
FORM FOUR TERM ONE EXAM 2017

BIOLOGY PAPER 1 MARKING SCHEME

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BIOLOGY 1

MARKING SCHEME

1a)	Biochemistry;	1mk
b(i)	First 1	
	- Names not underlined separately/written in italics; - Generic name written in capital letters; mark the 1st one	1mk
(ii)	<u>Muscadomestica</u> ;	1mk
2a)	Cell membrane contains a lipoprotein while cell wall contains cellulose;	1mk
b)	Magnification = Image/Object	
	Actual diameter = (2x1000)µm/800;	
	= 2.5µm;	2mks
3.	Haemolysis is the bursting of an animal cell/RBC when it absorbs water by osmosis from a hypotonic solution. Plasmolysis is the shrinking of a plant cell as a result of losing water by osmosis to a hypertonic solution.	2mks
4a)	1/2 mk each=2mks	
	A-Diastema	
	B-Hard pad	
	C-Lower jaw/mandible	
	D-Molar	
b)	Turning of food by tongue/prevent mixing of chewed and unchewed food;	1 mk
5a)	Lack antigens that would agglutinate with corresponding antibodies of recipient;	1mk
b)	First 2	
	- doesn't change pH of plasma/blood/body fluids; - presence of haemoglobin in RBC;	2mks
6a)	W-Trachea;	
	Y-Sternum;	2mks
b)	External intercostals muscles relax and internal intercostals muscles contract; Ribs /move downwards and inwards;	2mks
7a)	SUGAR/GLUCOSE $\longrightarrow$ CARBON(IV)OXIDE+ALCOHOL/ETHANOL + ENERGY/ATP;	1mk
b)	Any 1	
	Baking/manufacture of alcohol/manufacture of dairy products/biogas production;	1mk
8a)	All glucose reabsorbed at proximal convoluted tubule;	1mk
b)	Proteins not filtered into glomerular filtrate as molecules too large to pass through capillary pores;	1mk
9.	Stands upright when cold; trapping a layer of air that insulates body/skin against heat loss;	2mks
10.	Higher light intensity closer to the surface thus more plants; providing food for more fish;	2mks
11a)	M-Male nuclei;	
	N-Tube nucleus;	2mks
b)	Take part in fertilisation;	1mk
12(i)	Cambium;	1mk
(ii)	Apical meristems;	1mk
13a)	First 2	
	Deoxyribose sugar;	
	Phosphate molecule	
	Nitrogenous organic base;	2mks
b)	G-U-A-C-U-C-A ;	1mk
c)	spontaneous change in the genetic make up of an organism;	1mk
14(i)	structures which have become reduced in size as a result of losing their original function;	1mk
(ii)	Type of evolution in which structures from different embryonic origins are modified to perform similar functions;	1mk
(iii)	Organisms best adapted reproduce and pass their characteristics to their offspring while those poorly adapted die out;	1mk
15(i)	Light;	1mk
(ii)	Test for starch;	1mk
(iii)	Uncovered part turned blue-black/contained starch while covered part remained brown/did not contain starch;	1mk

16a)	Sweep net;			1mk
b)	Population	=	$\frac{\text{first capture}}{\text{number recaptured}} \times \text{second capture}$	
		=	$\frac{600}{100} \times 300;$	
		=	1800;	2mks
17.	Amphibia;			
	Pisces;			2mks
18a)	First 1			
	Genetic experiments/cancer therapy;			1mk
b)	First 1			
	Meat tenderiser;			1mk
19.	Ovaries produce progesterone; for maintenance of pregnancy during the first four months of pregnancy ;after which the function is taken over by the placenta;		3mks	
20a)	First 2			
	• Adult and larvae exploit different food niches reducing competition for food;			
	• Pupa can survive adverse conditions;			
	• Dispersal of different stages prevents overcrowding;			2mks
b)	Removal of terminal bud removes source of auxins; thus no inhibition of axillary buds which sprout/develop into branches;			2mks
21a)	A-Metaphase;			
	B-Anaphase;			
	C-Telophase;			3mks
b)	Fiirst -+			
2				
	• Cambium/vascular cambium/cork cambium/phellogen;			
	• Apical meristem/shoot tip/root tip;			2 mks
22a)	Any 1			
	Vitamin D/Calciferol;			1mk
b)	First 1			
	Nerve impulse transmission;			1mk
23.	A–Vena cava;			
	B–Aorta ;			3mks
	b) C- Bumps bloods over a long distance/rest of the body while chamber 8 bumps blood to a shorter distance/lungs;			(1mk)
24a)	Aerenchyma-Fresh water;			1mk
	Pneumatophores- Salty water/salty soils/swamps;		1mk	
b)	Storage of air for gaseous exchange/buoyancy;			1mk
25.	First 3			
	• Stomata;			
	• Lenticels;			
	• Cuticle;			
	• Pneumatophores;			
	• Epidermis;			3mks
26.	Transport role-Transport of proteins;			1mk
	Synthetic role-Ribosomes manufacture proteins;			1mk
27a)	Adenosine triphosphate;			1mk
b)	Require more oxygen during oxidation; insoluble in water thus not easily transported to site of respiration;		2mks	
28a)	X - Epicotyl;			
	Y-Radicle;			2mks
b)	Epigeal germination;			1mk
c)	Absorption of water and mineral salts/anchorage;		1mk	