

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

033/1

BIOLOGY 1

TIME: 3 HOURS

Thursday, 11th October 2012a.m.

INSTRUCTIONS

1. This paper consists of three sections A, B and C.
2. Answer **all** questions from sections A and B and **one (1)** question from section C.
3. Read each question carefully before you start answering it.
4. Except for diagrams that must be drawn in pencil, all writing should be done using a blue or black pen.
5. Calculators are **not** allowed in the examination room.
6. Cellular phones are **not** allowed in the examination room.
7. Write your **Examination Number** on every page of your answer booklet(s).

SECTION A (20 MARKS)

1. For each of the items (i) – (x), choose the correct answer from among the given alternatives and write its letter beside the item number.

- (i) The joint in the human body which allows movement in all directions is known as
A pivot B hinge
C double hinge D ball and socket
E peg and socket
- (ii) Which of the following is a metabolic waste product?
A Tears B Saliva
C Mucus D Faeces
E Urine
- (iii) The following are examples of water-borne diseases:
A malaria and bilharzia B yellow fever and typhoid
C diarrhoea and malaria D cholera and plaque
E cholera and typhoid
- (iv) One of the distinctive features of kingdom Fungi is possession of:
A plasma membrane B cytoplasm
C chitin materials D cell membrane
E cellulose material
- (v) The regions of most active growth in plants are found mainly in the
A axillary buds and flowered B stems and leaves
C stems and root hairs D leaves and flowers
E stem and root apices
- (vi) A grasshopper ventilates its gaseous exchange surfaces by
A moving the diaphragm B beating of cilia
C rhythmic body movement D opening of spiracles
E moving its rib cage
- (vii) The taxonomic category of organisms belonging to the same class but not the same family is:
A Species B Genus C Order
D Phylum E Kingdom
- (viii) The breakdown of glycogen into glucose in the body is due to the action of:
A insulin B adrenaline C secretion
D glucagon E gastric
- (ix) The function of sunlight energy in the human skin is to stimulate the synthesis of
A vitamin A B vitamin C C vitamin D
D vitamin K E vitamin B

(x) A rise in the temperature of a human body is corrected by

- A construction of the skin arteries and sweating
- B construction of the skin arteries and shivering
- C dilation of the skin arteries and sweating
- D dilation of the skin arteries and shivering
- E shivering and sweating

2. Match the responses in **List B** with the phrases in **List A** by writing the letter of the correct response from **List B** beside the item number of **List A** in your answer booklet. Each choice in column B may be used once, more than once or not at all.

LIST A	LIST B
(i) The layer of cells sensitive to light	A. Aqueous humour
(ii) Lacks light intensity cells	B. Cornea
(iii) Cells sensitive to light of low intensity	C. Iris
(iv) Cell sensitive to coloured light intensity	D. Eyebrow
(v) Control the intensity of the light entering the eye	E. Retina
(vi) Control the shape of the lens	F. Rods
(vii) Correct short sight	G. Blind spot
(viii) Reduce reflection of the light within the eye	H. Cones
(ix) Helps to refract the light into the eye	I. Eyelash
(x) Cause refraction of the light in the eye	J. Choroids
	K. Ciliary body
	L. Diverging lens
	M. Fovea
	N. Pupil
	O. Eyelids

SECTION B (60 Marks)

Answer **all** questions in this section.

All questions carry **8 marks** except for question five and six which carry **6 marks** each.

3. (a) Outline four features which distinguish a Biology Laboratory from other school facilities.
(b) Outline four steps involved in using a microscope.
4. (a) Define the following terms as used in Biology:
 - (i) First Aid kit
 - (ii) Risks
 - (iii) An accident
 - (iv) Poisoning
(b) Outline four procedures of giving First Aid to a person who has been stung by a bee.
5. (a) Describe the following ecological terms:
 - (i) Decomposers
 - (ii) Producers
 - (iii) Parasites
(b) With example, briefly explain how comparative embryology supports the idea of organic evolution.
6. (a) Outline three factors affecting transpiration.
(b) State three significance of transpiration.
7. (a) The laboratory technician at Mtakuja secondary school performed an experiment with the aim of proving the Mendelian experiment on single factor inheritance for a coat colour in mice. In the experiment, pure-breed (homozygous) black fur mouse (male) was mated with a pure-breed brown fur mouse (female). The gene for black fur colour was dominant over the gene for brown fur colour. Use crosses to show the possibilities of the results in the first filial generation.

(b) Explain the meaning of the following:
 - (i) Gene
 - (ii) Recessive
 - (iii) Phenotype
8. (a) Define the following terms:
 - (i) Growth
 - (ii) Intercalary growth
(b) Briefly explain three factors that affect growth and development in humans.

9. The diagram in Figure 1 is the alimentary canal of a human being. Study the diagram and answer the questions that follow:

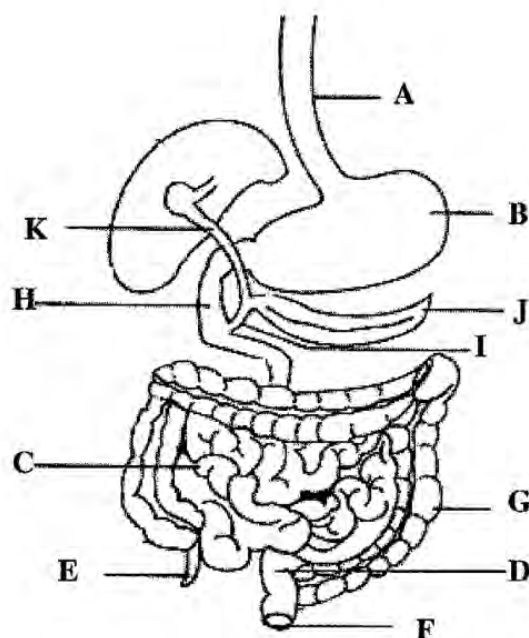


Figure 1

- (a) Name the parts labelled A – K.
 - (b) (i) Name the digestive juice which is produced in organ labelled B.
(ii) Mention the substances contained in the digestive juice named in (b) (i) above.
10. (a) Briefly explain three importance of movement in plants and animals.
- (b) State any five functions of the skeleton.

SECTION C (20 Marks)

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

11. Describe the mechanism of breathing in human beings. Diagrams are not necessary.
12. Elaborate the causes of drug abuse to young people and advise the Tanzanian Government on the ways of combating drug abuse in the country.
13. Explain five factors which contribute to irresponsible sexual behavior among young people and their effect in the community.