



First Level Examination  
in Fundamentals of Geology (G100)  
Total Marks (50)

2-Janu., 2025

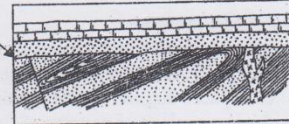
Time: Two Hours

I- Answer the following questions:

(26 Marks, Each One Mark)

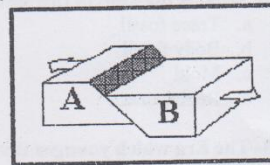
1. A surface that separates older series from younger sedimentary rocks is called .....

- a. angular unconformity
- b. disconformity
- c. nonconformity
- d. paraconformity



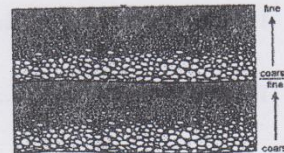
2. What type of stress is represented in this fault-block model?

- a. tensional
- b. compressional
- c. lateral
- d. lithostatic



3. A systematic variation in grain size within a bed is known as .....

- a. cross bedding
- b. graded bedding
- c. unconformity
- d. mud cracks



4. Mechanical weathering can result from the action of all of the following EXCEPT .....

- a- Burrowing by animals
- b- Ice wedging
- c- Carbonic acid
- d- Plant roots

5. Chemical weathering is more rapid in areas with .....

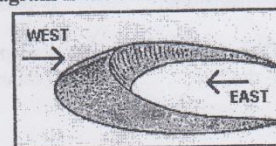
- a- Moist, cool air
- b- Dry, cool air
- c- Warm, humid air
- d- Dry, warm air


6. Desert pavement is a .....

- a. highway across the desert
- b. salty crust in the desert
- c. layer of coarse rocks and pebbles left behind by deflation
- d. An alluvial fan

7-What type of the sand dunes and which arrow on the diagram is the correct?

- a. Barchan and East
- b. parabolic and west
- c. Barchan and west
- d. Seif and East



- 8- .....Is an Impermeable stratum that prevent flow of water.  
a- Well b- Aquifers c- Perched water table d- Aquiclude
- 9- The boundary between the saturated zone and the unsaturated zone is called, the:  
a. Discharge b. Aquiclude c. Water table d. aquifer
- 10- An oxbow lake  
a. is created by the cutoff of a meander  
b. is formed by stream aggradation  
c. is formed by flooding  
d. none of the above
- 11- A fossil mold is  
a. a reproduction of the inside or outside surface of a living thing  
b. duplicate of the original organism; usually formed by replacement of inside of living thing  
c. Spaces dug out by living things and preserved as is or filled in  
d. impressions of passage of living things
- 12- What is the kind of this fossil?  
a. Trace fossil  
b. Body fossil  
c. Mold  
d. Replacement
- 
- 13- The Era which younger than the Mesozoic is the.....  
a. Proterozoic b. Archean  
c. Cenozoic d. Paleozoic
- 14- When did the Pangaeian supercontinent begin to break up?  
a- billions of years ago b- 500 million years c- 1915 d- 225 million years ago
- 15- The inner core is a .....layer  
a- liquid b- solid c- gas d- all of them
- 16- The currently accepted age of the earth is .....  
a- 200 Million b- 550 Million c- 4.6 Billion d- 2.4 Billion
- 17- When oceanic crust meets oceanic crust along a convergent boundary, which plate is most likely to be subducted?  
a- the plate with an island arc b- the plate with the biggest continent  
c- the plate with the oldest crust d- the plate with the youngest crust
- 18- In ..... system:  $a \neq b \neq c$  and  $\alpha \neq \beta \neq \gamma \neq 90^\circ$   
a- tetragonal b- monoclinic c- triclinic d- orthorhombic
- 19- Which of these minerals has a Mohs value of 3?  
a- Calcite b- Quartz c- Fluorite d- Talc
- 20- Gypsum mineral has ..... luster  
a- adamantine b- pearly c- silky d- vitreous
- 21- Coarse-grained granite is most similar in mineral composition to fine-grained.....  
a- rhyolite b- andesite c- basalt d- komatiite



- 22- The major difference between intrusive and extrusive igneous rocks is:  
 a- the type of minerals they contain. b- where they solidify  
 c- their chemical composition. d- all of the them
- 23- Which one of the following features is NOT associated with sedimentary rocks?  
 a- bedding b- foliation  
 c- fossils d- all may be associated with sedimentary rocks
- 24- Which of the following lists is written in order of decreasing particle size?  
 a- sandstone, siltstone, conglomerate b- sandstone, conglomerate, siltstone  
 c- conglomerate, sandstone, siltstone d- siltstone, sandstone, conglomerate
- 25- What type of metamorphism is caused by high temperature and high pressure imposed over a large volume of the crust usually associated with burial during mountain building?  
 a- dynamic metamorphism b- regional metamorphism  
 c- contact metamorphism d- all of the them
- 26- Marble is a metamorphic rock that forms from a..... protolith?  
 a- granite b- limestone c- sandstone d- shale

**II- Write Short notes on:**

(6 Marks)

- 1- What is meant by weathering, and what is the difference between physical and chemical weathering.
- 2- Write on the difference between Joints and Faults. Give examples.

**III- Just Mention:**

(3 Marks)

- a. The relative dating principles?
- b. The characterization of a stream in its Young stage?
- c. Conditions promote fossilization?

**IV- Compare between**

(3 Marks)

- a. Porosity and Permeability?
- b. Artesian wells and springs?

**V- Write briefly on the elements of symmetry.**

(3 marks)

**VI- What are three pieces of evidence Wegener used to support his theory of continental drift?**

(3 marks).

