FORM FOUR CLUSTER KCSE MODEL 4

BIOLOGY PAPE 3 ANSWERS

(a)

Food	Procedure	Observations	Conclusion
Starch √½	To 2 cm^3 of S add drops of iodine.√1	Colour changes to blue black.√1	Starch present. √½
Reducing sugars√½	To 2 cm of suspension S add Benedict's solution and heat. √1	Colour changes to green to yellow to orange red. √1	Reducing sugars present. √½
Protein√½	To 2 cm of suspension S add drops of sodium hydroxide followed by drops of copper II sulphate. √1	Colour turns purple√1	Proteins present. √½
Vitamin C (ascorbic acid) √½	To about 2 cm DCPIP in a test tube add extract dropwise till in excess. √1	DCPIP is not decolourised of colour of DCPIP remains√1	Vitamin C Absent √½

- **Each correct procedure and observation 1 mark**

Other parts each ½ mark

If procedure is wrong deny mark for observation and conclusion

Reject warm for reducing sugars

(b) Suspension S can be used to provide energy from respiration for growth and development due to presence of starch and glucose.√ which are carbohydrates.√ 2mks

- **It can be useful in making structural components of the body such as cell membranes, skeletal muscles etc. √1**

- **Synthesis of metabolic regulators such as enzymes, and hormones √1**

- **Repair of worn out tissues and provision of energy during starvation due to presence of proteins √**

(a)

Organelle	Name	Function
Q	Mitochondrion	Respiration/production of energy;
R	Golgi body/Golgi apparatus;	Formation of Lysosomes/packaging of glycoproteins/transport glycoproteins/secretion of substances;
S	Nucleous;	Synthesis;
T	Nuclear membrane;	Controls/regulates movement of substances between nuclueus and cytoplasm;

(b) (i) 49 mm ± 1;

(ii) Actual diameter = $\frac{\text{Image size}}{\text{Magnification}}$

$$\frac{49{,}000mm;}{5000}$$

$$= 9.8\mu m;$$

Inner membrane;

(a) E-Fused ulna and radius; (3mks)

F-Humerus; G-Veins;

(b) Figure 1-Endoskeleton; (1mk)

(c) Hinge joints; (1mk)

(i) 1, 3 (1mk)

1 and 2; (1mk)

(e) -Structure reduced in size and are non-functional; rudimentary.

-Coccyx, appendix;