

Name _____

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1. The classification and naming of igneous rocks is based primarily on _____.
A)Aristotelian logic
B)mineral composition along with textures that give environmental conditions of crystallization
C)colour and weight
D)where the rock was found and the local names for this in different languages
2. The size, shape and arrangement of mineral grains in igneous rocks is called _____ and it indicates _____.
A)aphanitic form, how much water was present in the melt
B)igneous geometry, the original % of partial melting
C)texture, the environmental conditions in which the rock formed
D)geomorphology, depth of origin for the original magma
3. The main factors which directly govern the texture formation in all igneous rocks are _____.
A)buoyancy, crystal settling and partial melting
B)weathering and climate
C)volcano or pluton size and shape
D)cooling rate, dissolved volatiles and silica content
4. How long does it take a large magma body at great depth to cool and completely crystallize?
A)a few months
B)a few days
C)several years
D)several tens to a hundreds of thousands of years
5. Rocks that consist completely of disordered ions with no structures are called _____.
A)aphanitic B)glassy C)phaneritic D)porphyritic E)pegmatitic
6. Magma cools and consolidates without growth of mineral grains
A)porphyritic B)phaneritic C)glassy D)pegmatitic E)aphanitic
7. Mineral grains are of equal size and coarse enough to be seen without a magnifying glass
A)aphanitic B)pyroclastic C)porphyritic D)glassy E)phaneritic
8. Rock has two or more, distinctly different-sized populations of mineral grains
A)phaneritic B)pegmatitic C)pyroclastic D)porphyritic E)aphanitic
9. A magnifying glass or microscope is needed to see individual mineral grains
A)porphyritic B)pyroclastic C)pegmatitic D)aphanitic E)phaneritic
10. When a rock has a two-stage cooling history (slow then fast) it is is _____.
A)porphyritic B)aphanitic C)pegmatitic D)phaneritic E)pyroclastic

Match the rocks to their equivalent aphanitic or phaneritic igneous rocks.

11. Granite has a texture most like?
A)komatiite B) basalt C) andesite D) rhyolite
12. Basalt has a texture most like?
A)diorite B) gabbro C) granite D) peridotite

13. Diorite has a texture most like?

- A) rhyolite B) komatiite C) basalt D) andesite

14. Which of the following igneous rocks usually exhibit aphanitic texture?

- A) andesite, diorite B) granite, gabbro C) andesite, rhyolite D) rhyolite, gabbro

15. Visible quartz and potassium feldspar grains are the main parts in which igneous rock?

- A) basalt B) rhyolite C) granite D) gabbro

16. 98% of most common crustal igneous rocks are made of: _____.

- A) oxygen, hydrogen, nitrogen carbon and sulfur
B) titanium, manganese, gold, silver and uranium
C) oxygen, silicon, aluminum, calcium, sodium, potassium, magnesium and iron
D) lithium, cesium, uranium and rare earths

17. Felsic rocks like granite _____.

- A) form mainly in volcanic island chains
B) are major constituents of the continental crust
C) make up most of the ocean floor and volcanic island chains
D) are extremely rare on Earth but abundant on the Moon

18. Mafic rocks like basalt and gabbro _____.

- A) are very low in their iron and magnesium contents
B) make up most of the ocean floor and volcanic island chains
C) form mainly in continental mountain belts
D) are major constituents of the continental crust

19. Which of the following rocks is an extremely vesicular, volcanic glass?

- A) pegmatite B) komatiite C) obsidian D) pumice

20. What are vesicles?

- A) open spaces formed in the rock as the lava solidified around gas bubbles
B) open voids in an igneous rock left when phenocrysts dissolved away
C) the larger mineral grains of a porphyritic texture
D) the fragments comprising a volcanic breccia

21. Which of the following textures shows a single, long period of cooling and crystallization?

- A) aphanitic B) phaneritic C) pyroclastic D) glassy

22. Which of the following has the same mineral composition as andesite?

- A) diorite B) granite C) gabbro D) basalt

23. Which of the following best describes an aphanitic texture?

- A) the rock is crystalline; mineral grains are too small to be visible without a magnifying lens
B) the mineral grains have glassy textures
C) the rock is crystalline; mineral grains are of distinctly different sizes
D) the rock consists of broken, volcanic-rock and mineral fragments