CSSC

BIOLOGY 01

MARKING GUIDE

FORM IV

1.

i	ii	iii	iv	V	vi	vii	viii	ix	x
C	D	A	B	B	A	A	C	E	B

2.

i	ii	iii	iV	V	Vi
I	B	H	G	F	D

3 @ i/ Plant with yellowish leaves produce poor yield than a plant with green leaves, Because it lack a Chloroplast which is responsible for photosynthesis and also poor distribution of Auxins hormones in the tips of of the leaf. 02 marks

ii/ A fish can live in water where there is low amount of oxygen because it posses gills which are efficient in aquatic habitat. 02 marks

iii/ Growth is quantitative because it can be measured in terms of mass, volume and size while development is qualitative because can not be measured. 02 marks

b) Disadvantages of Transpiration.

- It can cause plant wilting 01 mark
- It can cause death of plant 01 mark
- It may lead shortage of rainfall 01 mark.

4. a) Euglena 01 mark

b) THE DIAGRAM OF EUGLENA.

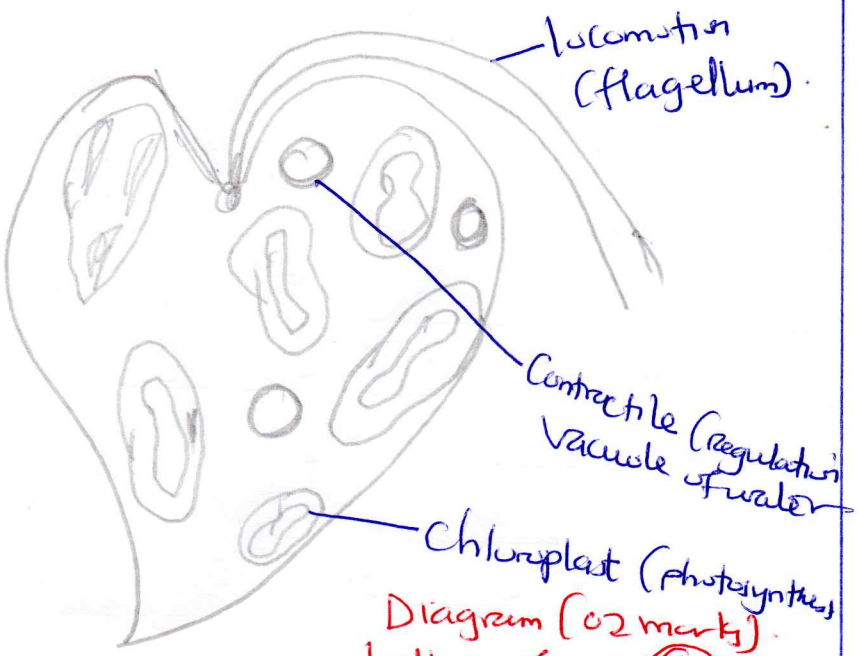


Diagram (02 marks)
Labling 06 marks @ 02 mark.

5. IMPORTANCE OF FUNGI.

i) Some fungi like yeast are used in fermentation process
ii) Some are used as food like edible mushroom.
iii) Yeast are used in brewing and wine making
iv) Some fungi like penicillium produce antibiotics such as penicillin.

DISADVANTAGES OF FUNGI.

i) Some fungi are poisonous can cause death.
ii) Some fungi cause wood rotting.

09 marks @ 01½ marks.

6. a) - The receptors detect the impulse, Impulse produced and transmitted to the spinal cord along the sensory neuron. Then the spinal cord intergrate and interpret the impulse, the impulse transmitted to relay neuron then to the motor neuron. The impule sent from Spinal cord to the effector through motor neuron. Then the impulse cause the muscle to contract and withdraw ~~either~~ the arm from hot water. ○3 marks.

b)

