I: Rock Mechanics (17 Marks)

I) Label the correct sentence with true (T) and the incorrect one with false (F): (5 M)

- A. Inhomogeneous strain leads to structures like folds and boudins.
- B. A marble cylinder shortening by 30% under 2000 kg/cm² confining pressure indicates brittle deformation.
- C. Creep refers to rapid deformation caused by stresses above the elastic limit.
- D. Viscoelastic materials exhibit both elastic recovery and permanent deformation.
- E. Pressure solution dissolves material at high-stress grain contacts and redeposit it in pore spaces.

II) Distinguish between confining pressure and directed stress, including their geological implications. (2.5 M)

III) Differentiate between elastic strain and plastic strain with geological examples. (2.5 M)

IV) Why do rocks deform more readily in the presence of reacting solutions? Provide an experimental example. (2.5M)

V) Describe the stress ellipsoid and the principal stress axes. (2.5 M)

VI) List two mechanisms associated with granular flow in porous sediments. (2 M)

Good Luck...

Dr. Hassan Abbas

PART II: Structural Geology (33 Marks)

ANSWER THE FOLLOWING TWO QUESTIONS

Q1: Define and illustrate by drawings:

(One mark each).

- Kink folds - Monocline - Ptygmatic folds -
- Strike Oblique slip normal fault - Half graben

ياقنى الأسئلة على الصفحة التالية

III- A granitic dyke have 10 m. thick is intruded in country rocks having 75 °C; what are the expected temperature at distances 1m, 5m and 20m from the intrusion? (1.5 Marks)

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

IV- A granite body has intruded into unmetamorphosed country rocks (dolomite-calcite-quartz beds), which metamorphic zones progressing from the unmetamorphosed country rocks towards the granite intrusion; drawing? (2.5 Marks)

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

V- Metamorphic facies are named after specific minerals, fabrics and tectonic setting, give examples. (1.5 Marks)

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

امتحان الشفوي عقب امتحان النظري مباشرة (مكتب أ.د/ حسين عزيز محمد حجازي)
تمنياتي بالتوفيق والنجاح

25. Heating of the country rocks adjacent to syenitic intrusion at depth of 5-6km caused the surrounding rocks metamorphosed to what of these grades:-
 A- High-medium-low grade
 B- High-medium grade only
 C- Medium-low grade only
 D- Low grade only

26. Which of the following rocks can be considered gradational between igneous rocks and metamorphic rocks?
 A- gneisses
 B- quartzite
 C- migmatite
 D- schist

27. Which of the following statements about metamorphism of a shale is false?
 A- with increasing metamorphism, the clay minerals breakdown to form micas
 B- with increasing metamorphism, the grain size of the minerals gets smaller
 C- with increasing metamorphism, foliation develops
 D- with increasing metamorphism, the amount of water decreases

28. Within a 50 mile traverse you walk from shale into slate into phyllite. You are walking in the direction of
 A- increasing metamorphic grade
 B- decreasing metamorphic grade
 C- increasing degree of contact metamorphism
 D- increasing degree of cataclastic metamorphism

(2.5 Marks)

II- Which of the following is true and which is false:

1. Metamorphic rocks change in appearance, mineralogy, and sometimes even chemical composition from their parent rock source.
2. High-grade metamorphism results in a total transformation of the parent rock into a new rock whereby its original parent-rock source is difficult to identify.
3. The thickness of metamorphic layers tends to be variable, whereas that of sedimentary layers is commonly constant.
4. Metamorphic rocks occur in areas only where rock of Paleozoic age are exposed.
5. Schistosity occur when the silicate minerals separate and recrystallize into alternating bands of felsic mineral and dark mafic minerals.

16. Amphibolites facies is named after index mineral:
 A-hornblende B-hypersthene C-andalusite D-forsterite
17. Talc-carbonate rocks are product of:
 A-regional B-thermal C-dynamic D-metasomatic metamorphism
18. Slate sometimes to be a green due to
 A-iron oxide B-chlorite C-clay minerals D-feldspars
19. Hornfels are formed in area intruded by
 A-basaltic magma B-granitic magma
 C-syenitic magma D-kimberlitic magma
20. The metamorphic process happened at ——— depth
 A-10-30km B-35-40km C-50-60km D-40-50km
21. Match this mineral assemblage with rock name pyroxene – garnet
 A-marble B-amphibolites C-granulite D-eclogite
22. Possible temperature attained at contact of basic intrusion {1000m thickness}
 A-725+Tc B-720+Tc C-730+Tc D-740+Tc
23. Which of the following metamorphic rocks is not paired with its true parent rock?
 A-greenstone-basalt B-quartzite - quartz arenite
 C-schist – shale D-hornfels – dolomite
24. Which of the following sets is arranged in order of increasing metamorphic grade?
 A-shale - slate – phyllite B-phyllite - gneiss – schist
 C-phyllite - slate – schist D-schist - shale – gneiss)

