

- 15- Sedimentary rock made of CaCO_3 composition is.....
 a- coal b- quartzite c- limestone
- 16- Sand is... a-sediments b- sedimentary rocks c- organic sediments
- 17- Limestone recrystallizes during metamorphism to.....
 a- schist b- marble c- quartzite
- 18- Gneiss rocks are a result of.....
 a- regional metamorphism b- thermal metamorphism c- dynamic metamorphism
- 19- Types of metamorphic rocks.....
 a- regional b- thermal c- all of the above
- 20-Clastic sedimentary rocks such as conglomerates, sandstones and shales are classified based on.....
 a- density b- grain size c- all of the above
- 21-The mineral composition of gabbroic rocks are.....
 a- plagioclase and pyroxene b- plagioclase and mica c- plagioclase and quartz
- 22- Slate rocks are results of.....
 a- regional metamorphism b-thermal metamorphism c-dynamic metamorphism
- 23- Agent of thermal metamorphism is.....
 a- pressure b- temperature c- both
- 24- Mafic rocks contain about ----- % silica. a- 20 b-50 c-80
- 25- Which of these rocks is not an intrusive igneous rock?
 a- gabbro b- basalt c- granite
26. A dip recorded as $138^\circ/74^\circ$ indicates a dip amount of 74° in general direction (clockwise from North).
 a) Southwest b) Northeast c) Southeast
27. is reversible, meaning the rock will return to its original shape if the stress is removed.
 a) Plastic strain b) Brittle strain c) Elastic strain
28. In an anticline, the oldest rocks are found.....
 a) On the limbs b) Along its hinge line (core) c) On the trough
29. A recumbent fold is characterized by having.....
 a) One limb steeper than the other b) A vertical axial plane
 c) An approximately horizontal axial plane

30. An unconformity where horizontal sedimentary layers are deposited on top of tilted and eroded layers is a(n)..... a) Disconformity b) Nonconformity c) Angular unconformity

31. Folds are a product of _____ deformation.
a) Brittle b) Elastic c) Plastic

32. The term "fault throw" is a measurement of _____ displacement.
a) Horizontal b) Vertical c) Net slip

33. Star dunes form where there is.....
A) Abundant sand and variable wind directions B) Constant wind direction
C) Limited sand supply

34. Glaciers are.....
A) Stationary masses of ice B) Moving masses of ice c) Seasonal snow accumulations

35. Wind deposits materials when it.....
A) Slows down B) Increases speed C) Changes direction slightly

36. Gravity erodes materials by.....
A) Pulling rocks down slopes B) Carving valleys with ice C) Dissolving limestone

37. Biological weathering involves.....
A) Only mechanical processes B) Only chemical processes
C) Both mechanical and chemical processes from living organisms

38. In chemical weathering,
A) Minerals in the rock change B) Rocks are only broken into smaller pieces
C) Only physical breakdown happens

39. Abrasion is the.....
A) Chemical dissolution of rocks B) Grinding rock C) Breaking of rocks by plant roots

40. Different minerals expand and contract at different rates due to.....
A) Acid rain B) Thermal expansion C) Oxidation

41. process must occur before erosion can take place.
A) Deposition B) Weathering C) Transportation

42. primary condition greatly promotes the fossilization of an organism.
a) Exposure to oxygen and scavengers b) Rapid burial and/or lack of oxygen
c) Slow decomposition in a forest

43. An insect perfectly preserved inside tree resin that has hardened into amber is an example of.....
a) Mummification b) Carbonization c) Entombment

44. is considered a trace fossil.
 a) A fossilized leaf b) A petrified tree trunk c) A fossilized burrow or boring
45. The Principle of Cross-Cutting Relations states that a geological feature (like a fault or dike) is.....
 a) younger than the rocks it cuts through. b) older than the rocks it cuts through.
 c) the same age as the rocks it cuts through.
46. The "principle of fossil succession" states that.....
 a) All fossils are found in every rock layer.
 b) Fossil organisms succeed each other in a definite and determinable order.
 c) Fossils are randomly distributed within rock layers.
47. The Phanerozoic Eon, spanning from 545 million years ago to the present, is divided into three
 a) Eons b) Eras c) Periods
48. Based on modern understanding of radioactivity, the Earth is approximately old.
 a) 4.6 million years b) 65 million years c) 4.6 billion years
49. The Ediacaran fauna were primarily.....
 a) Hard-shelled animals like trilobites b) Soft-shelled animals similar to jellyfish or worms
 c) The first land plants
50. The Late Paleozoic is characterized by the "Age of".....
 a) Tetrapods and Reptiles b) Invertebrates c) Fishes

