

## BIOLOGY 1 2017 - NECTA FORM FOUR

Solutions from: [Maktaba by TETEA](#)

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

2.

|   |    |     |    |   |    |     |      |    |   |
|---|----|-----|----|---|----|-----|------|----|---|
| i | ii | iii | iv | v | vi | vii | viii | ix | X |
| C | K  | A   | E  | J | B  | G   | F    | D  | I |

3.(a) Schools should have biology laboratory in order to enable students to carry out scientific investigations and gain research skills.

(b) Laboratory rules: -

- don't make noise in the laboratory
- don't enter in laboratory without permission
- do not run in the laboratory
- report any accident that occur in the laboratory.
- do not do an experiment without permission from the teacher
- always do not touch chemicals with bear hands.

4(a) Principles of waste disposal

- Recycle waste materials that can be recycled.
- Reduce the use of materials which can produce waste.

(b) Proper ways of waste disposal

- making manure from organic waste materials.
- Recycling waste materials
- using land-fills

5(a)(i) Respiration is the process of breaking chemically the food materials in order to release energy.

(ii) Types of respiration

- Aerobic respiration

-Anaerobic respiration

(b)Gaseous exchange occurs when oxygen diffuses into blood capillaries, while carbon dioxide diffuses from blood capillaries to alveoli spaces. Where is then passed from blood to bronchioles, bronchi, trachea and finally expelled out through nostrils.

6(a)Complete dominance occurs when a gene is dominant such that can mask the expression of another gene which is recessive.

Incomplete dominance occurs when there is no dominant gene or recessive gene, but both express phenotypically.

(b)

7(a)Fertilization is the process by which male gametes(pollen) fuse with female gamete(ovule) to form a zygote.

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(b)Characteristics of insect pollinated flowers: -

-it has scent

-brightly colored sepals

-has large petals

-It contains nectar

-has sticky stigma.

8(a)Types of muscles

-Cardiac muscles

-smooth muscles

-skeletal muscles

(b)Adaptations of muscles; -

-Are trailed and tapping ends for contraction and relaxation

-have many mitochondrion to provide energy

-they are made of myofibril that cause movement.

9(a)Types blood cells

-Red blood cells

-white blood cell

-platelets

(b)Arteries vs veins.

| ARTERIES VERSUS VEINS   |   |
|---|---|
| Arteries  | Veins   |
| 1. Carry blood from the heart, carry oxygenated blood (except pulmonary artery) | 1. Carry blood to the heart, carry deoxygenated blood (except pulmonary vein) |
| 2. Normally bright red in color   | 2. Normally dark red in color   |
| 3. Elastic walls that expand with surge of blood                                | 3. Thin walls/less elastic  |
| 4. No valves  | 4. Valves   |
| 5. Can feel a pulse   | 5. No pulse   |

From Heart      To Heart

Artery    Arteriole    Capillaries    Venule    Vein

10(a)Abiotic factors area non-living components of the ecosystem, e.g. soil

Biotic are living components, like plants

(b)(i) Food chain is the linear representation of flow of energy and nutrients in an ecosystem

Trophic level consists of groups of organisms with similar nutritional habits

(ii) grass → zebra → lion → bacteria

11.Macro-Nutrients required by the body.

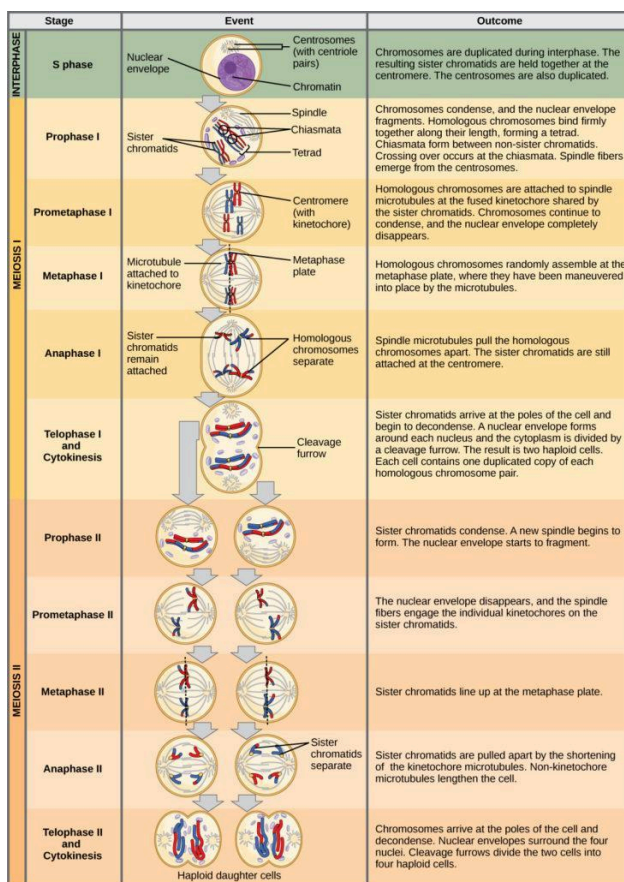
Macro-nutrients are the minerals required by the body in very large quantities.

| ELEMENT   | SOURCE      | FUNCTION                                     |
|-----------|-------------|--|
| Potassium | -most foods | -muscular contraction<br>-nerve transmission |

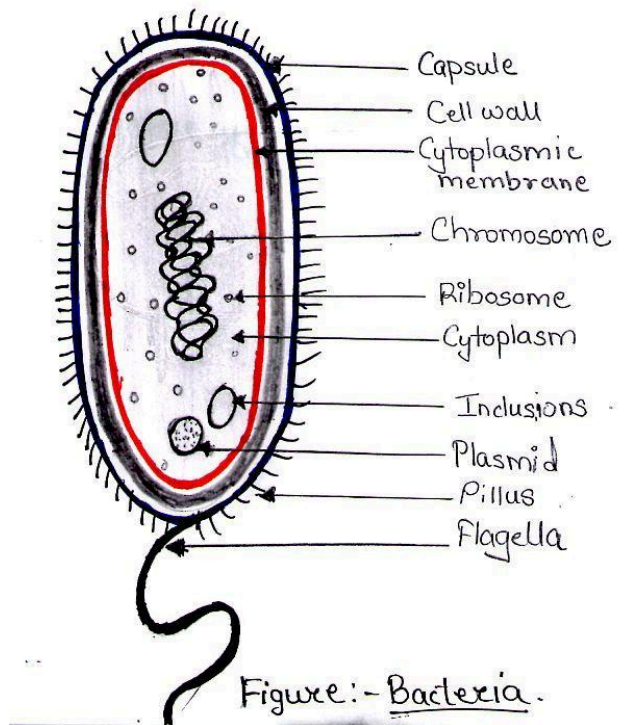
|         |                            |   |
|---------|----------------------------|---|
| Calcium | -milk<br>-green vegetables | -strong bones and teeth<br>-nerve impulse |
|---------|----------------------------|---|

|            |                         |   |
|------------|-------------------------|---|
| Phosphorus | -milk<br>-meat<br>-eggs | -building muscles<br>And nerve impulses |
|------------|-------------------------|---|

## 12.STAGES OF MEIOSIS



## 13.STRUCTURE OF BACTERIA.



- used in sewage treatment
- used in genetic engineering
- used in milk fermentation
- used in nitrogen fixing.

#### Disadvantages of bacteria

- cause diseases to both plants and animals
- cause decay of foods
- some are resistant to antibiotics hence difficult to treat.