7. Where are extensive area of metamorphic rocks found in Egypt?
 A- Eastern Desert B- Sinai C- Western Desert D- A and B
8. This facies is one of the very low-grade metamorphic rocks
 A- greenschist facies B- lawsonite-glaucophane facies
 C- amphibolite facies D- eclogite facies
9. The characteristic mineral in low-grade metamorphic rocks
 A- pumpellyite B- prehnite C- zoisite D- staurolite
10. Slate sometimes to be a red due to _____
 A- iron oxide B- chlorite C- clay minerals D- feldspars
11. The feldspars in metamorphic rocks are usually represent by:
 A- labradorite B- perthite and albite C- andesine D- anorthite and perthite
12. The mineral assemblage characterized the very low grade
 A- lawsonite – hornblende B- pumpellyite - prehnite
 C- zoisite – actinolite D- staurolite – biotite – almandine
13. The more common metamorphic mineral in low grade schist are
 A- albite B- chlorite C- biotite D- All of these
14. The metamorphic rocks usually present in nature associated with
 A- Ancient igneous rocks B- Cretaceous sedimentary rocks
 C- Tertiary sedimentary rocks D- Recent sedimentary rocks
15. The index metamorphic mineral need:
 A- specific lithology B- specific type of metamorphism
 C- specific degree of metamorphism D- All of these

Second semester final exam in metamorphic rocks (G336)

Students: 3rd year geology

I- Choose the correct answer A, B, C or D (1.5 marks for each): and Comment (42 Marks)

1. Which type of pressure will result in the alignment of metamorphic minerals?
A- contact pressure B- directed pressure
C- confining pressure D- chemical pressure
.....
.....
2. The process where rocks previously metamorphosed under high-grade conditions are later metamorphosed under low-grade conditions is _____.
A- metasomatism B- cataclastic C- foliation D- retrograde metamorphism
.....
.....
3. In which of the following metamorphic environments would you expect to find bedding and other sedimentary structures to be preserved.
A- along faults B- burial metamorphism
C- contact metamorphism D- regional metamorphism
.....
.....
4. Changing of grain size during the process of metamorphism is classified as _____.
A- folding B- bending C- recrystallization D- bedding
.....
.....
5. Which list of metamorphic facies is in order from lowest to highest grade?
A- Amphibolite, zeolite, greenschist, granulite
B- Granulite, amphibolite, greenschist, zeolite
C- Greenschist, granulite, amphibolite, zeolite
D- Zeolite, greenschist, amphibolite, granulite
.....
.....
6. A geologist concludes that a particular metamorphic rock formed at high pressure. Which feature of the rock most likely led to this conclusion?
A- It contains dense minerals B- Its parent rock contained large sediments
C- Its layers have been pulled and lengthened
D- It was found in close association with intrusive igneous
.....
.....



Third Level Examination in
Principles of Petrology (G324)

Time: Two Hour

(Total 50mark)

31-May -2025

PART I IGNEOUS&METAMORPHIC ROCKS

(Total 32 mark)

Write short notes on ONLY FOUR from the following: (8 mark for each question)

- 1- Granites family.
- 2- Types of porphyritic textures in volcanic rocks.
- 3- Gneiss and hornfels.
- 4- Textures of regional metamorphism.
- 5- Basalt family.

PART II SEDIMENTARY ROCKS (Total 18 mark)

(Illustrate your answer by diagrams)

1-Write about THREE questions ONLY of the following: (4 mark for each question)

- A - Different methods for measuring the particle size of clastic sedimentary rocks.
- B - Cross Bedding , Mud Cracks and Ripples Marks. What is their significance?
- C - What does it mean to find a sandstone made of well-rounded quartz sand?
- D - Petrographic classification of limestone.

2-Write briefly on THREE questions ONLY: (2 mark for each question)

- E - The difference between Roundness and Sphericity of grain.
- F -What does the term sorting refer to?
- G - The difference between breccia and conglomerate?
- H - Petrographic classification of Sandstones.

GOOD LUCK

Pro. Dr. Ahmed R. El Younsy

31-May -2025

Pro. Dr. Mohamed A.El Raouf

hydrogeologic units cannot differentiate on the time-distance plot, but resistivity techniques may work in this setting.

