KCSE REVISION QUESTIONS

231/2

BIOLOGY PAPER 2

FORM 4

1. Below are diagrams of water conducting tissue found in plants

a) Name the plant tissue labeled (2mks)

L…….

Q…….

b) Name the material that thickens the part labeled L (1mk)

c) State three adaptations of the tissue labeled M (3mks)

d) Tissue Q is less efficient in conducting than M; explain (1mk)

2. In cats, sex is determined by X and Y chromosomes in the same way as human. A gene for coat color in cats is located in the X chromosome but not in Y.This gene has two alleles; Orange (B) and black (b).female cats that are heterozygous have a tortoise-shell coats

a) Give the Genotype of

i) A male cat with black coats (1mk)

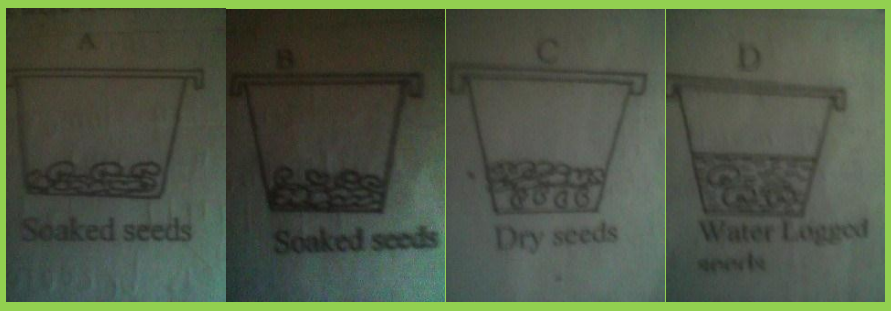
ii) A female cat with the tortoise-shell coats (1mk)

iii) A male cat with orange coat (1mk)

b) Work out the genotype of the kitten of a cross between black coated male and a tortoise shell coated female. Show your working through a punnet square (4mks)

c) State one sex-linked traits in human which are found in Y chromosome (1mk)

3. In an experiment a group of students set-up four petri-dishes labeled A, B, C, and D.The dishes were treated as shown below



a) What was the main aim of the experiment (1mk)

b)What observations were made after a few days in the petridish labeled (2mks)

A……

D……..

c)Account for the observation made in (b) above (2mks)

d)State three roles of enzymes in seed germination (3mks)

4.Study the organism below and answer following questions

a)(i) Name the kingdom to which the organism belong (1mk)

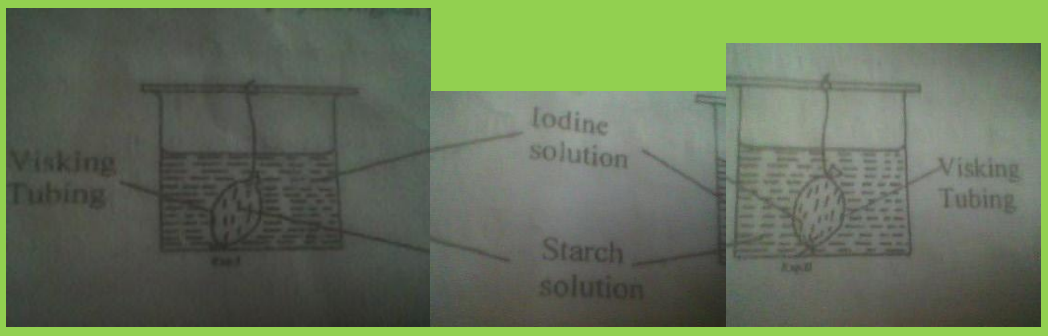
ii)Give a reason for your answer in (a) (i) above (1mk)

b)Name the structure labeled N, P and Q (3mks)

c)State two observable feature that enable the organism to move fast (1mk)

d)State two economic importance of the kingdom in 4(a)(i) (2mks)

5.To demonstrate a certain physiological process, the following set of apparatus were assembled



After 20 minutes observation were made and recorded as follows

Experiment	Observation	
	Inside Tubing	Outside tubing
I	Blue black colour	No colour change
II	No colour change	Blue-black colour

a) Name the physiological process being investigated (1mk)

b) Account for the results as recorded in the above table in experiment (2mks)

i)…….

ii)…….

c) What would have been the result if the Experiment (I) was repeated using starch that had been boiled with dilute hydrochloric acid, explain your answer (3mks)

SECTION B

6. A scientist carried out a research on the growth of the Tilapia nilotica in four neighboring lakes in a certain geological region. This fish feeds on plant materials and worms. The investigation was extended to include the factors influencing the aquatic life in the four lakes. Two of the Lakes W and X were located in a located with limestone and their water was rich with calcium ion content.

The parameters measured in a three year period of investigation concluded: Mean body length of fish, type of water, quality of aquatic plants and biomass of aquatic invertebrates. The table for this data is as shown below.

	Mean body length of 2year old fish	Calcium ions concentration	Quantity of aquatic plant g/M³	Biomass of invertebrate in the lakes g/M³			
W	24.15	38%	787.5	Crabs	Snail	Aquatic insects	Worms
				8.25	225	7.5	135
X	21.45	40%	712.5	54.00	75	6.75	675
Y	13.80	0.02%	0.9	72.75	0	1.5	15
Z	12.23	0.03%	0.38	74.25	9	0.75	7.5

a) Outline the procedure the scientist used to determine the mean body length of the two year old tilapia Fish (6mks)

b) Give reasons for the difference in the mean body length of the tilapia fish in lake X and Z (4mks)

c) State one reason for the absence of snails in the lakes Y and Z (2mks)

d) Name abiotic factor that may influence the plants animals' life in lake W (4mks)

e) Explain how each of the factors named in (d) above influence plants and animal life in the lake (4mks)