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BIOLOGY

2019 TERM 2 EXAM

Form 1

2019 MID-TERM 2 EXAM

MARKING SCHEME

FORM ONE
BIOLOGY
2019 TERM 2 EXAMMARKING SCHEME

1. Bios-life

   Logos-knowledge

2. Botany-study of plants

   Zoology- study of animals
   Microbiology- study of microscopic organisms (micro-organisms)

3. **Nutrition**-process by which organisms acquire and utilize nutrients;
   Respiration-process by which food substances are broken down in cells to release energy;
   Gaseous exchange-process by which respiratory gases (oxygen and carbon (IV) oxide) are passed across the respiratory surface;
   Excretion-process by which waste or harmful materials resulting from metabolic reactions within cells of organisms are eliminated;
   Growth and development-Growth is the irreversible increase in size and mass while development is the irreversible change in complexity of structure of living organisms;
   Reproduction-is the process by which living things give rise to new individuals of the same kind;
   Irritability-is the ability of living things to perceive changes in their surroundings and respond to them appropriately;
   Movement-is the change in position by part of an organism while **locomotion** is where the whole organism moves or change in position

4.
   i. Name-sweep net;

   Function-used for catching flying insects' e.g. bees;
   ii. Name-pooter;

   Function-used for sucking small animals from rock surfaces or barks of trees e.g. ants and termites;
   iii. Name-pitfall trap;

   Function-used for catching small crawling animals e.g. millipedes, spiders and cockroach;
   Rej-function if the name is wrong.
   Rej-if name are function are interchanged.

5.
   - Collect only the number of specimen needed to avoid wastage;
   - Not to destroy the natural habitat of the specimens.
   - Dangerous / injurious specimens to be handled with care as stinging insects or plants can sting or injure a person; a pair of forceps or hand gloves should be used for protection;
   - Do not harm/injure the specimen during the collection exercise; to avoid distorting the features of the specimen.
   - live specimens should be returned to their habitats whenever possible ; to maintain ecological

balance

- Highly mobile animals to be immobilized using suitable chemical substance tetrachloromethane or chloroform, ethoxyethane; *(mark the first 4)*

6.

a. Hand lens;

b. X-convex lens ;
Y-Frame;
Z-Handle;

c. Used to enlarge objects (external features of collected specimens)

d. Magnification=$\frac{\text{lengh of the drawing}}{\text{lenght of the object}}$;
Length of the drawing= drawing magnification X length of the object
X4 x X8cm;
=32cm;

7.

a) It is the grouping of living organisms based on their structures;

b) -Grouping brings together living things with similar characteristics but separates those with different features;
-helps in placing living organisms in their correct group for reference;
-helps us to arrange information about living organisms in an orderly manner to avoid chaos and confusion that could arise if these were done arbitrarily;
-helps us to understand the evolutionary relationships between different organisms;

c)

KINGDOM	REPRESENTATIVE
a) Animalia	
b) Protoctista	
c) Fungi	
d) ……..	Bacteria
e) Plantae	

Rej: wrong spellings

8.

a. Magnification is the ratio of an object's image to its real size(enlargement of specimen compared to its real size); while resolution is the ability to distinguish two structures that are very close together as district entities;

b)

Eye-piece lens	Objective lens	Total magnification
	i X20;	
		ii X70
iii X50		

Rej- if X (magnification) is missing.

c)1mm=1000 micrometers (μm)
4mm=?
4mm x 1000 μm= 4000 μm;

1mm

Length of 1 cell $= \frac{\text{diameter of field of view in } \mu m}{\text{no.of cells counted along the diameter of field of view}}$

Cell length $= \frac{4000\ \mu m}{10}$

Length of 1 cell=400 µm

9.

(i) To allow light to pass through;
(ii) For clear visibility/ to make observations clear;
(iii) To make the cells turgid/ to avoid dehydration;

10. Unicellular organisms- are organisms with one cell
Multicellular organisms- are organisms with many cells;

11. Root hair cell
Guard cell
Palisade cell.

12.

a) A -Eye piece;
C -Fine adjustment knob;
J -Stage;
D -Mirror; (*reg: wrong spellings)*

b) B –(Coarse adjustment knob)- brings image into rough focus by raising and lowering the body tube;
E – (Diaphragm)-an aperture that regulates the amount of light passing through the condenser to illuminate the specimen;
F – (Objective lens)-contains a second set of lenses used in combination with eye-piece lenses to bring the desired magnification;
G – (Body tube) - holds the eye piece and the resolving nose piece (in position);
H – (Base)-provides firm and stable support;

13.

- Enables one to understand the development stages in human body;
- Enables one to pursue careers i.e. medicine(any other relevant);
- Imparts/enables one to acquire scientific skills i.e. drawing, observing, measuring, classifying, analyzing and evaluating data;
- Used to solve environmental problems e.g. food shortage, pollution, drought, poor health and conservation of resources like forests, wildlife and soil;
- Used to enhance/promote international co-operation in medicine, environmental conservation; *(mark the 1st three*)

14.

	CELL ORGANELLE	FUNCTION
a		-give cell a definite shape; provide mechanical support;provides protection against mechanical injury;
b	Golgi bodies(golgi apparatus);	
c		Control all activities of the cell;
d		Manufacture ribosomes;
e	Ribosomes ;	
f		Contain chlorophyll that traps light energy that is used during photosynrhesis;
g	Lysosomes ;	
h		Transport proteins;
i	Smooth endoplasmic reticulum;	
j	Mitochondria; acc motochondrion	

15. Kingdom ;
Phylum/division;
Class ;
Order;
Family;
Genus;
Species;

Rej- if order is not followed.

16.
a. Binomial nomenclature
b. Felis –genus;

Catus-species

c. -The first part of the scientific name i.e. genus and should begin with a capital letter and the specific name should be written in small letters;

-Scientific names should be printed in italics in books and printed works, but in hand written manuscripts should be underlined as separate words;

-Specific name a times is written with the name of a scientist who first adequately described and named the organism (who invented);

-Biologist must give a latinised name for a newly described animal or plant species;