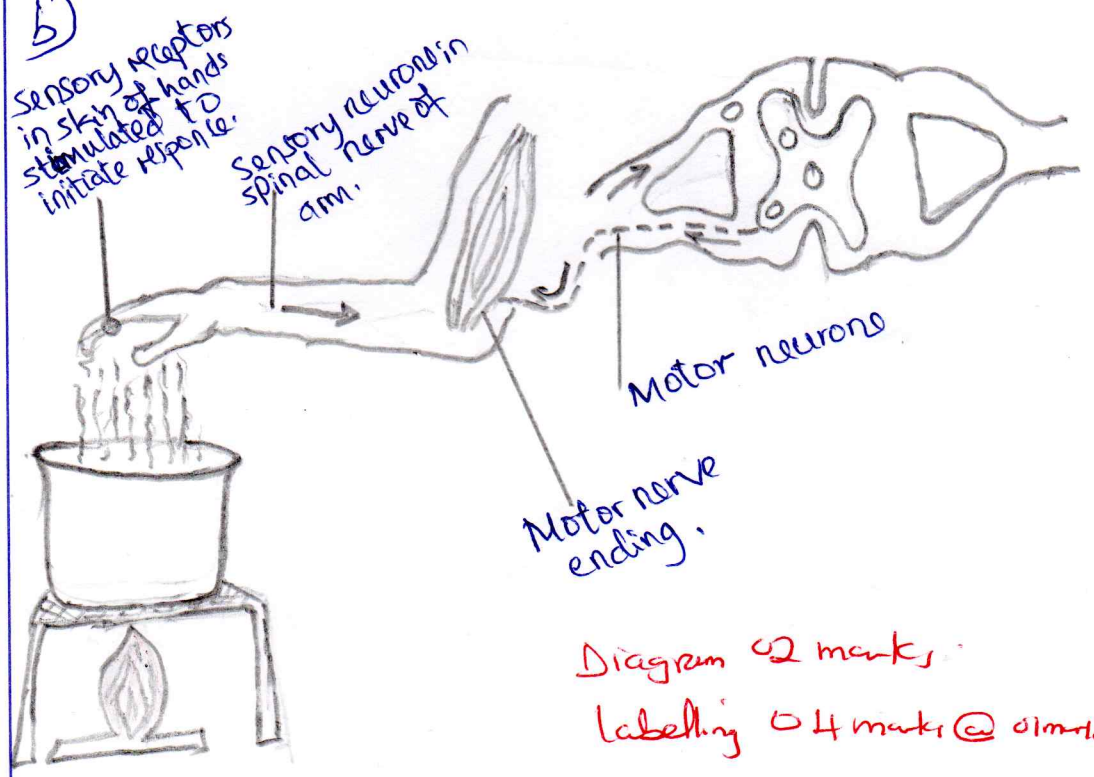


Diagram ○2 marks.
Labelling ○4 marks @ 01mark

7. a) i/ Because swallowing cannot be affected by the force of gravity, It is facilitated by peristalsis. 02 marks.

ii/ To prevent it from digesting the wall of the stomach. 02 marks

iii/ To supply oxygen used to break down lactic acid produced during exercise 02 marks.

b/ i) Moist lining to dissolve gases.

ii) Thin membrane for easier diffusion of gases

iii) Well supplied with blood capillaries to transport diffused gases.

iv) Highly branched to maximize absorption of gases. Any three 01 mark @ = 03 marks.

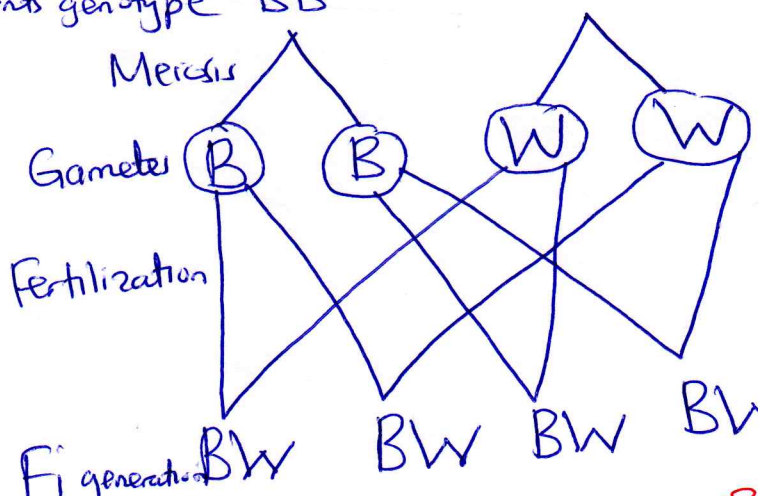
8. a) Solution.

