

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: 2011

Instructions

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

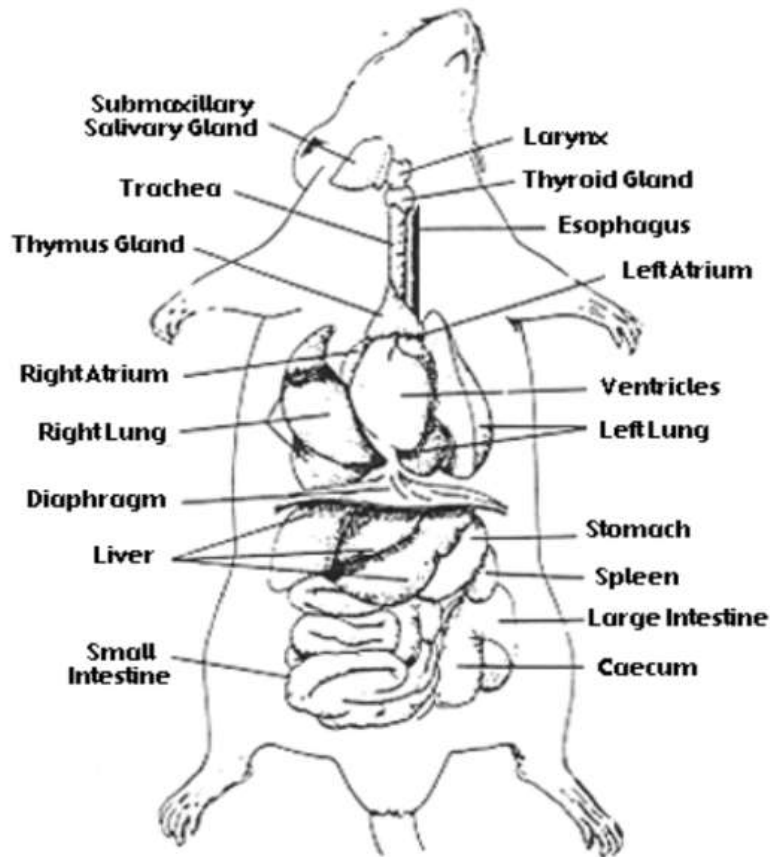
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1. Study specimen A₃ which is a dissection of a mammal.

(a) Carefully observe the dissected mammal using a hand lens without disturbing it in any way.

(i) Draw a labelled diagram of A₃.



(ii) Name the system which have been displayed and pinned to your right hand side.
The system displayed is the digestive system.

(iii) Mention two processes which take place in the system named above.

- Digestion
- Absorption

(iv) What is the importance of the processes named in (a)(iii) above?

Digestion breaks down complex food substances into simpler absorbable forms. Absorption allows nutrients from digested food to enter the bloodstream for distribution to cells throughout the body.

(b) Name the part of the system responsible for food absorption.

The small intestine, particularly the ileum, is responsible for food absorption.

(c) How the part named in (b) above is adapted for food absorption.

The small intestine has a long, coiled structure to provide large surface area. It contains villi and microvilli which increase surface area further. Its lining is thin for faster diffusion, and it has an extensive capillary network for efficient transport of absorbed nutrients.

(d) Which part of a system is responsible for reabsorption of water?

The large intestine (colon) is responsible for reabsorption of water from undigested food.

2. Study specimen R, S, T, U, V and X carefully, then answer the questions that follow.

(a) Identify the organisms using their common names.

R: Butterfly

S: Moth

T: Snail

U: Earthworm

V: Mushroom

X: Fern

(b) (i) Mention the kingdom to which specimen R, S, W and X belongs.

Specimen R and S belong to Kingdom Animalia.

Specimen W and X belong to Kingdom Plantae.

(ii) Mention the feature which distinguishes specimens R and S.

R (butterfly) has club-shaped antennae and rests with wings held vertically.

S (moth) has feathery antennae and rests with wings spread flat.

(c) Name the phylum to which specimen T, U and W belongs.

T (snail): Phylum Mollusca

U (earthworm): Phylum Annelida

W (moss or liverwort): Phylum Bryophyta

(d) (i) What is the economic importance of specimen X?

Specimen X (fern) helps in preventing soil erosion, is used as an ornamental plant, and plays a role in traditional medicine.

(ii) State the features which places organism X and V into their particular kingdom.

X and V are placed in Kingdom Plantae because they possess chlorophyll, have cell walls made of cellulose, and undergo photosynthesis. They also exhibit alternation of generations in their life cycle.