ISESE

O'LEVEL BIOLOGY

MARKING GUIDE

SECTION A (16 marks)

1 @ 01 mark = 10 marks

I	II	III	IV	V	VI	VII	VIII	IX	X
B	D	C	A	B	C	C	C	E	C

2 @ 01 mark = 06 marks

i	ii	iii	iv	v	vi
H	A	B	C	G	J

SECTION B (54 marks)

3 @ 03 marks

Food	Nutrients
Eggs	Protein
Irish potatoes	Starch
Sunflower seeds	Lipids

(b) Functions of proteins 06 marks

i. Helps to repair damaged tissues
ii. Building body cells
iii. Promoting growth
iv. Making protoplasm
v. Major component of cell membrane
vi. Alternative source of energy.

4 @ i. Spread of diseases like diarrhoea due to poor hygiene
ii. Bad odour and unclean surrounding
iii. Poor manners cause disrespect, conflicts and disrupt learning
iv. Teachers may struggle to maintain displine
v. General decline in academic performance

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vi. Other students may feel unsafe and distrated
• 06 marks

(b) i. Provision of health and hygiene education
ii. Role modeling and rainforcement
iii. Access to hygiene facilities. 03 marks

5 (a) SENSE ORGAN AND NERVOUS SYSTEM
• Eyes detect the visual stimulus (snake)
• Impulse travel via optic nerve to the brain
• Brain intercepts the image as danger
• Brain sends impulses through motor neurones
• Muscles react to stop movement and prepare for action.
• Involves coordinates action between sensory input and motor output 03 marks

(b) ROLE OF BRAIN
• Receives impulses from sense organs Eg eyes
• Processes and intercepts the threat
• Decides on an appropiate response Eg run or stop
• Sends signals to effectors for response 02 marks

(c) Brain signals the hypothalamus
• Hypothalamus activates pituitary gland.
• Pituitary stimulates adreral glands to release adrenaline.
• Adrenaline increase heart rate and muscles readness
• Nervous system gives instant command 04 marks

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6 (a) ⇒ Mutualism Is the relationship in which two organisms benefit each other. Eg rhizobium bacteria in the root nodules of legumes convert nitrogen into nitrates of use by plants.

→ Commensalism :- Is the interaction that is beneficial to one organism and is neutral to the other organism Eg when bird build a nest in hole in a Trade.

⇒ Parasitism :

In this association one organism benefit while the other is harmed. Eg plasmodium that causes malaria in human beings. @ 01 mark = 03 marks

(b) Feeding relationship is food chain

Grass → Grasshopper → Toad → Snake → Bacteria

03 marks

(c) 03 marks.

Trophic level	Organism
Producer	Grass
Primary consumer	Grasshopper
Secondary consumer	Toad
Tertiary consumer	Snake
Decomposer	Bacteria

7 (a) Antagonistic muscles work in pairs when one contract the other relaxes.

- In the arm biceps and triceps are antagonistic
- To bend the arm:
  - Triceps contract and biceps relax
- To strengthern the arm:
  - Triceps relaxes and biceps contract
- Joint allow movement in one direction

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• Coordination of muscles and joints enables controlled arm movement. 06 marks

(b) • Earthworm uses peristaltic waves while grasshopper uses legs and wings
• Earthworm moves by anchoring with setae while grasshopper jumps with hind legs.
• Earthworm use circular and longitudinal muscles and setae while grasshopper uses jointed legs, muscles and wings 03 marks

8 (a) Factors affecting the contents of water and salts in human body
i. Weather
ii. The type of food taken @ 02 marks
iii. Secretion of Antidiuretic hormone (ADH)

(b) i. Antidiuretic hormone
ii. Aldosterone hormone @ 1½ mark

SECTION C (30 marks)

9 Definition: network responsible for transporting blood, nutrients, gases and wastes. 02 marks
• Type of system: human have a closed, double circulatory system 02 marks
• Explanation of double circulation - pulmonary and systematic circulations 03 marks
• structure of the heart - four chambers 02 marks
02 marks { • Heart function - pumping blood
• Types of blood vessels - Arteries (their feature
• Vein (their feature)
• capillaries (their features)

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• Transported materials - oxygen, CO_2, nutrients, hormones and wastes 01 mark.

• Importance of circulation - oxygen supply, removal of wastes, temperature regulation, immunity and distribution of hormones 03 marks

10 (a) The menstrual cycle is the monthly discharge of blood mucus and epithelian cells from the uterus through the vagina. 2.5 marks

(b) The mestrual cycle is regulated by following hormone
i. Gonadotrophic hormone :- It stimulates the anterior pituitary to secrets Follicle Stimulating Hormone (FSH)
ii. Follicle Stimulating Hormone (FSH) :- stimulate the development of several follicles in the ovary livings.
iii. Oestrogen hormone :- It stimulating repair and development of the endometrium in uterus. This prepare s for the possibility of pregnancy.
iv. Lutenizing hormone (LH) : It influences ovulation in the ovary. @ 2.5 marks = 10 marks.

(c) Meal rich in real food like soya beans, beans, peas and sorghum these stimulate the secretion of blood juice contain iron minerals. 2.5 marks

11 Introduction :- Briefly explain the concept of defence system.

⇒ Body defence system :- Is a system in the body which helps the body to prevent entrace of micro-orga nisms in the body.

Main body :- Describe points on how the body defence system works.

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i. Skin :- The glands on the skin like sweat glands and sebaceous glands secrete sweat and sebum oily which contains antibacterial agents that kills bacteria.

ii. Eyes :- Tears glands secrets tears which contains antibacterial agents.

iii. Ears :- The outer ear canal produce wax material which traps bacteria, virus and small dust particles.

iv. Digestive system :- In the stomach the hydrochloric acid secreted by stomach walls kill most of bacteria taken in with food.

v. The blood :- The lymphocytes provide antibodies that destroy pathogens while the phagocytes engulf and remove micro-organisms which invades the body

vi. Ciliated membrane :- The presence of cilia in some parts of the body Trap dusts and bacteria which should be given out through sneezing and coughing.

Conclusion :- Any relevant conclusion.

Introduction 1½ mark

Main body @ 02 marks = 12 marks

Conclusion 1½ marks

Total 15 marks

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