

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

133/3B

**BIOLOGY 3B
(ACTUAL PRACTICAL B)
(For Both School and Private Candidates)**

Time: 3:20 Hours

Monday, 25th February 2013 a.m.

Instructions

1. This paper consists of **three (3)** questions.
2. Answer **all** questions.
3. Question **one (1)** carries 20 marks and the other **two (2)**, 15 marks each.
4. Cellular phones are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

1. (a) Dissect specimen S_1 provided and display the Urinogenital system. Draw a large, neat, well labelled diagram of your dissection.
Leave your dissection well displayed for assessment.
 - (b) Comment on the shape of the kidneys in specimen S_1 as compared to that of other animals such as amphibians.
 - (c) Observe the left kidney of the specimen. Without disturbing it in any way, draw a large labelled diagram to show the side view of the kidney.
 - (d) Comment on the positions of the testis/ovaries in S_1 as compared with other animals like amphibians.
2. Solution **R** is a mixture of different food substances. Design and carry out an experiment to identify the type of food substances present in solution **R** using the reagents provided.
 - (a) Record your work in the usual tabular form.
 - (b) Which food substance identified in solution **R** is stored in the plant body.
 - (c) Name the end products of the food substance mentioned in 2 (b) after its digestion.
 - (d) What are the roles of the food substances identified in 2 (a) in the human body?
3. (a) Using the key provided below identify specimen S_2 by gradually writing the numbers corresponding to the positive statements until you come to the appropriate group name.

1.	(a)	Flower zygomorphic	(ii)
	(b)	Flower actinomorphic	(iv)
2.	(a)	Sepal form a tube	(iii)
	(b)	Sepal five, two larger than the rest	Polygalaceae
3.	(a)	Ovary of five carpels, one seeded	Geraniaceae
	(b)	Ovary of five carpels, many seeded	Balsaminaceae
4.	(a)	Staminal filaments tubular	(v)
	(b)	Staminal filaments free	(viii)
5.	(a)	Staminal filaments joined at the base only or at several bundles	(vii)
	(b)	Staminal filaments joined completely except for a very short branch attaching the anthers	(vi)
6.	(a)	Style one	(vii)
	(b)	Style more than one	(viii)
7.	(a)	Flower with a tube for stamens and sepals attachment	Lythraceae
	(b)	Flower without a tube for stamens and sepals attachment	(viii)

8. (a) Stamens numerous Malvaceae
(b) Stamens 5- 15 Sterculiaceae

- (b) Write the floral formula of specimen S_2 .
- (c) Use the hand lens to observe specimens S_2 and S_3 carefully, then answer the questions that follow:
- (i) How is specimen S_3 adapted to pollinate specimen S_2 ?
 - (ii) State one observable adaptive feature which makes each pollen grain suitable for the method of pollination in specimen S_2 .
- (d) State how specimen S_2 is adapted to its function.