EXAMS TERM 2 2019

FORM 3 BIOLOGY P3 MARKING SCHEME

1. (a) (i) Test tube X

Liquid becomes cloudy/turbid suspension formed√/oil broken up into small droplets which are dispersed throughout the liquid. √ (The oil becomes emulsified)

Test tube Y

Oil floats on the water/two separate/immiscible layers are formed√

(ii) Emulsification √

(iii) Increased surface area for action of enzyme lipase √ (answer tied to a (ii))

(iv) Bile√

(v) Duodenum√ (tied to (a) (ii) and (iv))

(b) (i) Blue black √

(ii) Starch √

(iii) Contents of F remain unchanged. Blue black colour in E disappears/fades/changes to pale/light yellow/light brown/orange. (Answer tied to b (ii))

(iv) Enzyme/Amylase in potato√ breaks down starch/converts/hydrolyses/changes/digests √starch into maltose/reducing sugars√/simple sugars that do not give a blue black colour with iodine. √(1mk)

Procedure

(c) (i) Add equal amount of Benedict's solution to paste and boil in a hot water bath

Food being tested	Procedure	Observation	Conclusion
Reducing sugar√	To the food substance add equal amounts of Benedict's solution and heat/boil (in a hot water bath) √	Colour changes from blue to green to yellow to orange and finally brown √or colour changes to brown	Reducing sugars present √

$^{4}/_{2}$ max 2mks

(ii) Starch √in potato is converted to maltose/glucose/reducing sugar √by enzyme amylase/maltose/diastase√. Rej ptylin

Q2. The photographs labelled J, K and L are all related to mammalian kidney.

(a) Name the hormone produced by the structure labelled P.: ***Adrenaline ;aldosterone***
(1 mk)

(b) Name the parts labelled ***Q - Cortex R –pelvis T- Collecting tubule***
(3mks)

(c) State the process by which wastes are filtered from blood in the structure labelled S. – ***Ultrafiltration*** (1 mks)

(d) (i) Give <u>two</u> components of blood that that are not filtered at structure S. – ***Blood cells / Plasma protein*** (2 mks)

(ii) Give reason why the components you have named in d (i) above are not filtered.
(2mks)

They have very large molecules; structures that can filter through the pores in the glomerulus.

(e) Give two nutrients reabsorbed at the part labelled S – ***Glucose / Amino acids***
(2 mks)

(f) What <u>three</u> adaptations would be expected in the structure L in a desert animal like a camel.
(3 mks)

- ***Small glomerulus to reduce filtration of water.***
- ***Long loop of Henle to maximize reabsorption of minerals (sodium salt)***
- ***Very long distal convoluted lobule to increase surface area for water reabsorption.***
- ***Highly coiled distal convoluted lobule to allow more time for water re-absorption.***

3. a) Reproduction ;

b) **R** **Q**

Superior / hypogynous Ovary ;	Inferior / Ovary;Epigynous ovary
Monocarpous ;	Polycarpous / apocarpous / free capels

;

c)

C – Anther ;

D- Sepal / Calyx ;

d) The petals degenerate / weather and are shed ;

The ovary develop into a fruit ;

The ovules develop into seeds

The ovary wall develop into a pericarp;

e) Class – dicotyledonae ;

Reason – The floral structure (anthers) are in five in Q and 12 (multiple of 4) in R ;