- 24- In seismic Refraction, hidden layers may be detected, but possibly not interpreted.
- 25- In seismic Refraction, large impact source may be required.
- 26- Attenuation in GPR decay exponentially with distance from source.
- 27- The lack of seismic-velocity contrasts between geologic units or hydrologic boundaries lead to prevent successful completion of a seismic-refraction survey.
- 28- In horizontal reflector, the receiver (geophone) records the arrival and assumes that the reflection came from straight below.
- 29- Discontinuous reflectors produce refracted waves.
- 30- For dipping reflector the reflection point is vertically below the source/receiver.
- 31- For a horizontal reflector, the shortest path is the vertical one.
- 32- On a t-x diagram, the Normal Moveout (NMO) produces hyperbola.
- 33- Normal Moveout is the later time of arrival of the refracted rays at receivers offset from the source for a horizontal refractor.
- 34- If a reflector is dipping, the position and dip on a raw seismic section are incorrect.
- 35- The reflection comes from a point-up dip and the travel time section will always show a reduced dip.
- 36- In horizontal reflector, the receiver (geophone) records the arrival and assumes that the reflection came from straight below.
- 37- If the reflector is curved, distortions may be more complex.
- 38- If the reflector is curved, the vertical ray is generally first to arrive .
- 39- For subsurface anticlines, a broadened or widened anticline pattern with multiples near the anticline margins.
- 40- For subsurface synclines, a bow tie pattern for synclines with multiples near the synclines margins.
- 41- Discontinuous reflectors produce diffracted waves.
- 42- Discontinuous reflectors produce refracted waves.
- 43- Faulted Reflectors produce diffracted waves.
- 44- The process of trying to move reflections back to their point of origin is migration.
- 45- Migration Intended to deal with dipping interfaces.
- 46- Time migration is restoring geometrical relationships between seismic events on the time section.
- 47- A reflection occurs when there is an increase in the dielectric constant of materials in the subsurface.
- 48- The electrical and magnetic properties of rocks, soils and fluids (natural materials) control the speed of propagation of radar waves only.
- 49- GPR can't penetrate through electrically conductive materials.
- 50- Anisotropic coefficient (λ) defined as the square root of the ratio of the transverse resistivity to longitudinal resistivity and commonly bigger than 1.



Final Exam of
Environmental Geophysics (353G)
(50 mark)

May 2025

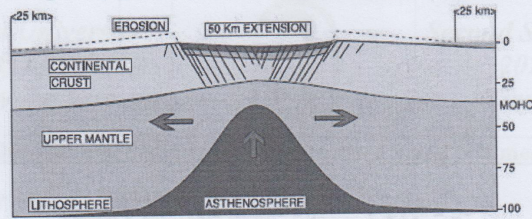
Time: 2 Hours

Answer the following Question

Answer (T) for true sentences or (F) for false sentences (one mark each).

- 1- In Pre-Planning for Seismic Survey, the length and number of lines are required.
- 2- For refraction surveying the typical natural frequency is 14 Hz.
- 3- For detailed shallow reflection the typical natural frequency is 100 Hz.
- 4- The direct ray and the refracted ray arrive in different order depending on time from source and the velocity structure.
- 5- Ray paths: Lines that show the direction that the seismic wave is propagating and are perpendicular to the wave front.
- 6- Elastic wave energy spreads out from a point source as an expanding sphere of energy.
- 7- The direct ray plot start at the origin (0,0) on t-x diagram.
- 8- The Refracted Ray Arrival Time: Plots as a linear path on t-x diagram.
- 9- The Refracted Ray Arrival Time: Only arrives after critical distance.
- 10- The Reflected Ray Arrival Time: Is first arrival only after cross over distance.
- 11- Seismic refraction surveys give information about depth to water table.
- 12- Seismic refraction surveys give information about velocity structure.
- 13- Reciprocal time is the travel time along the refractor from one shot point to another shot point.
- 14- The choice of methods in determining depth to a refractor, depends on the quality of the data on the time-distance plot.
- 15- Seismic reflection techniques depend on the presence of elastic Modules in the subsurface.
- 16- folded subsurface layers produce diffraction waves in seismic survey.
- 17- A seismic interface will be revealed by a refraction survey in case a thin layer (layer 2) sandwiched between layers 1 and 3.
- 18- All layers will be seen in the time distance curve in blind zone by a refraction survey.
- 19- If a layer has a lower velocity than the one above, there can be no critical refraction But will be refracted segment on the t-x diagram.
- 20- Low-seismic-velocity units underlying high seismic-velocity units such as unconsolidated sand and gravel aquifer underlying compact glacial tills and dense limestone overlying a poorly cemented sandstone.
- 21- A hidden-layer problem is encountered when seismic-refraction surveys are conducted in areas where the surface of the ground is frozen.
- 22- The lack of seismic-velocity contrasts between geologic units or hydrologic boundaries lead to successful completion of a seismic-refraction survey.
- 23- The velocity of sound in the saturated clay and silt will be almost the same as the velocity of sound in the saturated sand and gravel. In most cases, the seismic velocities of the two

