

**THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF DEFENCE AND NATIONAL SERVICE
MILITARY SCHOOLS AND ASSOCIATION.
FORM FOUR MILITARY EXAMINATION 2026,
MARKING SCHEME**

BIOLOGY 2B

1. (a)

FOOD TESTED	PROCEDURES	OBSERVATION	INFERENCE
STARCH 00½	2cm³ of Solution J was added to a test tube, followed by 2 drops of iodine solution, then shaken gently. 0½ mark	The mixture turned into blue black. 00½	Starch was present 00½
REDUCING SUGAR 00½	2cm³ of solution J was added in test tube, 2cm³ of Benedict's solution were added then boiled. 0½ mark	A series of colour changes was observed in the mixture, from blue to green to yellow to orange and finally to brick red. 00½	Reducing Sugar was present. 00½
NON- REDUCING SUGAR 00½	2cm³ of Solution J was added in test tube, 1cm³ of dilute hydrochloric acid was added, boiled then cooled, followed by addition of 1 cm³ of sodium hydroxide solution for neutralization, then 2cm³ of Benedict's solution was added and reboiled. 0½ marks	A series of colour changes was observed from blue to green to yellow to orange and finally to brick red. 00½	Non reducing sugar was present. 00½
PROTEIN 00½	2cm³ of solution J was added in test tube. 2cm³ of sodium hydroxide solution was added followed by 1% of copper II sulphate solution drop by drop while shaking after each drop. 0½ mark	The mixture retained the blue colour of copper II sulphate solutions. 00½	protein was absent. 00½
LIPIDS 00½	2cm³ of solution J was added in test tube, 3 drops of Sudan III solution were added and shaken vigorously and left to settle for five minutes. 0½ mark	The solution formed a homogenous mixture with Sudan (III) solution. 00½	Lipid was absent. 00½

TOTAL = 15 marks

- 01 -

b). Natural sources of

a. Starch are maize, rice and cassava

b. Reducing sugar are ripe mangoes, tomato, germinating millets, onion

c). excess food from solution J is stored as glycogen in liver and body muscles

d). because pancreas secretes insulin hormone which deals with accelerating of glucose into the liver also stimulate liver to convert glucose to glycogen

e). because insulin is secreted directly in the blood streams then transported to the liver for conversion process

2. (a) Specimen's common names.

- A. Bee
- B. Earthworm
- C. Frog
- D. Groundnut plant

1 @ = 04

ORGANISM	KINGDOM	PHYLUM/DIVISION	CLASS
(A (Bee) 00½	Animalia 00½	Arthropoda 00½	Insecta 00½
B (Earthworm) 00½	Animalia 00½	Annelida 00½	Oligochaeta 00½
C (frog) 00½	Animalia 00½	Chordata 00½	Amphibia 00½
D (Groundnut plant) 00½	Plantae 00½	Angiospermophyta 00½	Dicotyledoneae 00½

= 08

(c) Economic importance's of Specimen A are:

- i. Used as the source of food such as honey.
- ii. Used in pollination in plants.
- iii. Used in biological control.
- iv. Used in biological studies.
- v. Cause death to other living things.
- vi. Improve soil fertility.

1½ @ = 09 (only six points)

Features of Kingdom plantae

- i. They are multicellular organisms
- ii. They have eukaryotic cells.
- iii. They are autotrophs
- iv. They have cellulose cell wall
- v. They store food as starch

1 @ = 04 (only four points)

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FORM FOUR PRE-NATIONAL EXAMINATIONS AUGUST 2026
BIOLOGY 2A MARKING SCHEME.

1. (a) (i) Blue black colour was observed.

(ii) Sample A contained starch. @ 02marks = 04 marks

(b) (i) Protein and lipids. 02 marks.

Protein: When 2mls of Sodium hydroxide solution were added in test tube 1 followed by drops of 1% Copper Sulphate solution while shaking, a purple/violet colour was observed to confirm the presence of protein in Solution B.

Lipids: When two drops of Sudan III solution were added in test tube 2 containing 2mls of Solution B and the mixture was shaken well then left to settle, a red ring formed on top of the mixture to confirm the presence of lipids.

@justification 03 marks = 06 marks.

(ii) Starch -provides energy to the body.

Protein -Promotes growth.

-Builds the body and repair worn out tissues.

- Makes protoplasm, enzymes, antibodies, hormones.

Lipids -Provide energy to the body

-Protects vital organs such as a heart and kidneys by acting like shock-absorbers.

any 1 function in each case @ 02marks = 06mark

(b) (iii) Starch, vitamins, minerals and roughage/water

@ 01 mark = 04 marks.

(c) Maltase, peptidase (Erepsin) and Lipase.

@ 01mark = 03 marks

GRAND TOTAL = 25 marks.

2. (a) (i) P-Spider

S-Moss plant

Q-Hibiscus Flower

T-Cactus stem

R-Butterfly

U-Tilapia fish/bony fish

@00¹/₂ = 03 marks.

(ii) Specimen	Kingdom	Phylum/Division
P(spider)	Animalia	Arthropoda
S (Moss plant)	Plantae	Bryophyta
T(Cactus stem)	Plantae	Angiospermophyta
U(Tilapia)	Animalia	Chordata

@00¹/₂ mark = 04 marks.

- (b) -It simplifies the study of living things.
 -Makes communication easy among biologists.
 - Enables man to identify and name numerous organisms.
 - Helps to understand evolutionary relationship of organisms.
 -Scientists can predict characteristics of an organism basing of those of its group.

any 3 points @ 01mark = 03 marks.

- (c) -It Lacks antennae
 - It has two body parts
 -It possesses eight legs (4 pairs of legs)

@01 mark = 03 marks

(d) (i). It is a reproductive structure. **01 mark**

(ii) Best pollinator: Insects **01mark**

Reasons: - It has nectaries used by insects as food.

- Has brightly coloured petals to attract insects.
- It has large, sticky pollen grains to stick to the insect's body.
- It has sticky stigma for pollen grains to stick on them.
- Stigmas and anthers are firmly held to protect them from insect's destruction.

any 3 points @ 01 mark = 03 marks.

- (iii) - It causes production of seeds for continuation of life.
 - Fruits are produced some of which are used as food by animals.
 - Increases the population of such plants.
 - It shows the development of species in order to preserve it and avoid vanishing.
 - Maintains good and desirable traits within the species.

any 3 points @ 01 mark = 03 marks.

- (e)
- Source of food to human and other animals.
 - Provide income to fishing communities.
 - Some of its products can be processed into chicken feed and glue.
 - Fish oils are useful sources of medicine.
 - Some are kept in aquarium and used as pets or for ornamental purposes.
 - Some bony fish are used in biological studies and research.

any 4 points @ 01mark = 04 marks.

GRAND TOTAL = 25 marks.