

231/2
BIOLOGY
Paper 2
(PRACTICAL)
Oct./Nov. 2003
2¼ hours

1. You are provided with specimens labelled C, D and a solution labelled L

a) i) State the habitat of specimen C

ii) Name the trophic level occupied by specimen C

iii) Give a reason for your answer in (a) (ii) above

b) i) Place 5cm³ of solution L into a 100ml beaker. Using a straw, blow gently into the solution

ii) Give a reason for the observation in (b) (i) above

c) Place 5cm³ of a solution L into a 100ml beaker. Using a pair of forceps, submerge specimen C into one of the 100ml beaker. Put the two beakers in the dark. Leave the set up for at least one hour and observe.

i) Record your observation

ii) Explain the observation in (c) (i) above

d) Examine specimen D using a hand lens. Giving a reason, state the division to which the specimen belongs.

e) What role is played by specimen D in an ecosystem

f) Draw and label specimen D

You are provided with specimens labelled P1, P2, P3, P4, P5 and P6.

A dichotomous key shown below can be used to identify them.

1. (a) Leaves simple go to 2
(b) Leaves compound *Cassia*
2. (a) Leaves green go to 3
(b) Leaves purple *Tradescantia*
3. (a) Leaves parallel veined *Zea*
(b) Leaves net veined go to 4
4. (a) Leaf margin serrated go to 7
(b) Leaf margin smooth go to 5
5. (a) Leaves hairy *Solanum*
(b) Leaves not hairy go to 6
6. (a) Leaves ovate *Bougainvillea*
(b) Leaves lanceolate *Mangifera*
7. (a) Leaves fleshy go to 8
(b) Leaves not fleshy *Hibiscus*
8. (a) Leaves with pointed tip *Kalanchoe*
(b) Leaves with rounded tip *Bryophytum*

- (a) Use the dichotomous key to identify each of the plant specimens provided. In each case show in sequence the steps (e.g. 1a, 2b etc.) in the key that you followed to arrive at the identity of each specimen.

(12 marks)

Specimen	Steps followed	Identity
P1
P2
P3
P4
P5
P6

- (b) (i) Name the likely habitat of specimen P1. (1 mark)

.....

f i) Suggest the expected results if the juice from specimen E was boiled for 30 minutes, cooled and added drop by drop to DCPIP solution

ii) Explain the expected results in (f) (i) above

3. You are provided with a specimen labelled B

a) i) Name the class to which the specimen belongs

ii) Give two reasons for your answers in (a) (i) above

b) What term is used to describe the shape of the specimen?

c) Stroke the specimen from the:

i) Head to tail. Record your observation

ii) Tail towards the head. Record your observation

iii) What is the significance of your observation, in c(i) and (ii) above?

d) Measure in millimeters the length of the:

i) specimen from the tip of the mouth to the tip of the tail

Length _____ cm

ii) tail from the anus to the tip of the tail

Length _____ cm

iii) Using the measurements in (d) (i) and (ii) above, calculate the tail power.

e) Name and draw the fins on the specimen that:

i) enable the specimen to balance, brake and change direction

ii) prevent the fish from rolling and yawing