- The given figure represents _____ stage of the rift valley formation



- Ⓐ Pre-rift basin Ⓑ Graben formation Ⓒ Rift basin Ⓓ Both A and B

- The given figure represents the sedimentary sequence encountered in

		Kharga/Baris	Darb el-Arbain/Dungul
Lower Tertiary	Esoc.	Thebes Fm.	Dungul Fm.
	upper	Esna Fm.	Garra Fm.
	middle	Tarawan Fm.	Kurkur Fm.
	lower	Dakhla Fm.	
Upper Cretaceous	Maastrichtian		Giseiba Fm.
	Campanian	Mut Fm.	
	Santonian		
	Coniacian	Taref Fm.	
	Turonian		
Lower Cretaceous	Cenomanian	Maghrabi Fm.	
	Albian	Sabaya Fm.	
	Aptian	Abu Ballas Fm.	
	Barremian	Six Hills	
	Hauterivian		
	Valanginian	Fm.	
Berriasian			
Jurassic			

- Ⓐ Abu El Gharadiq basin Ⓑ El Gindi basin
Ⓒ Komombo basin Ⓓ Gulf of Suez basin

Good luck

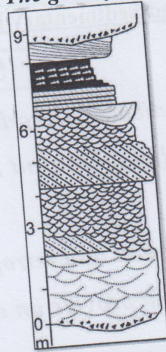
Ezzat A. Ahmed

9. Answer only ONE question of the following: (5 Marks)

A- Write briefly on the economic significance of fluvial sediments.

B- Choose the correct answer A, B, C or D:

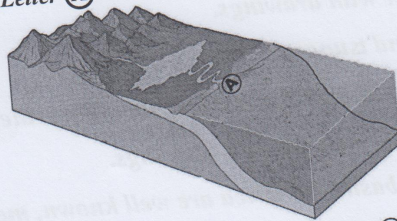
- The given figure represents _____



- (A) Braided stream sediments
- (C) Anastomosing stream sediments

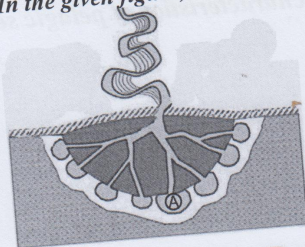
- (B) Meandering stream sediments
- (D) Both A and B

- Letter (A) in the given diagram showing the location of _____



- (A) Alluvial fan
- (B) Submarine fan
- (C) Fan delta
- (D) Terminal fan

- In the given figure, letter (A) marks the location of _____



- (A) Distributary mouth bar
- (B) Delta plain
- (C) Delta front
- (D) Prodelta



Subject: Depositional Sedimentary Environments and Sedimentary Basins (G335)

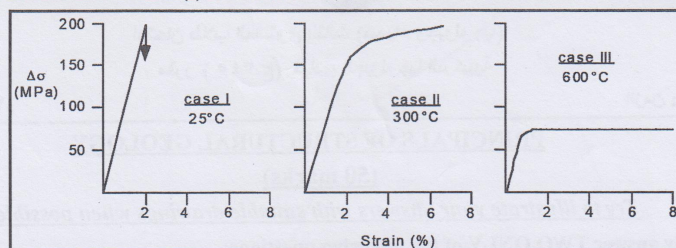
Answer the following questions:

(50 Marks)

1. What do primary sedimentary structures indicate? Describe the main types of cross-bedding that can aid in identifying ancient sedimentary environments. (6 Marks)
2. What is the difference between delta progradation and retrogradation? Discuss the main factors that control them, and provide an example of each. (8 Marks)
3. Write brief notes on the size, age and shape of sedimentary basins, illustrating your answer with drawings. (6 Marks)
4. Compare hurricanes and tsunamis. (5 Marks)
5. Write short notes on sedimentary cycles, including their types and causes, and illustrate your answer with drawings. (6 Marks)
6. The major sedimentary basins in Africa are well known, mention them. (6 Marks)
7. Write short notes on the main characteristics of pelagic sediments. (5 Marks)
8. Define the following: (3 Marks)
 - Volcanogenous sediments
 - Flood plain sediments
 - Active sedimentary basins