Let the allele for black fur cow be B 01/2 mark

For a white fur bull be W.

Parents phenotype black cow × white fur

Parents genotype BB × WW



03 marks.

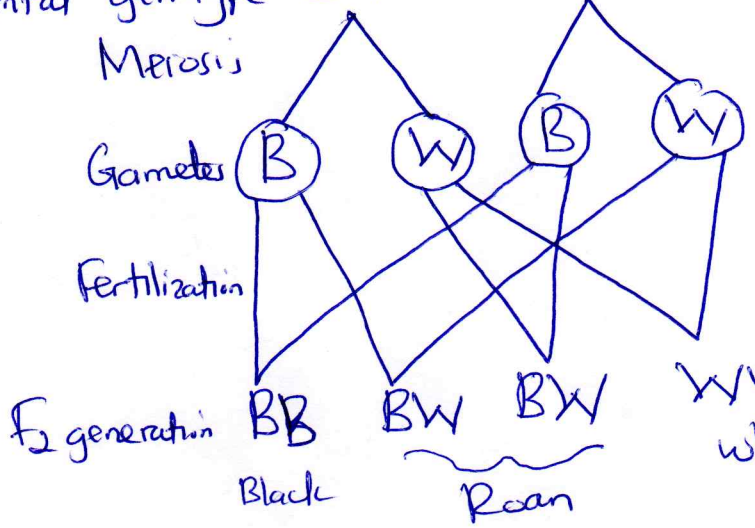
Genotype: All are BW.

Phenotype: All are Roan.

8. Parents Cow × Cow.

Parental phenotype Roan × Roan.

Parental genotype BW × BW.



03 marks

b) Phenotypic ratio of F_2 generation.

1:2:1. 01 mark.

c) Calculate the number of offspring with

i) Black fur

$\frac{1}{4} \times 3200 = 800$ 00½ mark

ii) White fur

$\frac{1}{4} \times 3200 = 800$ 00½ mark

iii) Roan fur

$\frac{2}{4} \times 3200 = 1600$ 00½ mark

9. THE THEORIES OF ORIGIN OF LIFE.

Introduction 1½ marks

i/ The special creation theory.
ii/ Spontenous generation.
iii/ Steady state theory.
iv) Cosmozoic theory.
v/ Organic evolution theory
vi/ Special creation theory.

Main body 12 @ 1 mark

Conclusion 01½ marks

10. STAGES INVOLVED NITROGEN CYCLE IN THE ENVIRONMENT.

i/ Lighting converts atmospheric nitrogen into nitrates.

ii/ Nitrogen-fixing bacteria in the soil and roots nodules of Legumes carry out nitrogen fixation by converting atmospheric nitrogen and nitrates.

iii/ Plants absorb nitrate and use it to produce plant proteins.

iv/ The nitrogen contained in plant tissues is consumed by animals when they feed on plants.

v/ Animals use the nitrogen obtained from plants to produce their proteins.

vi/ Plants and Animals die, decomposers such as bacteria and fungi feed on them. The decomposers releases Ammonia gas - NH_3 is converted into nitrites and then into nitrates.

vii) Dentrifying bacteria release nitrogen from nitrates back into atmosphere and cycle starts over again

Main body 10.5 @ 01½ marks
Introduction 01½ marks
Conclusion 01 mark

Illustration is necessary (02 marks)

11. Four external factors affecting growth and development in Animals.

- Food Nutrients.
- Water
- Space
- Breeding site.

Internal Factors affecting growth and development.

- Hormone (growth hormone).
- Disease.
- Hereditary factors.
- Genetic factors.

Introduction 0½ marks.

Main body 10½ @ 0½ marks.

Conclusion 01 mark.