Question #1: Fill the spaces: **(30 Marks)**

1) Before radiometric dating, geologists developed a time scale using principle of ...radio activity...

2) The processes that lead to the destruction of the Earths' surface are: ...erosion..., ...weathering...

3) ...streak... Is the color of the mineral in its powder form.

4) Some minerals can be identified by taste, example the mineral ...NaCl...

5) Flourite mineral has a hardness ...4...

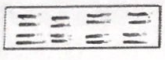
6) Water is important for plants, because ...it is irrigation plants... & ...source of plants nutrition that increase the ~~rate~~ remain water...

7) The most influential factor that controls the soil formation is ...Climate...

8) The primary source for organic matter in soils is ...humus...

9) C-Horizon in the soil profile is made up mainly of ...solid soil...

10) ...Creep... Is the most occurring type of mass wasting.

11) This rock notification  refers to the rock ...(sand)(sandstone)...

12) A ...Limestone... Is made up of one or more mineral/s.

13) All materials when crystallize occupy less volume except ...x...

14) The upper surface of the saturated zone in the aquifer is called ...water table...

15) When materials remain coherent and move along well-defined surface, we call this type of mass wasting a ...sliding... or ...slides...

16) ...Quartz... is the 2nd most occurring element in the Earths' crust.

17) The rock layer that does not permit water to pass through is called ...aquiclude / impermeable...

18) The igneous texture that has no crystals is called ...glassy... texture.

19) Sorting of sediments reflects change in the streams' .....

20) River sediments are called ...Alluvium... sediments.

21) Stalagmites are often made up of the mineral ...of dripstone... صواعد في المياه الجارية

22) Dissolving and taking calcite away by groundwater leaving underground caves is a phenomenon called ...leaching... phenomenon.

23) Cross bedding is a phenomenon usually happens in .....sediments.

24) ...Limestone... is a highly porous but impermeable rock type.

25) When river receives water from groundwater, it is called ...Effluent... river.-

26) Soil rich in minerals bearing lot of Fe + Al elements is called ...pedalfers

27) Dark igneous rocks have...large...density than light-colored igneous rocks.

28) Streams competence is expressed by its ...Max. size that velocity... stream can transport... While its capacity is expressed by its ...discharge / max. load... that stream can carry

Question # 2: Classify the following rocks and minerals **(30 Marks):**

Rock or Mineral	Mineral Structure	Igneous (Texture)	Metamorphic (Texture)	Sedimentary		
				Detritus	Organic	Inorganic
1-Rhyolite		Aphanitic				
2-Arkose				✓		
3- Anthracite					✓	
4-Hornblend	double chain					
5-Pumice		glassy				
6-Breccia				✓		
7- Slate			Fine grained rock minute mica flakes			
8-Gabbro		~~Basaltic rock~~ phanertic				
9-Diorite		phorepyratic				
10-Muscovite	sheet					
11-Olivine	single tetraghedron					
12-Gneiss			granular and elongated mineral (F, Mg, Fe, Mg)			
13-Conglomerate				✓		
14-Quartzite			Quartz sand stone from moderate to high grad Met.			
15-Silt Stone				✓		

26/30

14

Question #3: Match between those in column (1) with those in column (2) (15 Marks)

Column (1)	Column (2)
~~1. Pyrite~~	( ) Biotite ✗
~~2. Mud Flow~~	(9) Subsoil ✗
~~3. Sinkholes~~	( ) Lithosphere ✗
~~4. Placer Deposits~~	(6) One type of bed load movement
~~5. Coquina~~ organic	(11) Igneous rock has large crystals
~~6. Saltation~~	(7) Rock made up of silt & clay
~~7. Shale~~	( ) James Hutton ✗
~~8. Alluvial Fan~~	(2) Rapid type of mass wasting that involves a flowage of debris rich in water.
9. B-Horizon	(1) False Gold
~~10. Hardest Mineral~~	(14) The rise of groundwater level in awell
~~11. Pegmatite~~	(X) Made up of SiO_2
12. Flint	(13) Cone-shaped accumulation of different angular rock pieces.
~~13. Talus~~	(3) Reflects Karst topography
~~14. Artesian Head~~	( ) Spot Holes ✗
~~15. Humus~~	( ) Cone of Depression
	( ) Soil rich in Al & some Fe ✗
	( ) Ice Sheet ✗
	(10) Diamond
	(15) Organic material
	(5) Rock made up of shells cemented together
	(4) Economic accumulation of precious heavy minerals due to their gravity
	(8) Accumulation of River debris due to sudden drop in its velocity

pile foundation

20

Question # 4: **(25 Marks)**

A) Name 5 methods applied to treat the slope to prevent mass wasting? ***[5Marks]***

1) Flatting the slope
2) removal the load
3) increasing vegetation cover
4) pile the foundation
5) make Gabions

5

B) Name 4 problems related to groundwater? ***[4 Marks].***

1) non-renewable source (غير متجدد)
2) Land ~~subsi~~ subsidance due to withdrawal ground water
3) salt water contamination
4) Not Network the recharge wells

3

C) Discuss the following statement: "As the particle size increases, then the rate of chemical weathering decreases"? ***[3 Marks].***

التفاعل يتركز على الزاوية الحادة (المساحة السطحية الكبير)
spherical rock وبالتالي يؤدي الى تحللها وتكون
وتتم حدوث تشقق على الطبقة مما يسهل دخول الماء خلالها
هو ينتج الـ clay من feldspars وبالتالي يؤدي الى تسهيل عملية
Erosion وكبر حجم الصخر وتكسرها

lubricating

D) Explain how water content affects the mass wasting? ***[3 Marks].***

1) reduce shear strength
2) add additional weight
3) Freezing and thrawal the ~~stone~~ Rock
4) lubricating a long plane of the slope

3

E) Name 3 methods stream carries its loads? ***[3 Marks].***

1) In solution (dissolved load)
2) In suspension (susbinded load)
3) Along the Bottom (Bed load)

3

5 F) Explain how unloading causes rock disintegration? ***[3 Marks].***

عند ازالة ال load حيث الصخور تصبح مكشوفة وبالتالي تتعرض لعملية erosion
وهذا يؤدي الى ان القشره الصخريه تصبح رقيقة عن طريق onion like layers
وبالتالي تتعى

G) Name 4 external factors affecting the mass wasting? ***[4 Marks].***

1) Vibration
2) removal vegetation cover
3) removal of support at the foot of the slope
4) loading at the top of the slope

4