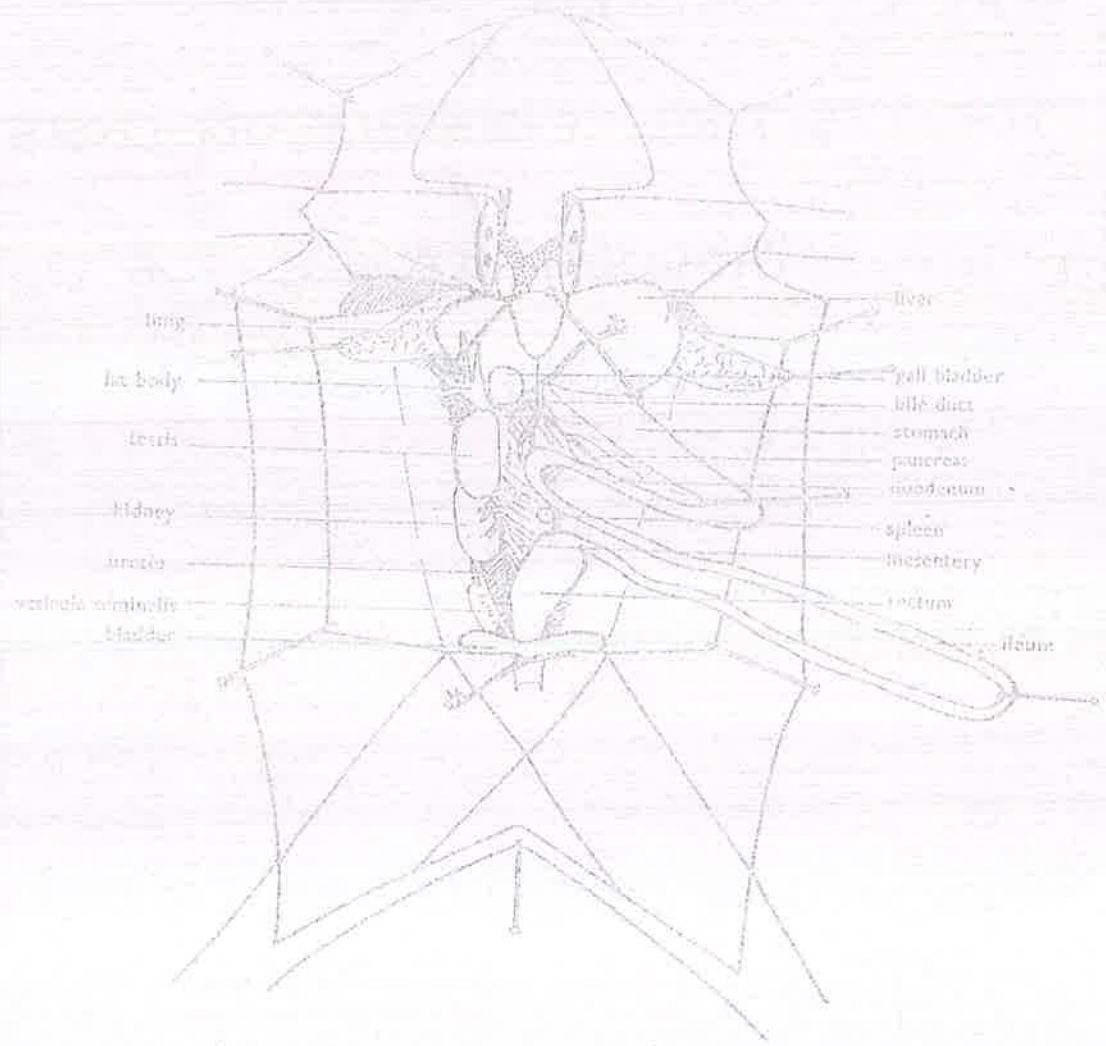
REGIONAL - ADMINISTRATION AND LOCAL GOVERNMENT
DAR-ES-SALAAM REGION

FORM VI MOCK - EXAMINATION - 2025

BIOLOGY 3A

MARKING SCHEME



A diagram of dissected specimen J showing the viscera general.

Onspot Assessment = 05

Diagram = 02

Caption = 00½

Magnification = 00½

Any 10 Labels @ ½ = 05

Total = 13 mark

(b) (i) The structure in specimen J which form the small intestine are:
duodenum and Ileum.
@ $00\frac{1}{2} = 01$

(ii) Adaptation features of duodenum
- It consists of numerous folds which increase the surface area.
- It is connected to bile duct and pancreatic duct which receives bile juice and pancreatic juice.
- It has mucous gland which secrete mucus into the lumen for lubricating food and acidic chyme.
- It has blood capillaries for transportation of absorbed food substances.