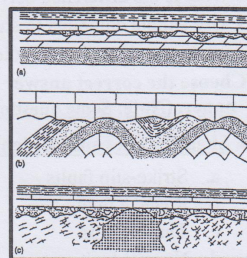


III-9. Below are three hypothetical stress strain curves. Compare and describe the deformation mechanism(s) for each case. (6 marks)



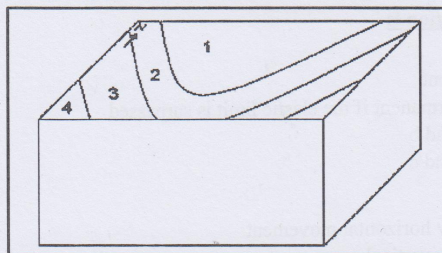
IV-10. The three types of unconformities in the map below are: (6 marks)

- a-
resulted from the effect of
- b-
resulted from the effect of
- c-
resulted from the effect of



V. Redraw on your answer sheet the block (below) and then. (9marks)

11. Complete the south and east sides of the block (below).
12. number the beds from oldest to youngest (1 being Oldest).
13. Indicate the hinge or axis with appropriate symbols in the map view and cross-section face of the block.
14. draw strike and dip symbols on the map view.
15. what is the name of this structure?



VI. True or False? Circle the correct answer. (5marks)

16. When rock deforms in a plastic fashion, it will break. True or False?
17. In an eroded syncline the oldest rock layers are found near the fold axis. True or False?
18. The difference between a joint and a fault is the fault is larger. True or False?
19. Vertical faults have neither a footwall nor a hanging wall. True or False?
20. Rocks in which plastic deformation occurs remain in their deformed shape when the stress is released. True or False?

GOOD LUCK

Prof. Dr. Ahmed R. El Younsy

21/5/2025



امتحان طلاب المستوى الثالث (كيمياء وجيولوجيا)
مقرر (٣٤٥ ج) مبادئ الجيولوجيا التركيبية

الزمن : ٢ ساعة

٢١ مايو ٢٠٢٥ م

PRINCIPALS OF STRUCTURAL GEOLOGY

(50 marks)

Try to illustrate your answers with suitable drawings when possible

i. Briefly answer TWO ONLY of the following questions:

(14marks)

1. The different types of movements along the faults. Give examples.
2. What is the difference between **pure shear** and **simple shear**?
3. Use simple diagrams to show the difference between symmetrical, asymmetrical, overturned, and recumbent folds. Indicate the axial plane for each type.

II. Choose the correct answer for the following statements and Then rewrite in your answer paper. (Note: Some questions may have two correct answers)

(10 marks)

4. Shear forces cause which one of the following?

- a. Strike-slip faults
- b. Reverse faults
- c. Thrust faults
- d. Normal faults
- e. Recumbent faults

5. Once the elastic limit of rock is surpassed

- a. The rock may deform
- b. Deformation becomes permanent
- c. An earthquake may occur
- d. Only a. and c.
- e. All of these

6. Elastic deformation is

- a. Permanent
- b. not permanent
- c. becomes permanent if the elastic limit is surpassed
- d. answers a and b
- e. answers b and c

7. Dip-slip faults

- a. Have mainly horizontal movement
- b. Have mainly vertical movement
- c. Are low angle reverse faults
- d. Are faults where no movement has yet occurred
- e. None of these

8. Faults having both horizontal and vertical movement are called

- a. Strike-slip faults
- b. Transform faults
- c. Oblique-slip faults
- d. Dip-slip faults
- e. Joints.

- 45- What was the current North American continent called before it sutured with other continents in the late Paleozoic?
A- Gondwanaland B- Laurasia C- Pangea D- Laurentia
- 46- Which continent sutured to Laurentia in the Caledonian Orogeny?
A- Baltica B- India C- Gondwanaland D- Siberia
- 47- What large continent comprised North America and Eurasia before they separated for the last time?
A- Gondwanaland B- Laurasia C- Pangea D- Laurentia
- 48- Which periods of the Paleozoic have evidence of extensive glaciation?
A- Devonian and Permian B- Ordovician and Silurian
C- Ordovician and Devonian D- Cambrian and Devonian
- 49- During which geologic period were crinoids most first appear?
A- Carboniferous B- Cambrian C- Silurian D- Permian
- 50- Which of the following groups did not go completely extinct at the end of the Permian?
A- Brachiopoda B- Trilobites C- Fusulinids D- Rugose corals

