T A 42

WAKISSHA JOINT MOCK EXAMINATIONS
SCORING GUIDE
Uganda Certificate of Education
BIOLOGY 553/2
July/August 2024

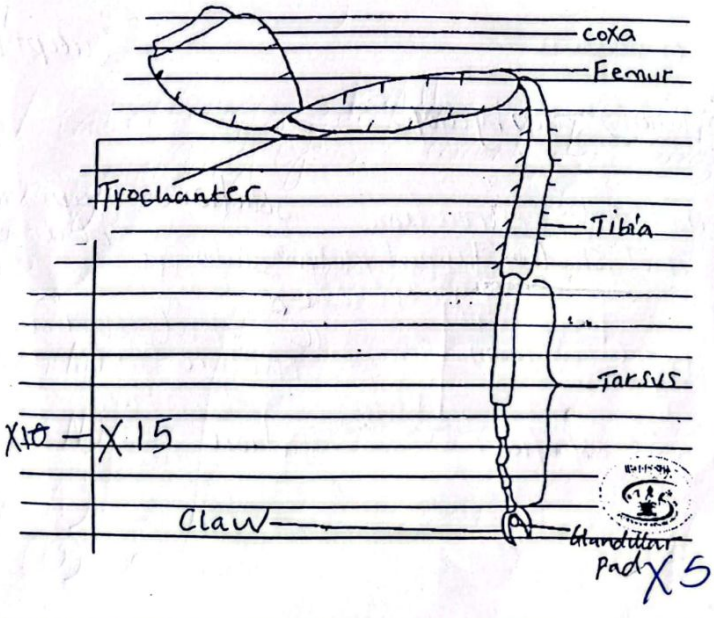
ITEM 1		
Code	**Possible learner's responses**	**score**
a	Aim: An investigation to determine food nutrients present in P & Q To investigate the nutrients composition of food samples P and Q.	01
b	Variables (***not applicable***)	*N/A*
c	Hypothesis: ① Food samples P & Q don't contain all nutrients required for proper growth ② Some yital nutrients are lacking in Joan's child diet (food samples P and Q). ③ Diet only contains carbohydrates	01
d	List of apparatus, materials, reagents used. * Accept materials for; - testing lipids & Non-Reducing sugars - solution P and Q - Iodine solution. - Benedict's solution. - DCPIP solution. - Dilute sodium hydroxide solution. - Copper (II) sulphate to solution. - Test tubes - Droppers - Heat source.	03
e (e_1, e_2, e_3)	**Procedures:** (food solution) • To 1cm³ of each food sample P and Q in test tubes, 3 drops of Iodine solution were added. (food solution) • To 1cm³ of each food sample P and Q in test tubes, 1cm³ of Benedict's solution were added and boiled. (equal volume of Benedicts) • To 1cm³ of each food sample P and Q in test tubes, 1cm³ of NaOH solution followed by 3 drops of CuSO4 solution were added. (food solution) (equal volume of NaOH) (accept 1/2 drops of CuSO4 solution) • 1cm³ of DCPIP solution was each added to two test tubes followed by food sample P or Q drop wise until in excess. (food solution) (drop by drop) Reject 1cm³ of CuSO4 solution	6 (2, 2, 2)
f	**Observations/results:** (turbid solution) solution accept black solution/ blue solution • Solutions P and Q turned to blue-black with iodine. (turbid solution) (turbid solution turned solution) solution pot • Solutions P and ~~Q turned~~ to blue, green, yellow then to orange precipitates on boiling with Benedict's solution. (turbid solution) ② turbid solution turns to blue solution and persists / remains • ~~Solutions P and Q turned to blue, green, yellow then to orange precipitates on boiling with Benedict's solution.~~ (turbid solution) • Solutions P and Q turned to blue solution when NaOH and copper sulphate was added. • The deep blue colour of DCPIP solution turned to a pale blue solution/ persisted when solutions P and Q were added dropwise until in excess.	3
g	**Interpretation/analysis:**	3

Accept: blue colour of DCPIP solution remains / persists

	~~Both~~ food solutions contain starch and reducing sugars (carbohydrates) Both food solutions lack proteins and vitamin C.	
h	**Conclusion:** The child is lacking proteins and Vitamins C which are essential for his normal growth. Joan should incorporate foods like Meat, milk, eggs, beans, etc which are sources of proteins and fruits which are sources of vitamin C into her child's diet.	2

