

# **Biology Paper 1 Practical, May/June 2012**

## **Question 1**

**Study carefully specimens E and F and use them to answer 2(a) to 2(d)**

1. (i) What class of organisms do specimens E and F belong to? (1 mark)  
(ii) State three similarities between specimens E and F (3 marks )  
(iii) In a tabular form, state three differences between specimens E and F  
(3 marks )
  
2. State two ways each in which:  
(i) Specimen E;  
(ii) Specimen F are of economic importance (4 marks )

## Question 2

### LIST OF SPECIMENS PROVIDED

- SPECIMEN A: GARDEN EGG
- SPECIMEN B: TRIDAX FRUIT
- SPECIMEN C: GRAIN WEEVIL
- SPECIMEN D: TICK
- SPECIMEN E: RAT/GUINEA PIG
- SPECIMEN J: TILAPIA FISH (WET PRESERVED)
- SPECIMEN K: TOAD (WET PRESERVED)
- SPECIMEN L: LIZARD (WET OR DRY PRESERVED)

### Question 1

Study carefully specimens A and B and use them to answer questions

1(a) to 1(c).

1. (i) Name the types of fruit in specimens A and B with reasons [ 4 marks ]
- (ii) Make a drawing, 8 – 10 cm long of the lateral view of Specimen B and label fully. [ 10 marks ]
1. Describe the modes of dispersal of specimens A and B. [ 6 marks ]
2. In a tabular form, state five differences between specimens A and B [ 5 marks ]

## Question 3

Carefully study specimens J and K and answer questions 4(a) to 4(d).

1. Name the type of refuse in specimens:
  - (i) J;
  - (ii) K. (2 marks )
2. (i) List three animal vectors of disease causing organisms that breed on each of specimens J and K (6 marks )
  - (ii) Name four diseases each caused by the animal vectors associated With each of specimens J and K (8marks )
3. Name one method of disposal of each of specimens J and K in:
  - (i) Rural areas;
  - (ii) Urban areas. (4 marks )
4. (i) State four effects of improper disposal of specimen K (4 marks )
  - (ii) In a tabular form, state five differences between specimen J and K (5 marks )
  - (iii) Outline one way in which specimen J is of importance to farmers. (1 mark )

### **Question 1**

1. Explain briefly four factors that affect the diffusion of substances. [ 8 marks ]
  2. Explain the following terms:
  3. *active transport*;
  4. *transpiration*. [ 4 marks ]
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1. State four ways by which plants can reduce high rate of transpiration [4 marks ]
  2. State the features of red blood cells and how these features adapt the cell to perform its functions. [ 4 marks ]

### **Question 2**

1. Describe briefly the role of the stomach in digestion. [8 marks ]
  2. (i) Name three parts of plants in which food can be stored [6 marks ]
- (ii) Give one example in each case [6 marks ]
1. Explain briefly how the level of sugar in the mammalian blood can be regulated. [6 marks ]

### **Question 3**

1. (a) Explain briefly the following terms:
  - (i) conservation;
  - (ii) endangered species. [ 6 marks ]
- (b) State:
  - (i) Five reasons why conservation of forests is important [5 marks ]
  - (ii) Four ways by which forest reserves can be conserved [4 marks ]
- (c) (i) What is the importance of decomposers in the ecosystem?
  - (ii) Name one plant and one animal decomposer. [5 marks ]

### **Question 4**

1. (a) (i) What is a gene? [2 marks ]
  - (ii) Differentiate between the terms genotype and phenotype [2 marks ]
- (b) Explain the following terms:
  - (i) hybrid;
  - (ii) pure breeding;
  - (iii) nucleotide. [6 marks ]
- (c) In garden pea seeds, smooth seed coat is dominant over rough seed coat. With the aid of a genetic diagram, determine the result expected if a

**homozygous rough pea is crossed with a smooth seed coat plant whose parent were rough coated. [10 marks ]**

**Question 7**

**1. (a) Explain the following terms:**

**(i) disease;**

**[4 marks ]**

**(ii) symptoms of diseases**

**(b) (i) List two physical and two chemical barriers that prevent pathogens from**

**penetrating the body of an**

**organism**

**[4 marks]**

**(ii) Explain how vaccination protects the body from contracting infectious diseases**

**[5 marks]**

**(c) Distinguish between an antibody and an antigen.**

**[4 marks ]**

**(d) Name the causative agents of:**

**(i) Malaria;**

**(ii) Cholera;**

**(iii) AIDS**

**[3 marks]**

**Question 8**

**1. (a) (i) Describe epigeal germination of a seed**

**[ 6 marks ]**

**(ii) In a tabular form, state three differences between epigeal germination and hypogeal germination**

**[ 3 marks ]**

**(b) (i) What is seed dormancy?**

**[2 marks ]**

**(ii) State three ways by which dormancy in seeds can be broken**

**[3 marks ]**

**(c) State six advantages of using contraceptives in human populations**

**[6 marks ]**