

BIOLOGY FORM TWO NECTA 2016

Solutions from: [Maktaba by TETEA](https://maktaba.tetea.org)

By Yohana Lazaro

1.

| | | | | | | | | | |
|---|----|-----|----|---|----|-----|------|----|---|
| i | ii | iii | iv | v | vi | vii | viii | ix | x |
| D | A | D | B | C | C | C | D | C | A |

2.

| | | | | | | | | | |
|-------|------|------|-------|-------|-------|-------|------|------|-------|
| i | ii | iii | iv | v | vi | vii | viii | ix | x |
| False | True | True | False | False | False | False | True | True | False |

3.

| | | | | | | | | | |
|---|----|-----|----|---|----|-----|------|----|---|
| i | ii | iii | iv | v | vi | vii | viii | ix | x |
| A | D | I | E | B | L | M | N | H | J |

4.(a)A-cell membrane

B-cytoplasm

C-nucleus

(b) Part C has a function to control and regulates the activities of the cell, like metabolism and growth.

(c) Differences between plant cell and animal cell.

| Plant Cell | Animal Cell |
|--|--|
| Have plastids (e.g. chloroplast) | Do not have plastids |
| Have a cell wall (cellulose) | Do not have a cell wall |
| Have a large central vacuole | Have small temporary vacuoles (if any) |
| Store excess glucose as starch | Store excess glucose as glycogen |
| Have plasmodesmata | Do not have plasmodesmata |
| Do not have centrioles | Have centrioles |
| Do not have cholesterol in cell membrane | Have cholesterol in cell membrane |
| Generally have a fixed, regular shape | Generally have an amorphous shape |

5.(a)(i)Laboratory is the special room where experiments are done.

(ii) Biology is the study of living and non living organisms.

(iii) Botany is the branch of biology that deals with the study of plants.

(b)(i) microscope is used to observe very small specimens

(ii) thermometer is used to measure temperature.

(iii) test tube is used to hold substances to be boiled.

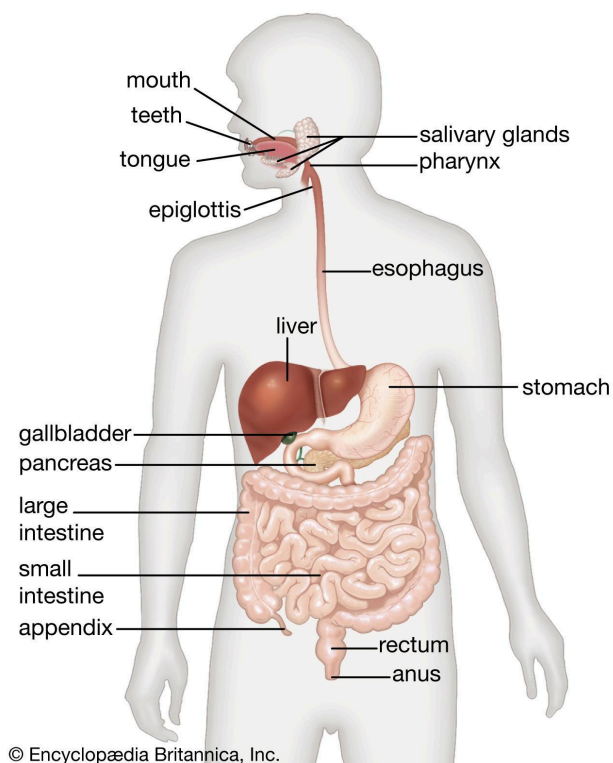
(iv) test tube holder is used to keep or is where test tube placed for storage.

6(a) (i) Food chain is a linear sequence of organisms which starts from producer organisms and ends with decomposer species.

(ii) Trophic level refers to a level or a position in a food chain, a food web, or an ecological pyramid. It is occupied by a group of organisms that have a similar feeding mode.

(b) maize plant sheep lion. Bacteria.

7.(a) parts of the alimentary canal.



(b)ADAPTATIONS OF ILEUM

Has secretory glands/crypts of lieberkuhn which secretes enzymes
(maltase/sucrase/lactase/peptidase/lipase to complete digestion of sugars/proteins/lipids.

Goblet cells secrete mucus which allows for smooth movement of food and protect wall of ileum from action of digestive enzymes

Very long to provide large surface area for absorption.

Highly folded/coiled to slow movement of food to allow more time for digestion/absorption/ and to increase surface area for absorption.

Has numerous villi which increase surface area for absorption/microvilli which further increase surface area for absorption.

Ileum wall/villi have thin epithelium which is only one cell thick to reduce distance over which digested food has to diffuse.

Villi are highly vascularised/have a rich network of blood capillaries for rapid transport from small intestines and maintain a steep concentration gradient for rapid absorption.

Villi have lacteals for absorption of fatty acids and glycerol

Cells of ileum wall have a large count of mitochondria to release energy for active uptake of some food substances across the epithelium.

8.(a)principles of waste disposal.

- Recycling
- Re-use of materials
- Reduce materials
- Incinerating.

(b)Effects of poor waste disposal.

- eruption of diseases like cholera
- make the environments dirty.
- leads to water contamination.

9. -Symptoms of hypertension.

| Symptoms | |
|--------------------------|---------------------------------------|
| Very high blood pressure | Increased sweating |
| Chest pains | Tinnitus – ringing or buzzing in ears |
| Headache | Heart palpitations |
| Fatigue | General feeling of unwellness |
| Shortness of breath | Increased urination frequency |
| Convulsion | Blurred vision |
| Dizziness | Double vision |
| Nausea | Flushed face |
| Vomiting | Nose bleeds |
| Anxiety | Pale skin |
| Changes in vision | Red skin |

- Measures to prevent hypertension.

How To Prevent Hypertension

- Keep weight down (BMI <25)
 - <5-20 mmHg for each 10-kg weight loss
- Exercise at least 150 minutes a week
 - <4 to 9 mmHg
- Lower your salt intake
 - <2 to 8 mmHg
- Healthy diet
 - <8 to 14 mmHg
- Moderate your alcohol use
 - <2 to 4 mmHg



10. CHOLERA

Cholera is an infectious disease that causes severe watery diarrhea, which can lead to dehydration and even death if untreated. It is caused by eating food or drinking water contaminated with a bacterium called *Vibrio cholerae*.

Cholera Causes

Vibrio cholerae, the bacterium that causes cholera, is usually found in food or water contaminated by feces from a person with the infection. Common sources include:

- Municipal water supplies
 - Ice made from municipal water
 - Foods and drinks sold by street vendors
 - Vegetables grown with water containing human wastes
 - Raw or undercooked fish and seafood caught in waters polluted with sewage
- =When a person consumes the contaminated food or water, the bacteria release a toxin in the intestines that produces severe diarrhea.

Cholera Symptoms

Symptoms of cholera can begin as soon as a few hours or as long as five days after infection. Often, symptoms are mild. But sometimes they are very serious. About one in 20 people infected have severe watery diarrhea accompanied by vomiting, which can quickly lead to dehydration. Although many infected people may have minimal or no symptoms, they can still contribute to spread of the infection.

Cholera Treatment and Prevention

There is a vaccine for cholera.

- You can protect yourself and your family by using only water that has been boiled, water that has been chemically disinfected, or bottled water. Be sure to use bottled, boiled, or chemically disinfected water for the following purposes

Drinking

Preparing food or drinks

Making ice

Brushing your teeth

Washing your face and hands

Washing dishes and utensils that you use to eat or prepare food

Washing fruits and vegetables.