

Choose the correct answer for the following sentences: **(20 marks)**

- 1- (**Inosilicates, Phyllosilicates, Tectosilicates, Nesosilicates**) Its structure consists of single-chain silicate based on a linear, or chainlike, tetrahedral linkage.
- 2- (**Tonalite, Granite, Gabbro, Rhyolite**) An intrusive igneous rock with a mineral composition of 25% quartz, 65% potassium feldspar, 5% plagioclase feldspar, 3% biotite, and 2% amphibole.
- 3- $[(Fe,Mg)_2SiO_4]$ is a chemical formula of (**hypersthene, olivine, orthoclase, nepheline**).
- 4- (**Lower crust, Upper crust**) composed mainly of magnesium silicate minerals (Sima) and is considered to be more basic composition.
- 5- (**Mesosphere, Outer Core, Inner core, Mantle**) about 2250 km thick. S-wave velocities are zero in it.
- 6- (**α -quartz and β -quartz, tridymite, stishovite**) is stable under high pressure.
- 7- (**Gutenberg, Moho, Lehmann, Conrad**) discontinuity represents the boundary between the core and the mantle.
- 8- $[KAlSi_2O_6]$ is a chemical formula of (**hypersthene, orthoclase, leucite, nepheline**).
- 9- (**Lithosphere, Asthenosphere, Mesosphere**) is comprised of both crust and part of the upper mantle.
- 10- In slow cooling the crystallinity of rock is (**hypocrystalline, holohyaline, holocrystalline, hypohyaline**).
- 11- (**Secondary, Primary**) textures occur during igneous crystallization and result from interactions between minerals and melt.
- 12- (**Parental magma, Derivative, Primitive magmas, Primary Magma**) formed directly by partial melting of the mantle, without any later modification.
- 13- (**Phaneritic, Aphanitic**) textures: crystals not visible to the naked eye.
- 14- (**Leucocratic, mesocratic, melanocratic, holomelanocratic" ultramafic"**) said of igneous rocks that consist of 90% to 100% mafic minerals.
- 15- (**Olivine, Pyroxene, Quartz, Biotite**) isn't mafic minerals.
- 16- Peralkaline is (**color index, silica content, alumina saturation, phaneritic**) classification for igneous rock.
- 17- (**Pumice, Scoria, Obsidian**): is the volcanic rock that composed of glass entirely.
- 18- (**Equilibrium crystallization, Fractional crystallization**) Crystals that form remain in direct contact with melt.
- 19- Rhyolitic magmas are abundant on the (**continental crust, oceanic crust, both oceanic and continental crust**).
- 20- Basaltic magma derived from the (**upper mantle, lower crust, outer core**).

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