**VII- Define the following items:**

(6 marks)

Diorite

Cleavage

Mylonite

**GOOD LUCK**

Prof. Dr. Ahmed R. El Younsy  
 Prof. Dr. Mamdouh F. Soliman

Prof. Dr. Mohamed A. Hasan  
 Dr. Hassan Abas

- 23- Average thickness of mantle is  
 a-2500 km                      b-1900 km                      c-2900 km
- 24- Average thickness of oceanic crust is  
 a-8 km                      b-7 km                      c-6 km
- 25- 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
- 26-The earth's crustal plates move  
 a- A few meters per year                      b- A few millimeters per 1000 years  
 c- A few centimeters per year
- 27- Mafic rocks contain about ----- % silica.  
 a- 20                      b-50                      c-80
- 28- Types of granitic rocks is  
 a- acidic rocks                      b-intermediate rocks                      c-mafic rocks
- 29-Clastic sedimentary rocks such as conglomerates, sandstones and shales are classified based on:  
 a- color                      b- density                      c- grain size
- 30- Sandstone recrystallizes during metamorphism into:  
 a- slate.                      b- marble                      c- quartzite

**II- Write Short notes on: (Each One Five Marks)**

- 1- Know what weathering is and know the difference between physical and chemical weathering.
- 2- Write on the difference between Joints and Faults. Give examples.
- 3- Types of sedimentary rocks?
- 4- Types of crystal system?

**GOOD LUCK**

**Prof. Dr. Ahmed R. El Younsy**

**Prof. Dr. Mohamed A. Hassan**

12. Permeability is .....

- a- The ability of a solid to allow fluids to pass through
- b- The process by which plants release water vapor to the atmosphere
- c- The amount of water vapor in the air relative to the maximum amount of water vapor the air can hold
- d- The percentage of pore space in the rock

13. The index fossils are:

- a. Geographically wide-spread
- b. Short span of time.
- c. None of (a) or (b).
- d. Both (a) and (b).

14- Favorable conditions for fossilization are .....

- a. soft body parts such as tissues.
- b. rapid burial.
- c. lack of water.
- d. none of the above (not a or b or c).

15. The picture is an example of a.....

- a. piece of paper .
- b. Plant
- c. Fossil
- d. Fish



16- The composition of oceanic crust .....

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

17- Plate tectonics is a result of Earth's internal heat engine, powered by

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

18- Which is an intrusive igneous rock.

- a-rhyolite
- b-basalt
- c-granite

19- Shale recrystallizes during metamorphism into:

- a- slate.
- b- marble
- c- quartzite

20- Hornfels rocks is

- a- regional metamorphism
- b-thermal metamorphism
- c-dynamic metamorphism

21-Agent of thermal metamorphism is

- a-pressure
- b-temperature
- c- both

22-Along what type of plate boundary does subduction occur?

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





First Level Examination in Fundamentals of Geology (G100)

Biotechnology

Time: Two Hours

Total Marks (50)

2-Janu., 2025

I- Answer the following questions: (Each One Mark) I-

1. A contact between parallel sedimentary rock layers that records missing geologic time is .....

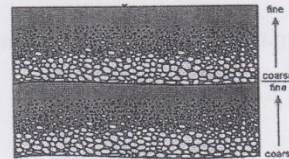
- a. a disconformity
- b. an angular unconformity
- c. a uniformity
- d. a nonconformity

2. The boundary between the saturated zone and the unsaturated zone is called the.....

- a- water table
- b- Aquifer
- c- Aquiclude
- d- Porosity

3. A systematic variation in grain size within a bed is known as.....

- a. cross bedding
- b. graded bedding
- c. unconformity
- d. mud cracks



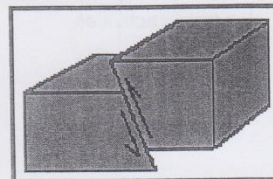
4. The feature shown in the opposite figure is known as.....

- a. ripple marks cross
- b. graded bedding
- c. joints
- d. mud cracks



5- In the following figure, the movement of the fault blocks indicates that the type of fault is.....

- a. reverse fault
- b. normal fault
- c. right-lateral strike-slip fault
- d. left-lateral strike-slip fault



6. The breaking down of rocks into smaller fragments is .....

- a. Weathering
- b. Erosion
- c. Done only by animals
- d. constructive

7. Desert pavement is a .....

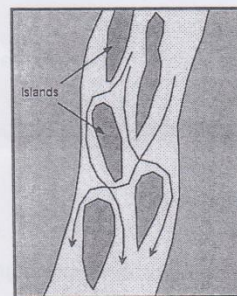
- a. highway across the desert
- b. salty crust in the desert
- c. layer of coarse rocks and pebbles left behind by deflation
- d. An alluvial fan

8. When a river meets an ocean which depositional feature is often formed?

- a. loess
- b. delta
- c. oxbow
- d. speleothem

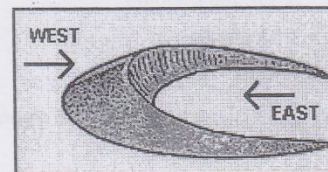
9. The type of stream channel is represented a .....

- a. meandering
- b. braided
- c. graded
- d. none of the above



10-What type of the sand dunes and which arrow on the diagram is the correct?

- a. Barchan and East
- b. parabolic and west
- c. Barchan and west
- d. Seif and East



11- Exfoliation is a natural process which results from

- a. activities of man
- b. chemical weathering of rocks
- c. thermal expansion of rocks
- d. organic activities