With our best wishes

Prof. Dr. Nageh A. Obaidalla

Prof. Dr. Amr S. Deaf

- 33- Land plants appeared during the Period?
A- Cambrian B- Silurian C- Triassic D- Permian
- 34- Most periods in the geologic time scale are named for
A- geographic localities B- catastrophic events
C- fossils D- paleontologists
- 35- What marks the base of the Cambrian System?
A- The first Cephalopoda fossil B- the first Ediacaran fossil
B- the first trace fossil C- the first Trilobite fossil
- 36- At what latitude was Siberia located during the Cambrian Period?
A- Equator B- North Pole C- South Pole D- none of these
- 37- During which geologic period did the Laramide Orogeny happen?
A- Silurian-Devonian B- Cretaceous-Paleogene
C- Triassic-Jurassic D- Paleogene-Neogene
- 38- Which landmass collided with Siberia in the Ural Orogeny?
A- Baltica B- Laurasia C- Gondwanaland D-India
- 39- What modern sea is a remnant of the Tethys?
A- Arabian Sea B- Red Sea
C- Mediterranean Sea D- North Sea
- 40- What features were formed in the Sierra Nevadan Orogeny?
A- Deep basins domes and monoclinial folds.
B- Large granitic plutons.
C- Normal faults.
D- Reverse faults.
- 41- What does the "Paleocene Series" refer to?
A- A scheme for dating rocks. B- A scheme for identifying rocks.
C- the rocks formed during Paleocene time.
D- The time interval called the Paleocene.
- 42- What is the age of most of the rocks of the continental shields?
A- Mesozoic B- Cenozoic C- Paleozoic D- Precambrian
- 43- During which eon or era did the prokaryotic cell first appear?
A- Archean B- Proterozoic C- Mesozoic D- Paleozoic
- 44- What was the great southern supercontinent of the Paleozoic called?
A- Gondwanaland B- Laurasia C- Pangea D- Laurentia

- 21- Foraminiferal taxa live in water environments.
A- hyposaline B- hypersaline C- normal sea D- all of these
- 22- Below the level of complete CO₃ dissolution, only some genera are preserved.
A- Agglutinated B- calcareous hyaline
C- calcareous pocellaneous D- none of these
- 23- Dissolved oxygen depends on
A- ocean circulation B- fluxes of organic matter to the sea floor
C- depth D- all of these
- 24- Stagnant water contains
A- low oxygen B- high oxygen
C- moderate oxygen D- all of these
- 25- Fusulinida (rock-forming elements) is the most important and complex of the.....
A- Late Paleozoic B- Late Mesozoic
C- Late Cenozoic D- Quaternary
- 26- The radiolarians skeletons are made of
A- strontium sulfate B- organic materials C- silica D- all of these
- 27- Conodonts are found in sediments.
A- marine B- fresh water C- terrestrial D- all of these
- 28- The African Plate belongs to the supercontinent
A- Pangaea B- Laurentia C- Gondwanaland D- Rodinia
- 29- Which of the following terms of things found in rocks is NOT part of the Precambrian rock record?
A- Stromatolites B- shelled organisms C- algae D- bacteria
- 30- The first form of vertebrate life on the Earth.
A- Jawless Fish B- Armored Fish
C- Cartilage Fish D- Bony Fish
- 31- The first vertebrates to invade the land were the
A- mammals B- reptiles C- insects D- amphibians
- 32- The collision of Laurentia with Baltica caused the Orogeny during the Devonian.
A- Laramide B- Hercynian
C- Ural D- Caledonian

- 10- Classification of dinoflagellate cysts is mainly based on:
 A- Number of plates B- Arrangement of plates
 C- Type of archeopyle D- All of them
- 11- Which of the following is NOT a member of protozoa?
 A- Ostracoda B- Radiolaria
 C- Nannoplankton D- Foraminifera
- 12- The marine depth which receives non-sufficient light for photosynthesis is known by
 A- Dysphotic B- photic
 C- aphotic D- light zone
- 13- Which of the following is NOT true for the Planktonic foraminifera?
 A- Paleo-environmental indicator
 B- Paleo-pathymetry indicator
 C- Paleo-oceanography indicator
 D- Paleo-climite indicator
- 14- Normal sea water is characterized bywater.
 A- alkaline B- acidic
 C- neutral D- all of these
- 15- What is Micropaleontology?
 A- The study of all microscopic fossils.
 B- The study of foraminifera.
 C- The study of calcareous algae
 D- All of these
- 16- The shell of a fresh water ostracods is made of
 A- chitinous B- calcium carbonate C- calcium sulfate D- Silica
- 17- The wall structure of benthonic foraminifera is
 A- agglutinated B- calcareous hyaline
 C- calcareous porcellaneous D- all of these
- 18- The marine depth which receives non-sufficient light for photosynthesis is known by
 A- Dysphotic B- photic C- aphotic D- light zone
- 19- The pH of the normal sea water is.....
 A- >7 B- <7 D- =7 C- none of these
- 20- The hypersaline water is about.....
 A- 57 ‰ B- 35 ‰ D- 30 ‰ C- 0.5 ‰

