

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

133/2

**BIOLOGY 2**  
(For Both School and Private Candidates)

**Time: 3 Hours**

**Tuesday, 12<sup>th</sup> May 2015 p.m.**

**Instructions**

1. This paper consists of **eight (8)** questions in sections A, B, C and D.
2. Answer five questions by choosing at least **one (1)** question from each section.
3. Each question carries **twenty (20)** marks.
4. Except for diagrams that must be drawn in pencil, all writing should be in blue or black ink.
5. Cellular phones are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer booklet(s).



## SECTION A

Answer at least **one (1)** question from this section.

1. (a) Give five reasons to justify the kingdom to which *Agaricus* belongs.  
(b) With examples, explain five advantages of kingdom Plantae to human being.
2. (a) (i) Identify divisions of the kingdom Plantae.  
(ii) State three general characteristics of each division identified in 2(a) (i).  
(b) Draw the structure of a moss plant and show sporophyte and gametophyte generations.

## SECTION B

Answer at least **one (1)** question from this section.

3. Explain four common disorders of the urinary system in human, their causes and symptoms.
4. (a) Describe five general roles of liver in mammalian body.  
(b) Explain how urea is formed in the mammalian liver.

## SECTION C

Answer at least **one (1)** question from this section.

5. Figure 1 shows a typical cell cycle of higher plants and animals. Identify five events which take place in each stage indicated by letters  $G_1$ , S,  $G_2$  and M respectively.

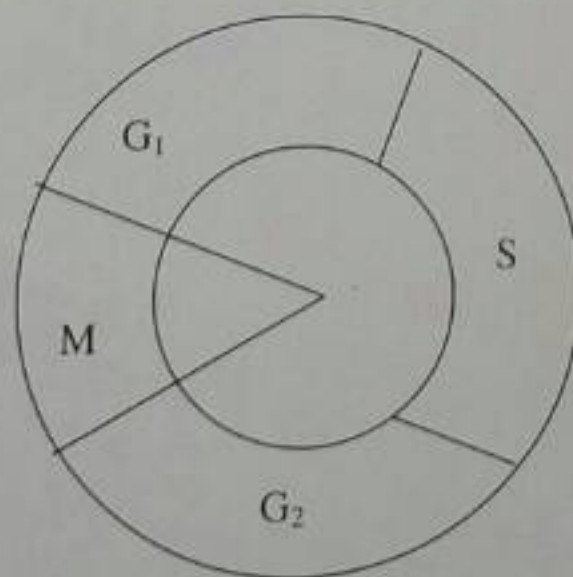


Figure 1

6. (a) Give five differences between mitosis and meiosis.  
(b) Analyze five significance of mitosis in living organisms.

### SECTION D

Answer at least **one (1)** question from this section.

7. A homozygous purple-flowered short-stemmed plant was crossed with a homozygous red-flowered long-stemmed plant and the  $F_1$  phenotypes had purple flowers and short stems. When the  $F_1$  was test crossed with a double homozygous recessive plant the following progeny were produced:
- 52 purple flower, short stem
  - 47 purple flower, long stem
  - 49 red flower, short stem
  - 45 red flower, long stem.
- (a) Which characters were dominant and why?
- (b) Carry out crosses to show the formation of  $F_1$  and  $F_2$ .
8. Interpret ecological pyramids and state three limitations of each.