

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

033/2C

BIOLOGY 2C

(ACTUAL PRACTICAL C)

(For Both School and Private Candidates)

Time: 2:30 Hours

ANSWERS

Year: 2015

Instructions

1. This paper consists of two questions.
2. Answer all questions.

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1. You have been provided with specimens L, M and N.

(a)(i) Identify specimens L, M and N by their common name.

- L: Fruit
- M: Seed
- N: Flower

(ii) Which part of a plant are specimens L, M and N?

- L: Ovary (develops into fruit)
- M: Ovule (develops into seed)
- N: Flower (reproductive organ)

(b) Observe specimen N carefully. Then:

(i) Name the structures which constitute the female and male parts of specimen N.

- Male: Stamen (anther and filament)
- Female: Pistil or carpel (stigma, style, ovary)

(ii) Explain how specimen N manages to attract insects for pollination.

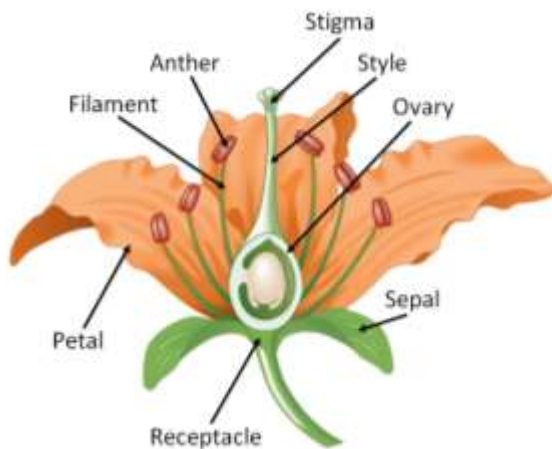
- By having brightly colored petals
- Producing sweet scent
- Producing nectar as food for insects
- Sometimes with unique patterns visible to insects

(iii) Explain how fertilization process takes place in specimen N.

Pollen grain lands on the stigma, germinates and grows a pollen tube through the style to the ovary. The male gamete travels down the tube and fuses with the female gamete (ovule) in the ovary to form a zygote.

(c) Using a scalpel, remove all sepals and petals (including stamen tube) from specimen N. Then:

(i) Draw a well labeled diagram of the specimen.



(ii) Identify which part of the specimen receives the male gametes during pollination.

Stigma

(iii) Identify which part of the specimen transfers the male gametes to the place where fertilization takes place.

Pollen tube

2. You have been provided with specimens R, S and T.

(a)(i) Identify specimens R, S and T by their common names.

- R: Butterfly

- S: Housefly

- T: Cockroach

(ii) Classify specimens S and T to phylum level.

- Kingdom: Animalia

- Phylum: Arthropoda

(iii) Name the Class and state two distinctive features for each Class of specimens R, S and T.

R: Class – Insecta

- Has three body parts (head, thorax, abdomen)

- Has compound eyes

S: Class – Insecta

- Has a pair of wings

- Has three pairs of legs

T: Class – Insecta

- Has antennae

- Has jointed appendages

(b) Study specimens R, S and T carefully then answer the following questions:

(i) State the habitat of specimens R and S.

- R (Butterfly): Gardens, open fields, forests

- S (Housefly): Human dwellings, rubbish dumps, kitchens

(ii) State four adaptation features which indicate how specimen S is adapted to its habitat.

- Has wings for movement

- Compound eyes for wide vision

- Sponging mouthpart to feed on liquids

- Bristled body helps in carrying dirt and pathogens

(iii) In what ways are specimens S and T considered “useful” and “harmful” to human being and his environment?

- Useful:

S helps in decomposition

T helps in cleaning food remnants

- Harmful:

S spreads diseases such as cholera

T contaminates food and causes food poisoning