

LAIKIPIA EAST TERM 2 2022 FORM 4 EVALUATION EXAM
Kenya Certificate of Secondary Education – K.C.S.E
Marking scheme for biology pp3 231/1

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(a)

	F (pH 5)	G (pH 7)	H (pH 9)
Volume of solution + portion of potato	2.2 ± 0.2;		
Volume of solution + portion of potato + foam	4.2 ± 0.5;		
Volume of foam	2.0 ± 0.5;		

- Award accuracy for volume of solution + portion of potato 3 × 1 = 3 marks
 - Values should be F < G < H and solution + potato + foam is > solution + potato; 3 marks
 - Award correct subtraction for volume of foam 3 × 1 = 3 marks
- (b) The enzyme catalase; in the potato tissue breaks down hydrogen peroxide to water; and oxygen; (3 marks)
- (c) More foam is produced at pH 9; which is optimum for catalase activity; (2 marks)

2. (a) (i) Arthropoda. ✓ Rej spelling error
(ii) - Segmented body parts ✓
- Jointed appendages/limbs ✓
- Exoskeleton (made of chitin) ✓
Max 2
- (b) (i) X1 – head ✓
X2 – thorax ✓
X3 – abdomen ✓
(ii) Insecta ✓ rej spelling errors
(iii) A (spiracles) – gaseous exchange ✓/breathing
B (Antennae) – sensitivity ✓
- (c) J – Spreading of diseases ✓ e.g. cholera, typhoid
Accept pollination of flowers
K – Pollination ✓

This paper consists of 2 printed pages

Turn Over

- (d) (i) – Walking/flying ✓/running
(ii) Presence of appendages ✓ /wings

3. (a) Thorax/Thoracic region/Thoracic cavity; Rej chest

Gaseous exchange system;	Rej Respiratory system.	
(c)(i) J: Trachea; acc. wind pipe K: Diaphragm; (ii) Pumping blood to various parts of the body;		
(d)- Highly vascularised in alveoli for gases to diffuse and get transported		

- Spongy to accommodate more air; Acc. elastic
- Numerous alveoli to increase surface area for maximum gaseous exchange;
- Well ventilated/connected to bronchus/bronchioles to allow free movement of gases in and out during breathing;
- Has alveoli with moist lining where gases dissolve to facilitate gaseous exchange

due to their rapid diffusion;	(1 st two)
(e) (i) Identity: Alveolus; Rej alveoli, air sac	

Function: The surface in the lungs where gaseous exchange occurs;

(ii) Highly vascularised for gases to diffuse into to enhance their transportation;

Well ventilated to enhance movement of gases in and out; (1st one)