Minerals

Que.1. Arrange the following minerals in the ascending order of their hardness:

[gypsum, corundum, quartz, apatite]. [Marks :(2)]

Ans. Gypsum, apatite, quartz, corundum

Que.2. Name any two minerals along with their use in daily life. [Marks :(2)]

Ans. Gypsum: Cement industry

Graphite:Pencil

Clay: Ceramic industry

Que.3. Classify the following minerals into transparent, translucent and opaque:

[milky quartz, pyrite, colourless quartz, magnetite] [Marks :(4)]

Ans. Milky quartz: transluscent

Pyrite: opaque

Colourless quartz: transparent

Magnetite: opaque

Que.4. Mineral 'A' could make a scratch on gypsum, but got itself scratched by fluorite, Make inferences regarding the hardness of the mineral 'A'. [Marks :(1)]

Ans. Hardness 3

Que.5. Match the columns A with B and C [Marks :(3)]

MINERAL	PHYSICAL PROPERTY	DESCRIPTION
quartz	parallel cleavage	quality of light reflected off from a mineral
mica	vitreous lustre	colour of the powder of a mineral
hematite	cherry red streak	tendency of a mineral to break along certain directions

Ans. quartz-vitreous lustre-quality of light reflected off from a mieral

mica- parallel cleavage- tendency of a mineral to break along certain directions

hematite- cherry red streak- colour ofthe powder of a mineral

Que.6. Write any one use to each o the following. [Marks :(3)]

i] graphite ii] limestone iii] silica sand.

Ans. Graphite: Pencil making

Limestone: Cement manufacturing

Silica sand: Glass making

Que.7. The following minerals were placed within a magnetic field, write your observations for each mineral: [Marks :(3)]

i) pyrrhotite ii) bismuth iii) hematite.

Ans. pyrhotite: strongly attracted/ferromagnetism

bismuth: repelled from the magnetic field/diamagnetic

hematite; weakly attracted/paramagnetism

Que.8. Suppose you are given gold and chalcopyrite specimens and a streak plate, how will you identify gold and chalcopyrite? [Marks :(2)]

Ans. Gold is having golden or yellow coloured streak

Chalcopyrite is having greenish black streak

Que.9. Distinguish between i) foliated and fibrous habits [Marks :(4)]

ii) vitreous and greasy lustres

Ans. i) Foliated: When a mineral is made up of a thin paper like sheets that can be easily separated its habit is designated as foliated.

Fibrous: When the mineral is composed of fibers, generally separable either easily (e.g., asbestos) or with some difficulty (e.g., gypsum).

ii). Vitreous lustre means a mineral having a glassy shine

Greasdy lustre: MIneral appears as if it were coated with grease.

Que.10. Give reasons: [Marks :(2)]

a) silicate minerals are dominant in the earth's crust

b) colour is not a reliable property for mineral identification.

Ans. a). Silicon and oxygen constitute approximately 75% of the earth's crust, and this is the reason for the predominance of silicate minerals in earth’s crust.

b). The colour is not a very reliable source for identifying a mineral, as it can be affected by impurities present in the mineral sample.

Que.11. Classify the following minerals into sulphides, oxides, halides and carbonates:

[flourite, quartz, galena, calcite] [Marks :(4)]

Ans. fluorite: halites

quartz: oxides

galena: sulphides

calcite: carbonates

Que.12. Classify the following into rock forming and ore forming minerals : [Marks :(4)]

[feldspars, pyroxene, monazite, hematite]

Ans. Ore forming: monazite, hematite

Rock forming: feldspars, pyroxene

Que.13. Write any three conditions that a substance must fulfill inorder to consider it as a mineral? [Marks :(3)]

Ans. It must occur naturally

It must be an inorganic substance

It must have a fixed chemical composition that can be represented by a definite chemical formula.

It must have an orderly internal atomic structure

Its physical properties must be fixed and controlled by composition and internal structure.

It should be stable at room temperature (ie minerals must be solids)

It should be in solid state of matter.