

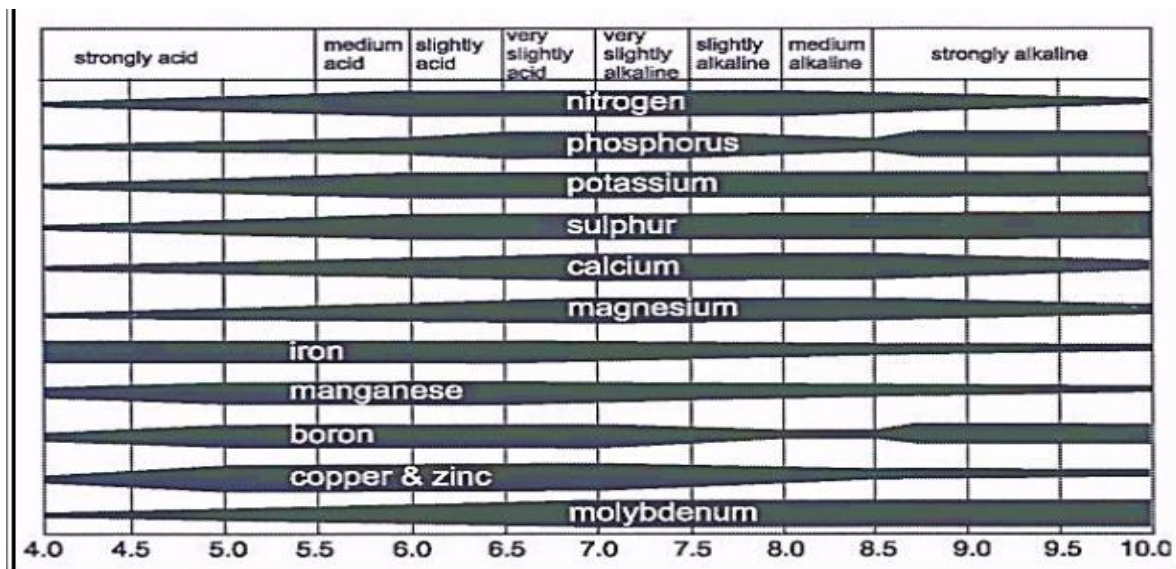
WORKSHEET 5

QUESTION 1

a) A farmer who owns **five** hectares of land, practices mixed cropping. The fixed cost is \$2500. The farm's income and expenditure are given in the table below.

Type of Crop/ha	Expenses \$	Yield kg/ha	Cost/kg \$
Pumpkin	1000	1000 kg	4.00
Eggplants	1500	1500 kg	2.00
Cucumber	1200	1000 kg	2.00
Maize	1100	3000 kg	2.50
Kumala	1400	1000 kg	2.00

- i. Calculate the profit or loss of the farm. **(3 marks)**
- b) State **one** importance of soil buffering capacity. **(1 mark)**
- c) Explain **one** way in which mulching enhances the chemical properties of the soil. **(2 marks)**
- d) Ion exchange occurs between the surface of soil colloids and soil solution. Distinguish between anion exchange and cation exchange. **(2 marks)**
- e) The illustration below shows how soil pH affects the availability of plant nutrients.



- i. Explain **one** reason why most vegetables grow best within the soil pH range of **6.5 to 7**. **(2 marks)**

QUESTION 2

- a) Describe **one** way in which soil air influences life in the soil. **(1 mark)**
- (b) The weathering of many primary minerals causes soil alkalinity. Explain **one** effect of excess soil alkalinity on plant growth. **(2 marks)**
- (c) Plant breeding is the art and science of changing the traits of plants in order to produce desired characteristics. Describe the process of obtaining **heterosis** in plants. **(2 marks)**
- d) Explain **one** reason why there is an increase in the demand for potential crops in Fiji. **(2 marks)**
- e) State **one** way in which bio intensity gardening focuses on achieving maximum yields from a minimum area of land. **(1 mark)**
- f) Different sizes of empty containers can be used for organic container gardening. Explain **one** importance of selecting the right size of container for the crop that is to be planted. **(2 marks)**

THE END