امتحان الفرقة الثالثة بكلية العلوم شعبة الجيولوجيا
المادة: الحفريات الدقيقة والجيولوجيا التاريخية (٣١٥ ج)
(315G) (Micropaleontology and Historical Geology)

الزمن: ثلاث ساعات

الدرجة: 50 درجة

الفصل الدراسي الثاني ٢٠٢٤ / ٢٠٢٥ م

أجب عن الأسئلة التالية

- 1- Diatom is a general term used to describe like protists.
A- algae B- Fungi C- Animal D- Bacteria
- 2- Amoeba is an example of which type of protist?
A- Animal-like protists B- Plant-like protists
C- Fungi-like protists D- Bacteria-like protists
- 3- The shell of a coccolith is made of
A- Silica B- calcium carbonate
C- calcium sulfate. D- none of these
- 4- is (are) classified under Kingdom Protista
A- nannofossils B- Protozoa C- diatoms D- all of these
- 5- Which of the following is NOT a member of protozoa?
A- Pollen B- Foraminifera C- Radiolaria D- all of these
- 6- For the standard palynological extraction technique, which of the following is considered as an optional step:
A- carbonates removal B- silicates removal C- oxidation
D- removal of Calcium Fluoride
- 7- The outer wall layer "Exine" of pollen grains consists of:
A- Intine B- Ectexine C- Endexine D- all of them
- 8- Fossil and living dinoflagellates are now classified according to:
A- International Code of Botanical Nomenclature (ICBN) as algae
B- International Code of Zoological Nomenclature (ICZN) as protozoans
C- both (ICBN) and (ICZN) D- none of them
- 9- Which of the following has quadrifla:
A- Acritarchs B- Dinoflagellates C- Prasinophytes D- Chitinozoa

6. Large dune fields, or seas of sands, are called.....

- a. draas
- b. regs
- d. ergs

7. Which of the following may be indicative of sediment deposition in a non-marine terrestrial environment?

- a. red colored sediments
- b. mud cracks
- c. plant fossils
- d. all of the above
- e. none of the above

8. Oozes are associated with.....

- a. volcanic deposits.
- b. terrigenous deposits.
- c. pelagic deposits.

9. Which of the following are all types of coral reef.....?

- a. Fringing, barrier, atoll.
- b. Atoll, cay, fringing.
- c. Atoll, barrier, cay.
- d. Fringing, barrier, cay.

10. A meandering river channel.....

- a. usually has a relatively narrow and deep cross section.
- b. usually is the most common type of natural channel in the world.
- c. usually is dominated by suspended load sediment types.
- d. usually is found only in arid climate regions.
- e. usually has a gentler longitudinal gradient than a braided stream

Question No. (2): Explain briefly the following topics with drawing if possible (10 marks):

A. The alluvium of braided rivers (2 marks).

B. Sub-environments and processes of sand dunes (3 marks).

C. The basic types of delta (3 marks).

D. The relationships between sedimentary environment and sedimentary facies (2 marks).

----- GOOD LUCK -----

Pro. Dr. Ahmed R. El Younsy

17-May-2025

Dr. Fatma M. Dardir



Third Level Examination in

Sedimentary Rocks and Sedimentary Environment (327G.)

Time: Two Hour

(Total 50mark)

17-May -2025

PART I

Sedimentary Rocks

(Total 25 mark)

(Illustrate your answer by diagrams)

Write briefly on **FIVE** questions **ONLY**:

(5 mark for each question)

- 1- How are sedimentary rocks formed through physical processes?
- 2- Graphic representation of grain-size data.
- 3 - Cross Bedding , Mud Cracks and Ripples Marks. What is their significance?
- 4- Petrographic classification of limestone.
- 5- Colloform and related textures.
- 6- Factors affecting the porosity and permeability of rocks.

PART II

Sedimentary Environment

(Total 25 mark)

Question No. (1): Choose the correct answer (1.5 mark for each questions):

1. In which type of environment would you be most likely to observe wind erosion.....
 - a. a high mountain
 - b. a hot desert
 - c. a rocky sea shore
2. Where do deltas form?
 - a. at the start of a river.
 - b. where a river empties into a larger body of water.
 - c. at the point where two rivers join together.
3. Which of the following can be used to determine the direction of the ancient current?
 - a. wave-formed ripple marks.
 - b. cross-bedding.
 - c. all of the above.
4. The depositional feature that forms where a stream emerges from a mountainous region onto a plain is called.....
 - a. alluvial fan
 - b. natural levee
 - c. delta
5. The sediments of a delta in any stratigraphic sequence are detected by.....
 - a. volcanoclastic grains.
 - b. coarsening upward sequences, sometimes in repeated cycles.
 - c. fining upward sequences with continental fossil remains.