Any 3 points @1 = 03mark

Adaptation features of Ileum
- It is very long and flexible which provide large surface area for effective digestion and absorption by the intestine cells.
- Have villi which provide increased surface area for digestion and absorption of digested food particles.

- The villi are further divided into micro villi to further increase surface area for absorption.
- Have mitochondria for active transport of food substance.
- Each villi is supplied with blood capillaries and lymphatic vessels lacteal) for digestion.
- The inner surface is made up of a single layer of cell for absorption of nutrients from the gut.

Any 3 points @ 01 = 03 marks

Total 20 marks

2. Table of Results.

Test tube	Observations
1	A hot/strong effervescence and glowing splint was relighted 00½
2.	A lot of effervescence and glowing splint was relighted. 00½
3.	Strong effervescence and glowing splint was relighted 00½
4.	No effervescence and glowing splint was not relgted 00½

a) The aim of the experiment was to investigate the effect of temperature in organic catalyst (catalase) and inorganic catalyst Manganase IV oxide ------ 01 marks

b) Catalase enzyme was the chemical substance reacted with hydrogen peroxide when ukoiled liver was used ------ 02 marks

c) The balanced equation of the reaction is:

$$2H_2O_2 \xrightarrow{\text{Catalase}} 2H_2O + O_2$$

------ 02 marks

d) The nature of the gas evolved was Oxygen gas ------ 02 marks.

e) The purpose of grinding the liver in test tube 3 was to increase the surface area for the reaction to occur ------ 02 marks.

f) The purpose of boiling the liver in test tube 4 was to denature the catalytic nature of an enzyme catalase ------ 02 marks

g) Removal of toxic/harmful substances from the body which would damage living cells or tissues ------ 02 marks

Total 15 marks

3a) Common names:

P_1	Cockroach
P_2	Fern plant
P_3	Spider
P_4	Tilapia fish
P_5	Hibiscus flower

---@ $00\frac{1}{2}$ = $02\frac{1}{2}$ marks

b)

Specimen	Kingdom	Phylum	Class.
P_1	Animalia	Arthropoda	Insecta
P_4	Animalia	Chordata	Osteichthyes
P_5	Plantae	Angiosperma-Phyta	Dicotyledoneae

---@ $00\frac{1}{2}$ = $04\frac{1}{2}$ marks

c) Observable features:

i) Large bright coloured petals

ii) Floral parts typically in multiples of four or five.

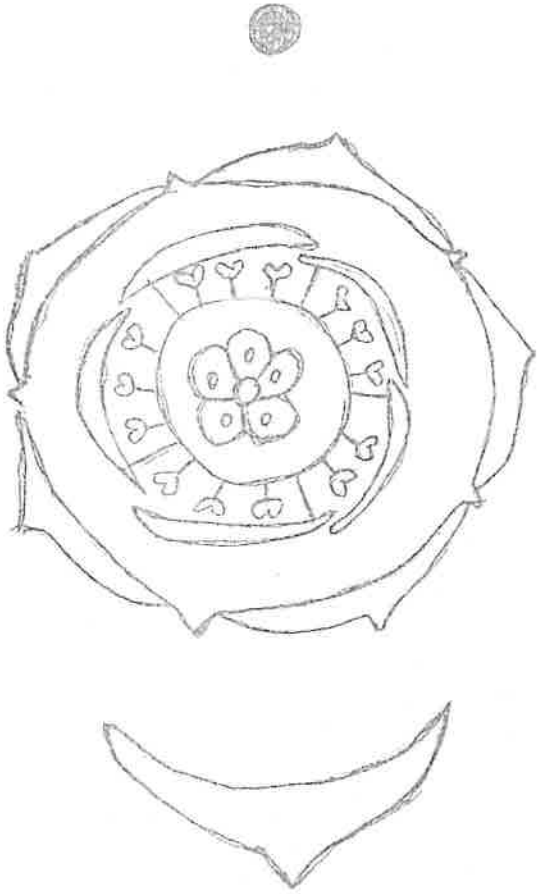
Any 2 points @ 01 = 02 marks

d) Floral formular of Specimen P_5

$Br, Brl, \oplus, \varphi, K_{(5)}, C_5 \overset{\frown}{A}_{(\infty)}, \underline{G}_{(5)}$

------ 01 mark.

Floral diagram of P_5



A floral diagram of Specimen P_5

---- 02marks

e) Mode of pollination.

- Insect pollination ---- 01mark

Reasons

(i) They have large and brightly coloured petals for insect attraction.

(ii) They are often sweet scented (attractive and good smell)

(iii) They have nectaries that secrete a sugary fluid called nectar which is the food for insects and raw material for honey making.

(iv) The pollen grains are either sticky or have pricky hairs which enable them to cling to the insect's body.

(v) Both the stigma and anthers are located inside the flower which ensure that the insects brush against them as they search for nectar.

Any 4 points @ $00\frac{1}{2}$ = 02 marks

Total 15 marks