End of Exam

Best Wishes

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	Assiut University- Faculty of Science Second Semester- Final Exam 2025-2026 Geology Department	Program: First level (Biotechnology) Level: (1) Date: 16/5/2026 Time: 2 h	 كلية العلوم جامعة أسيوط
Course Title: Fundamentals of Geology		Code: 100 G	
Instructors: Dr. Eman Saad and Dr. Sara Saber			
Important:	No. of pages 2	No. Of questions 2	Total Marks: 50 degree

Question 1: Choose the correct answer (30 marks; 1 mark for each point)

- 1- The Earth's outer layer, a 100-kilometer-thick shell of rigid rock is called the
a- lithosphere b- asthenosphere c- mesosphere
- 2- is a geological feature that forming at convergent plate boundaries.
a- Trench b- Mid-ocean ridge c- Sea floor spreading
- 3- The type of plate boundary to have deep Earthquakes is
a- convergent b- divergent c- transform
- 4- The dominant rock type of the oceanic crust is
a- andesite b- granite c- basalt
- 5- The plate boundary occurs where two plates move apart horizontally.
a- transform b- divergent c- convergent
- 6- The Himalayas and the Alps are formed as results of.....
a- continental collisions b- subduction c- Sea floor spreading
- 7- The average thickness of the Earth's mantle is
a- 2500 km b- 1900 km c- 2900 km
- 8- The average density of the Earth's core is
a- 11 g/cm³ b- 10 g/cm³ c- 9 g/cm³
- 9- is the angle between three faces of a crystal.
a- Solid angle b- Interfacial angle c- Edge
- 10- system has three crystallographic axes are all equal in length.
a- Cubic b- Tetragonal c- Orthorhombic
- 11- crystal system has $a \neq b \neq c, \alpha \neq \beta \neq \gamma = 90^\circ$
a- Orthorhombic b- Triclinic c- Monoclinic
- 12- crystal system has $a_1 = a_2 = a_3 \neq c, \alpha = \beta = 90^\circ, \gamma = 120^\circ$
a- Trigonal b- Orthorhombic c- Tetragonal
- 13- is the resistance of a mineral to scratching.
a- Hardness b- Streak c- Fracture
- 14- The luster of sphalerite mineral is
a- adamantine b- resinous c- silky
- 15- According to Mohs hardness scale, the hardness of topaz mineral is
a- 6 b- 8 c- 7
- 16- and silicon are the most abundant elements in the Earth's crust.
a- Oxygen b- Iron c- Magnesium
- 17- Magma solidifies within a few hours of erupting, forming volcanic glass called
a- rhyolite b- obsidian c- granites
- 18- Which of the following pairs are felsic igneous rocks? c- Diorite and andesite
a- Granite and rhyolite b- Gabbro and basalt
- 19- A rock is formed by biochemical method
a- Gypsum b- phosphate c- conglomerate
- 20- A metamorphic rock that possesses non-foliated texture.
a- Schist b- Quartzite c- Mylonite