Fifth Question (10 Marks)

- Compare on five only between the following pairs:

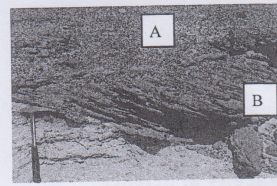
- | | |
|---|----------------------------|
| 1- Batholiths – Diapirs | 2- Skialithes – Autolithes |
| 3- Columnar joints – Fracture cleavage | 4- Crater – Caldera |
| 5- Slaty cleavage – Slip cleavage | 6- Pyroclastics – Tephra |
| 7- Pyroclastic rocks – Epiclastic rocks | |

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

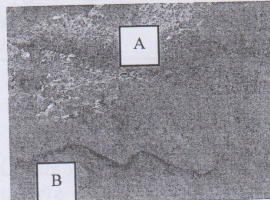
Prof. Dr. Ali A. Khudeir

Prof. Dr. Nageh A. Obaidalla

- ix- The showing field photo represents
sedimentary structure for bed B.
a- primary b- secondary c- tectonic d- biologic

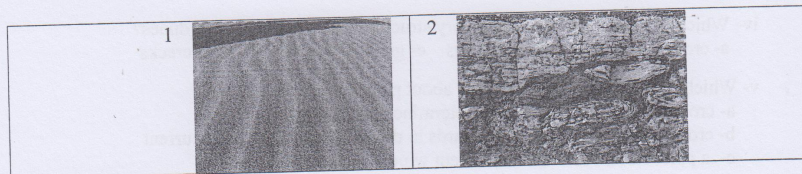


- x- The showing field photo represents
between beds A and B
a- a break in the sedimentary record
b- a complete sedimentary record
c- a fault contact
d- all of these



Second Question (10 Marks)

- 1- Explain the stratigraphic cross sections. (2 Marks)
- 2- Summarize the fault field criteria. (2 Marks)
- 3- Redraw the showing geological photographs in a table and compare between them according to the following statements: (6 Marks)
 - i- Name and type of the geological structure
 - ii- The formation of each one
 - iii- The geological implication of each one



Third Question (10 Marks)

- 1- Define the following terms: (2 Marks)
 - i- Bioturbation
 - ii- Stylolites
 - iii- Paraconformity
- 2- Write on the objectives of field mapping. (3 Marks)
- 3- Write short notes on the chilled zones around the igneous intrusions. (5 Marks)

Fourth Question (10 Marks)

- Write short notes on the types of lava structures.

بسم الله الرحمن الرحيم

University of Assiut
Faculty of Science
Department of Geology

3rd Level Examination for Geology, Geophysics and Geochemistry students
In Field Geology (306G)

Time: Two Hours

50 Marks

May, 2025

ملحوظة هامة: الامتحان يتكون من ثلاث صفحات

Answer the following questions:

First Question (10 Marks)

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

i- Which of the following is NOT a type of primary sedimentary structure?
a- mud cracks b- graded bed c- ripple marks d- cross bedding

ii- A short time break or a change in sediment type in a depositional environment results in the creation ofbetween individual beds.
a- an unconformity b- a graded bed
c- a bedding plane d- an intrusive contact

iii- Which of the following descriptions is NOT correct when talking about graded bedding?
a- graded beds can be formed on a river bed during floods.
b- there is a gradual change in sediment size throughout a bed.
c- small sediment grains are at the bottom and large grains are at the top.
d- graded beds are often associated with turbidity currents on ocean slopes.

iv- Which of the following sedimentary structures is common in sand dunes?
a- cross-bedding b- trace fossils c- graded bedding d- mud cracks

v- Which of the following statements about paleocurrents is FALSE?
a- cross-bedding can be used to determine a paleocurrent
b- cross-beds are inclined downwards in the direction of the paleocurrent
c- a paleocurrent refers to an ancient wind or water flow direction
d- ripple marks are indicators of paleocurrents

vi- The origin of the basal conglomerate is from.....rocks.
a- old b- young c- none of these d- all of these

vii- The bedding involving crater shaped depressions is
a- mud cracks b- rain prints c- boring d- foot prints

viii- The showing field photo represents

contact between beds A and B.

a- sharp b- graditional c- intercalation d- intrusive

