

Engineering Geology – Mid Term Exam, Date: Tuesday 26th Jul. 2016

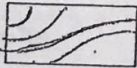
Name of the Student [please in Arabic]: No:

Instructors : Eng. Saheem Murshid

Section : (1, 2)

Question #1 / Fill the spaces:

(37 Marks)

- 1- Deposition of running water is called Alluvial.....
- 2- Gneiss metamorphic rock has a banded texture, parent rock is granite.
- 3- Percent of water as ice sheet is 2.15%.....
- 4- Glass has 7X degree on Moho scales.
- 5- In nature there are more than 4000 minerals, but only 8 elements compose 98% percent by weight of the earth crust.
- 6- Well sorted material has less porosity than poorly sorted.
- 7- Most of the stream load is carried as bed load.
- 8- When the water table is lower than the water level in the stream, the stream is called Alluvium.
- 9- Adding weight to the top of the slope may cause slope movement known as over steeping.
- 10- The most important erosional agent is running water.
- 11- The ideal soil compose of 45% percent minerals, 25% percent air, 5% percent humus and 25% percent water.
- 12- Graphite has greasy Feel.
- 13- This rock notification  refers to Mud.

- 14- Geology is relevance to foundation engineering by environment
- 15- Fool's gold has cubic crystal.
- 16- A mount of water exceeding the soaking capacity of land is called runoff
 And it is a mount is 3.6,000 Km³.
- 17- Material reach to stream by ... slide ... and القفر
- 18- Bed load of stream is account 25 percent of the stream load.
- 19- A mount of precipitation on the continent is 96,000 Km³/year.
- 20- C-horizon is composed of ... broken bed Rock
- 21- The largest earth layer is Mantle
- 22- The most common mineral group forming rock in Palestine is Carbonate
- 23- The building unit of all silicate is ... silicon oxygen tetrahedron
- 24- The most element occurring in nature is oxygen
- 25- Porosity (n) is equal to $\frac{\text{Volume of void}}{\text{total volume}}$
- 26- Cross-bedding is indication of deposition of as
- 27- placer deposit deposition Is a way of concentration of valuable minerals.
- 28- Creep Form of mass wasting common in permafrost region.
- 29- Stream Flowage of debris containing a large amount of water

Answer the following questions:

30

a) Compare between the following soil types.

Soil type	Mineral	climate
Bauxite	little oxid iron and rich Aluminium	Tropical Area
Pedocal	carbonat calcium	dry area

b) Give an idea about the history of Gray wacke?

Feldspars, Quartz → sand stone
 angular → physical weathering
 قبل ان ترسب بدرجة

c) Explain how micro-organism work as control factor of soil formation?

decay animal and plants → organic matter
 increase the ability of soil to retain water
 micro-organisms

d) Re-arrange the following minerals from higher to lower hardness

Plagioclase, Calcite, Quartz, Corundum, Talc

Quartz > Corundum > plagioclase > calcite > Talc

e) Re-arrange the following particles from small to large size

Granule, Clay, Sand, Silt, Cobble

Clay < Silt < sand < Granule < Cobble

f) Give an example for the following igneous rock

Intrusive igneous rock	Extrusive igneous rock (same composition)
Granite	Rhyolite
Gabbro	Basalt
Diorite	Andesite

g) Name four methods used to treat the slope to control landslide.

- ① decreasing the load
- ② increasing vegetation cover
- ③ flattening the surface

④ add the pile of the bottom the slope

h) Explain how directional pressure contribute to metamorphism process



rocks in equal pressure found in below the sea
rock in directional pressure

① tensile

→ became elongated

② compression

→ became contract

③ shear

④ brittle

⑤ ductile

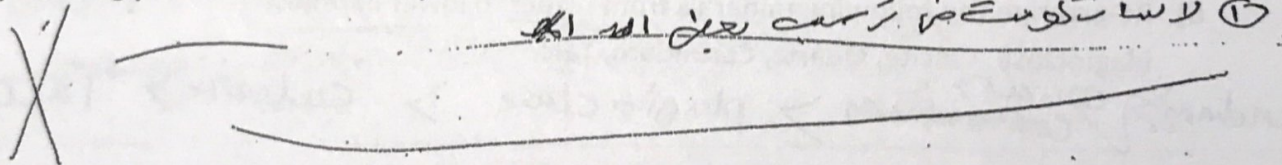
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i) compare between breccia and conglomerate

	Breccia	conglomerate
Shape of particles	angular	rounded
Distance of travel	short	long

j) How water affect mass wasting. water reduce ~~the~~ shearing strength of the rock and soil, also water add additional weight to the material, also water moves along the plane it weak it will work as lubrication. agent on that plane, also ~~free~~ freezing and thawing may wear the rocks.

k) Why bedding planes in sedimentary rock are formed.



l) How you can differentiate between calcite and Quartz?

calcite :- hardness 3, slowly react, non silicate mineral

Quartz :- hardness 7, slow react, silicate mineral

m) Forest beds:



n) Graded bedding :- it is from graded of particle from bottom to the top of

Question #3

Classify the following rocks and minerals:

Rock or Mineral	MINERAL Luster	IGNEOUS Composition	METAMORPHIC (Texture)	SEDIMENTARY Clastic or non Clastic
1. Arkose				non-clastic
2. para-Gneiss			Foliated ✓	
3. Coal				non-clastic
4. Meta conglomerate			Foliated ✓	
5. Muscovite	pearly ✓			
6. Phyllite			Foliated ✓	
7. Gypsum	—		non-foliated	X —
8. Olivine	glassy ✓			
9. Jasper				non-clastic ✓
10. Peridotite		ultramafic ✓		
11. Pumice		granitic ✓		
12. $\text{CaMg}(\text{CO}_3)_2$	glassy			
13. Pyrite	non-metallic			X —
14. Tuff		pyroclastic ✓		
15. Obsidian		granitic ✓		