- 21- The type of stress that causes rock to be pulled apart, leading to thinning and stretching of the crust, is.....
- a- Compressional stress b- Tensional stress c- Shear stress
- 22- The formation of a thrust fault is typically associated with tectonic environment.
- a- Mid-ocean ridge b- Rift valley c- Mountain belt (orogeny)
- 23- Which of the following pairs of features are both classified as primary structures?
- a- Faults and folds b- Joints and unconformities c- Ripple marks and cross-bedding
- 24- A disconformity represents a period of.....
- a- Intense folding b- Erosion or non-deposition between parallel strata
- c- Faulting and shearing
- 25- Cross-bedding forms due to deposition on the inclined surfaces of.....
- a- Bed forms such as ripples and dunes b- Fault planes
- c- Erosional channels
- 26- can be considered a fossil.
- a- A leaf imprint in sedimentary rock b- A petrified dinosaur bone
- c- All of the above
- 27- A fossilized footprint or burrow is classified as a.....
- a- Body fossil b- Trace fossil c- Replacement fossil
- 28- Determining a rock's age as "older" or "younger" compared to another rock is known as.....
- a- Absolute dating b- Relative dating c- Radiometric dating
- 29- The three Eras of the Phanerozoic Eon, from oldest to youngest, are.....
- a- Cenozoic, Mesozoic, Paleozoic b- Mesozoic, Paleozoic, Cenozoic
- c- Paleozoic, Mesozoic, Cenozoic
- 30- The Cambrian Explosion, a rapid diversification of major animal groups, marks the beginning of the.....
- a- Paleozoic Era b- Mesozoic Era c- Proterozoic Eon

Question 2: answer the following questions (20 marks; 4 marks for each question)

- 1- Define the following items (Axes of symmetry- Luster- Subduction- Magma)
- 2- To which type of rocks do the following elements belong (Peridotite- Marble- Coal- Migmatite)
- 3- Compare between the crust and the mantle in terms of average thickness, density and dominant composition.
- 4- Define folds, classify their primary types? illustrate with drawings.
- 5- What are the modes of fossil preservation?

End of Exam

Best Wishes

Dr. Eman Saad & Dr. Sara Saber

	Assiut University- Faculty of Science Second Semester- Final Exam 2025-2026 Geology Department	Program: First level Level : (1) Date: 16/5/2026 Time: 2 h	
Course Title: Fundamentals of Geology		Code: 100 G	
Instructors: Prof. Dr. Mohamed Abdel-Rauf, Dr. Mostafa Thabet, Dr. Dina Hamdy, Dr. Iman Saad, Dr. Sara Saber			
Important:	No. of pages 4	No. Of questions 1	Total Mark:50 degree

First Question: choose the correct answer (a, b, or c). (1 mark for each point)

1- The composition of oceanic crust.....

- a- is granitic composition b- is basaltic composition c- is peridotitic composition

2- The average thickness of mantle is.....

- a- 2500 km b- 1900 km c- 2900 km

3- Plate tectonics are a result of Earth's internal heat engine, powered by.....

- a- the Sun b- gravity c- heat flowing from Earth's interior outward

4- Volcanics island arcs are associated with.....

- a- transform boundaries b- divergent boundaries c- convergent boundaries

5- What type of plate boundary has the two plates moving away from each other?

- a- divergent plate boundaries b- convergent plate boundaries
c- transform-fault plate boundaries

6- Convergent boundaries are areas where.....

- a- two plates come together b- two plates slide past each other
c- two plates slide apart from each other

7- The Hexagonal system

- a- $(a = b = c) (\alpha = \beta = \gamma = 90^\circ)$ b- $(a_1 = a_2 = a_3 \neq c) (\alpha = \beta = \gamma = 120^\circ)$ c- $(a \neq b \neq c) (\alpha \neq \beta \neq \gamma = 90^\circ)$

8- The Triclinic System

- a- $(a \neq b \neq c) (\alpha \neq \beta \neq \gamma = 90^\circ)$ b- $(a = b = c) (\alpha = \beta = \gamma = 90^\circ)$ c- $(a \neq b \neq c) (\alpha \neq \beta \neq \gamma \neq 90^\circ)$

9- The Monoclinic System

- a- $(a \neq b \neq c) (\alpha = \gamma \neq \beta = 90^\circ)$ b- $(a = b = c) (\alpha = \beta = \gamma = 90^\circ)$ c- $(a = b \neq c) (\alpha = \beta = \gamma \neq 90^\circ)$

10- Soapy feel in.....

- a- talc b- quartz c- pyrite

11- Saline taste in.....

- a- halite b- pyrite c- gypsum

12- Which is yellow color mineral?

- a- sulfur b- pyrite c- gypsum

13- On Mohs hardness scale, diamond has a hardness of

- a- 9 b- 10 c- 4

14- Which property is related to planes of weakness between atoms in a mineral?

- a- hardness b- Density c- Cleavage

Δ Remember ■ Understand ● Apply ◊ Analysis * Evaluate ○ Create