



**POLYTECHNIC OF NAMIBIA
SCHOOL OF HEALTH AND APPLIED SCIENCES
DEPARTMENT OF NATURAL AND APPLIED SCIENCES**

BASIC SCIENCE FULLTIME TEST 2

INITIALS:

SURNAME:

STUDENT NUMBER:

MODE OF STUDY:

QUALIFICATION:

LECTURE VENUE:

COURSE NAME: BASIC SCIENCE

COURSE CODE: BSC410S

DATE: 2 OCTOBER 2015

DURATION: 1H30

MARKS: /60

THIS QUESTION PAPER CONSISTS OF 6 PAGES INCLUDING THIS FRONT
COVER

INSTRUCTIONS

1. Answer all questions on the question paper.
2. Please write neatly and legibly
3. No books, notes and other additional aids are allowed.
4. Only a scientific calculator is allowed

SECTION A: BIOLOGY**[20 MARKS]****QUESTION 1 [14 MARKS]****Question Type:** Multiple Choices. Each answer equals 2 marks.

1. Micronutrients are dietary components, often referred to as _____.
(2)
 - A. monosaccharide and disaccharide
 - B. carbohydrates and proteins
 - C. carbohydrates and lipids
 - D. vitamins and minerals

2. Which elements make up a protein?
(2)
 - A. hydrogen, calcium, oxygen and carbon
 - B. carbon, hydrogen, oxygen and glycerol
 - C. hydrogen, oxygen, carbon and potassium
 - D. hydrogen, carbon, oxygen and nitrogen

3. Which of the following is the critical function of proteins?
(2)
 - A. repair of damaged cells
 - B. manufacture of antibodies
 - C. growth of new cells
 - D. production of energy

4. About 50-60% of the human body weight consists of water. One of the following is NOT a function of water in the human body:
(2)
 - A. acts as a solvent for nutrients
 - B. helps regulate the body temperature
 - C. clots the blood
 - D. participates in chemical reactions

5. What gives yoghurt a sour taste?
(2)
 - A. Sour milk
 - B. Fermented fruits
 - C. Lactic acid
 - D. Complete fermentation

6. All the following statements for the main uses of fermentation are true EXCEPT:
(2)
 - A. It can be used for preservation
 - B. It can be used to breakdown proteins
 - C. It can be used to change the nutritional value of food products
 - D. It can be used to create or improve sensory characteristics of foods

7. Yeast is used in bread-making. This is because the yeast: (2)
- Produces carbon dioxide
 - Produces alcohol
 - Digests starch
 - Releases enzymes

QUESTION 2 [6 MARKS]

Question Type: Complete the Table (i – iii)

Nutrient	Main Function	Deficiency disease/signs	Food source
Iron	Carries oxygen round body	Anaemia	i.
Vitamin K	Clot master	ii.	Leafy green vegetables, diary products
iii.	Essential for production of thyroxine	Thyroid gland	Sea fish / shellfish / vegetables

SECTION B: CHEMISTRY**[20 MARKS]**

- The identity of a particular element on the Periodic Table is determined by the; [2]
 - Number of electrons in the shell
 - Number of protons and neutrons in the nucleus
 - Number of protons in the nucleus only
 - Number of protons, neutrons and electrons
- In terms of the periodic trend, the size of an atom _____ as you go down a particular group or column on the Periodic Table. [2]
 - Decreases
 - Increases
 - Remains the same
 - It depends on which group
- Elements with the same number of protons but different number of neutrons are referred to as; [2]
 - Ions
 - Neutral
 - Isotopes
 - All of the above
- In terms of bonding, elements found in group 5 tend to; [2]

- (a) Lose five electrons
- (b) Lose three electrons
- (c) Gain three electrons
- (d) Gain five electrons

5. _____ are the most reactive metals on the Periodic Table. [2]

- (a) Transition metals
- (b) Alkali earth metals
- (c) Lanthanide metals
- (d) Alkali metals
- (e) Actinide metals

6. The mixture of two or more metals is known as; [2]

- (a) Ore
- (b) Alloy
- (c) Metalloid
- (d) Mineral

7. Which statement is correct about the Halogen group on the Periodic Table? [2]

- (a) They exist as solids, liquids and gases in nature
- (b) They are the most reactive non-metals
- (c) They form negatively charged ions during ionic bonding
- (d) All of the above

8. The three elements which make up the “Iron Triad” on the Periodic Table are; [2]

- (a) Iron, Copper and Zinc
- (b) Iron, Cobalt and Copper
- (c) Iron, Copper and Nickel
- (d) Iron, Cobalt and Nickel

9. The variety of steels which are produced commercially are obtained by the mixture of the following two elements; [2]

- (a) Iron and Chromium
- (b) Iron and Carbon
- (c) Iron and Nickel
- (d) All of the above

10. Galvanisation one of the process used to prevent the corrosion of metals and this process involves coating the metal with; [2]

- (a) Oil or grease
- (b) Tin
- (c) Zinc
- (d) Paint

SECTION C: PHYSICS**[20 MARKS]**

1. Good conductors of electricity have [2]
- (a) High resistance
 - (b) Low resistance
 - (c) Single route for current to flow
 - (d) More alternate routes for current to flow

2. Which letter is correct in terms of electrons, protons and neutrons charges? [2]

Particle	Electron	Proton	neutron
(a)	Negative	Positive	Negative
(b)	Positive	Positive	Neutral
(c)	Neutral	Negative	Positive
(d)	Negative	Positive	Neutral

3. The fundamental unit of matter is known as _____ . [2]

- (a) Atom
- (b) Neutron
- (c) Electron
- (d) Proton

4. The path along which the electric current moves is called the [2]

- (a) Electric circuit
- (b) Conventional circuit
- (c) Direct current
- (d) Alternating circuit

5. The rate of flow of electric charges is called [2]

- (a) Voltage
- (b) Charges
- (c) Electric current
- (d) Resistance

6. When electrical components are connected one after the other is called [2]

- (a) Parallel connection
- (b) Series connection
- (c) Both series and parallel connection
- (d) None of the above

7. Which statement is correct in terms of measurements of electricity? [2]

- (a) An ammeter is connected in parallel and voltmeter is connected in series.
- (b) Both ammeter and voltmeter are connected in series.
- (c) An ammeter is connected in series and a voltmeter is connected in parallel.

(d) None of the above.

8. Good conductors of electricity have _____ resistance. [2]

(a) High

(b) Low

(c) Moderate

(d) None of the above

9. When resistors are connected in parallel, the total resistances in the circuit will _____ [2]

(a) Remain the same

(b) Increase

(c) Decrease

(d) Vanish rapidly

10. When current flowing in a circuit exceeds the specified value of fuse connected, what happens to the fuse? [2]

(a) Nothing will happen

(b) Fuse will regulate the current flow

(c) Fuse will melt down

(d) None of the above

END

TOTAL: 60 MARKS