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| **FACULTY OF HEALTH AND APPLIED SCIENCES**  **DEPARTMENT OF NATURAL AND APPLIED SCIENCES** |
| **NAME Hafeni Neliwa**  **ST. #: 222097892**  **QUALIFICATION(S): Bachelor of Computer Science(e.g. Bachelor of Computer Science)**  **MODE OF STUDY (FM/PM): FM**  **CLASS VENUE:** |
| **COURSE NAME:** **BASIC SCIENCE FM & PM ONLY**  **COURSE CODE:** BSC410S |
| **ASSIGNMENT: 1**  **DUE DATE:** 08th April 2022 @ 23H59  **MARKS:** 100 |
| **BASIC SCIENCE ASSIGNMENT 2, SEMESTER 1, 2022** |
| **Course Coordinator: Mr. Petrus .T. Paulus** |
| **INSTRUCTIONS:**   1. Answer all the questions for this Assignment. 2. Use this page as your assignment cover page. 3. Your assignment **MUST be TYPED**. 4. The assignment MUST be Submitted ONLINE by the due date & time. |

1.1 Vitamin A: It helps with the formation of teeth and skeletal tissues.

Vitamin E: It helps form red blood cells.

Vitamin C: To repair and grow the bodies tissues.

Vitamin D: Helps maintain the balance of calcium levels in the body.

1.2 Vitamin D: Calcium might build as a consequence of vitamin d.

1.3 Monounsaturated fats have one unsaturated carbon bond in the particle. Polyunsaturated fats are fats that have more than one unsaturated carbon bond.

1.4 The difference is that incomplete proteins supply only some amino acids whereas complete proteins supply all amino acids essential to the body.

1.5 Advantages:-Supports growth of muscles

-Supports the health of the brain

Disadvantages:-It can lead to weight gain

-It can lead to increased sugar levels in blood

1.6 A person with hormone deficiency would have higher levels of body fat, poor bone density and higher sensitivity to higher or lower temperatures.

Question 2

2.1 Pasteurization destroys bacteria which cause diseases.

2.2 This is to prevent the growth of any microorganisms in the products.

2.3 It allows dairy products to be stored at room temperature for longer periods of time.

2.4 Oxygen availability. The lack of oxygen causes formation of other products other than the ones desired.

Question 3

3.1.1 The number of protons and neutrons in a nucleus.

3.1.2 It is the number of charges in an atomic nucleus.

3.1.3 Are atoms having the same proton number but different neutron number.

3.1.4 It is an atom which has an electrical charge.

3.2 Metals, non-metals and metalloids.

3.3 Minerals are inorganic solids whereas ores are the concentrations of minerals in a rock.

3.4.1 Metalloid

3.4.2 Non-metal

3.4.3 Metal

3.5.1 Two electrons

3.5.2 Eight electrons

3.5.3 Eight electrons

3.6.1-11

-13

-11

-0

-Na

Question 4

4.1 A strong acid is an acid that is ionized completely in an aqueous solution.

4.2 Acids have a Ph scale range between 6 to 0 while bases between 8 to 14.

4.3 salt, water and CO2.

4.4.1 Use blue litmus paper. Colour changes red meanings it’s an acid.

4.4.2 Use blue litmus paper. Colour changes red meaning its an acid.

4.4.3 Use red litmus paper. Colour changes blue meaning it’s a base.

4.4.4 Use red litmus paper. Colour changes blue meaning it’s a base.

4.5 -Sodium hydroxide

-Limestone

-Sulfuric acid

-Sodium bicarbonate

-Washing soda

Question 5

5.1.1 Non-renewable: the materials used are normally unusable again.

5.1.2 Non-renewable: they are finite resources and cannot be replaced rapidly.

5.1.3 Renewable: Water can be replenished rapidly and is a natural resource.

5.2 -Use less electricity/energy.

-Does not use more energy than required.

5.3 Coal is burned in a boiler steam is produced as a result. The pressure created by the steam flows into the turbine causing it to spin a generator. This creates electricity. The steam will then be cooled and converted back into liquid state sent back to the boiler and the process repeats again.

5.4 A ,because the slope is steeper.

5.5.1 PE=m\*g\*h

=0.3\*9.8\*100

=294 J

5.5.2 =0.3\*9.8\*10

=29.4 J

5.5.3 KE = 1/2mv2

=294-29.4

=264.6 J

5.5.4 V=square root 2(264)/(0.3)

=42 m/s

6.1

R1

R2

R3

R4

.

6.2 Total resistance= R1+R2+(1/1/R3=1/R4)

= 4+2 + (1/(7/24)

=9.43 I

6.3 =v/r

=9/9.43 = 0.954 I

6.4.1 (the circuit) by overcurrent

6.4.2 (the component) by melting