ITEM 2

(a)	Specimen K destroys farmer's crops. It has hard sharp mandibles used for cutting the crops. Has three pairs of jointed legs for walking/ locomotion and find the crops. Has a pair of antennae for sensing the crops.	04 (any two correct each @2)
	1 (a) With wings ..... Go to 2 (b) Without wings..... K 2 (a) With a hairy body..... Go to 3 (b) Body not hairy..... J 3 (a) With both mandibles and proboscis..... M (b) With a proboscis only..... L	03

(c)	**Drawing of a leg of specimen L**  	06

END

BASIS OF ASSESSMENT AND SCORE GRID FOR ITEM No. 1

Skill/basis	criteria	score
Aim of the experiment (A)	– Correct aim – No/wrong aim	1 0
Variables in the experiment (B)	– States controlled variables – States dependent variables	1 1
Hypothesis (C)	– States correct hypothesis – No/states wrong hypothesis	1 0
List of materials, reagents, apparatus and solutions used. (D)	– Only relevant apparatus, reagent, materials and solutions. – One irrelevant included among relevant – More than one irrelevant – Only irrelevant	3 2 1 0
Procedure used in conducting the Experiment (E_1, E_2, E_3)	– Procedure completely relevant – Procedure partially relevant – Procedure completely irrelevant	2 1 0
	– Completely coherent procedure – Partially coherent procedure – Incoherent procedure/no response	2 1 0
	– Manages all the controlled variables – Does not manage all the controlled variables	2 1
Presentation of data/observations/results (F1, F2)	– Data appropriately presented – Data partially presented appropriately – Data inappropriately presented – No data presented	3 2 1 0
	– Accurate/ correct pattern of data presented. – Incorrect/without pattern – No data presented	2 1 0
Analysis and interpretation/explanation (G)	– Processes data and makes compete meaning. – Processes data and makes partial meaning – Processes data and does not make meaning – Neither process data nor makes meaning	3 2 1 0
Conclusion/recommendation (H)	– Makes recommendation/ conclusions based on interpreted data. – Makes partial conclusions /recommendations.	2 1

15

BASIS OF ASSESSMENT AND SCORE GRID FOR ITEM No. 2

SKILL	BASIS	SCORE
a) Suitability for function Understanding U. Relevant feature } U_2 = 06 Explanation of feature each adaptation = 02	• Identifies relevant structures and describes its suitability for function. • Identifies only but does not describe suitability for function. • Identifies wrong structure/none	I_2 = 02 I_1 = 01 I_1 = 00 U_2 = 06
b) Identification using observable features/dichotomous key	• Uses more than 4 and more features for identification of the specimens, at least 2 features for each. • Uses 2-3 relevant feature for identification • Uses 1 relevant feature • Uses irrelevant/no feature	~~03~~ I_1 = 02 02 01 00
c) Drawing skill	Identifies the correct drawing to make	I_2 01 I_2 = 01 D = 03
	-Drawing reflects more than half of biological skill. -Drawing reflects half of the biological skills -Drawing reflects less than half of biological skills. -Drawing does not reflect any biological skills/no drawing provided.	03 02 = 04 01 00
	- Labels more than half of parts - Labels less than half of parts	02 01

16 score

b) Identification, I_1 = 02 scores (Learner indicates 2 correct features)
I_1 = 1 score (1–2 features)
I_1 = 0 scores (Wrong/no features)

c) Drawing & Labelling skill
• Identification of right part of specimen I_2 = 01 score
• Drawing ; D – 03

Title (T)	4–5 = 03 scores
Magnification (M)	3–2 = 02 scores
Neatness (N)	1 = 01 score
Accuracy (A)	0 = 0 scores
Outline (O)	

With expected parts drawn
• 9 segments drawn
b drawing depicting the shape of the leg

Scoring Labeling, L
• ≥ 6 = 04 scores
• 4–5 = 03 scores
• 2–3 = 02 scores
• 1 = 01 score
• 0 = 0 score

Correct spelling considered; label line touches part

16 scores