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DEPARTMENT: MEDICAL LABORATORY SCIENCE

LEVEL: 200

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1. Outline the toxicity values and deficiency manifestations of the following minerals;

* Potassium
* Calcium
* Magnesium
* Chloride
* Iron

**ANSWER**

A(i). **TOXICITY VALUE OF POTASSIUM**

Normal range of potassium levels are between 3.5 and 5.0mEq/L. any elevated plama potassium above the normal range is termed HYPER-KALAEMIA and any range below the normal range is termed HYPO-KALAEMIA.

(ii). **DEFICIENCY MANIFESTATION OF POTASSIUM**

Deficiency in potassium leads to muscle weakness, paralysis, mental confusion, acidosis and fatigue.

B(i). **TOXICITY VALUE OF CALCIUM**

A normal range for calcium levels are between 8-10mg/dl. Any level below this is considered toxic.

(ii). **DEFICIENCY MANIFESTATION OF CALCIUM**

Deficiency in calcium leads to HYPO-CALCEMIA. Its manifestations are; tetany, muscle cramps, convulsion, osteoporosis, and rickets.

C(i). **TOXICITY VALUE OF MAGNESIUM**

The normal range of magnesium levels are between 1.74-2.61mmol/L.

(ii). **DEFICIENCY MANIFESTATION OF MAGNESIUM**

Deficiency in magnesium results in muscle spams, tetany, confusion, seizures.

D(i). **TOXICITY VALUE OF CHLORIDE**

The toxicity range value of chloride is between 95-105mEq/L.

(ii). **DEFICIENCY MANIFESTATION OF CHLORIDE**

Chloride deficiency which is termed HYPO-CHLOREMIA is when chloride is insufficient in the body. Its manifestations are; frequent vomiting, diarrhea, fatigue.

E(i). **TOXICITY VALUE OF IRON**

Iron levels above 350-500 microgram/dl are considered toxic and iron levels exceeding 1000 microgram/dl are poisonous. Ingestion of more than 50mg/kg of elemental iron are also toxic.

(ii). **DEFICIENCY MANIFESTATION OF IRON**

Microcytic anaemia is the deficiency manifestation of iron.