

CHRISTIAN SOCIAL SERVICES COMMISSION (CSSC)
NORTHERN ZONE JOINT EXAMINATIONS SYNDICATE (NZ-JES)



FORM SIX PRE-NATIONAL EXAMINATIONS 2023

133/3B

BIOLOGY 3B FORM SIX
(ACTUAL PRACTICAL)

BIOLOGY 3B MARKING SCHEME.

1. Dissection

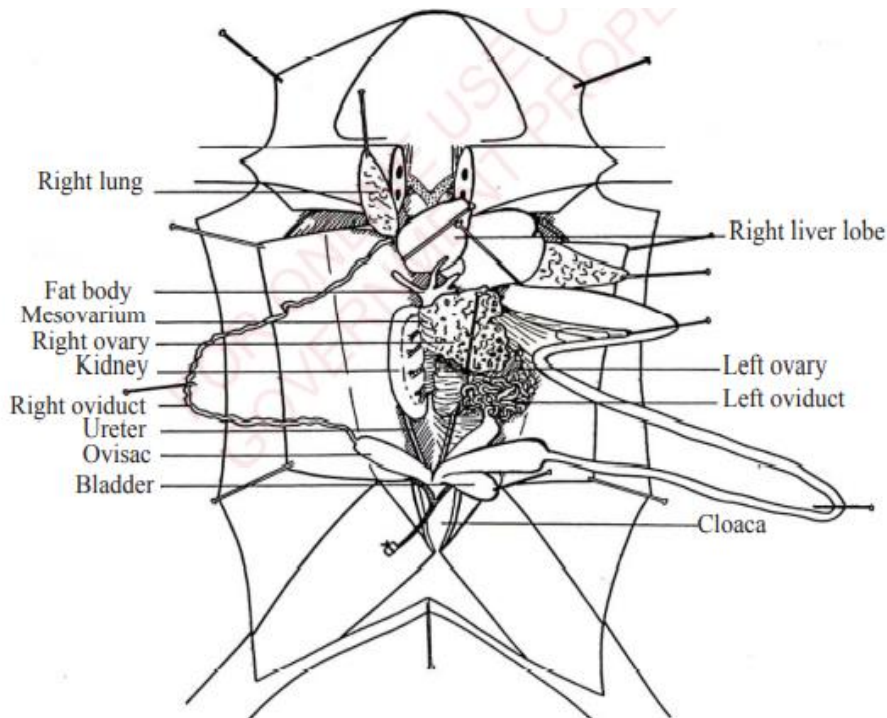


Diagram of dissected specimen J (Female) showing urinogenital system

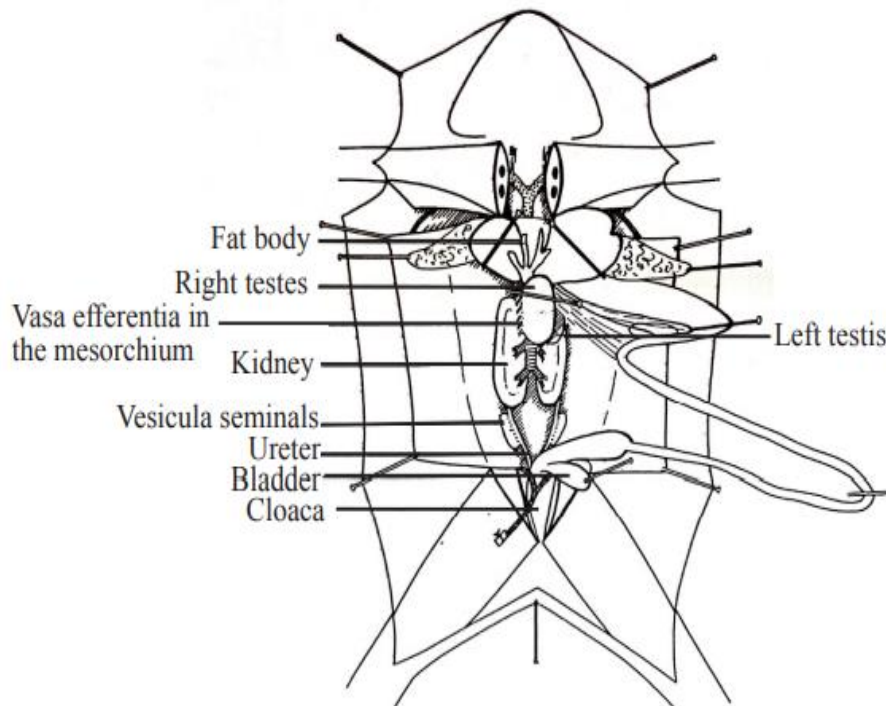


Diagram of dissected specimen J (male) to display urinogenital system

Caption = 01 mark

Diagram = 03 marks

Labelling = 4 marks, any 8 labels @ 0.5

Magnification = 01 mark

(b) (i) Male frog has slender abdomen, with nuptial pads on the first finger.

Female frog has broad abdomen, no nuptial pads on the first finger. 02 marks

(ii) Vas deferens 01 marks

(iii) Testis/ovaries 01 marks

c. advantages of double life.

i. Have a reproductive advantage because needs water for fertilization.

ii. Can exploit a wide range of habitats.

2. Growth

a) i. A – Endospermic seed (01 Mark)

the endosperm tissues remain as a storage tissue during seed development

(01 Mark)

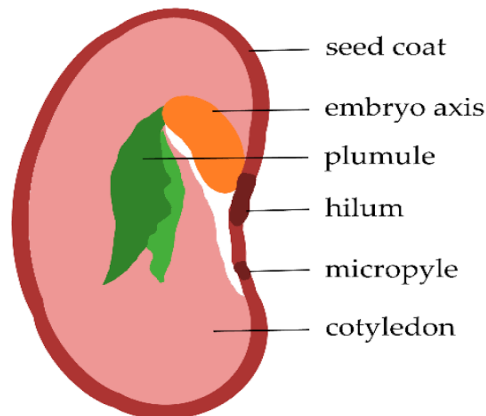
B – Non endospermic seed (01 Mark)

The endosperm tissues converted to cotyledons (01 Mark)

ii. A- Monocotyledon seed, consist of only one cotyledon (01 Mark)

B – Dicotyledon seed, consist of two cotyledons or seed leaves (01 Mark)

b)



(04 marks) Dig 01 mark, labelling = 02 @ 0.5 any four, caption 01 mark.

Longitudinal section of bean seed

ii.

- Testa/seed coat – protect the embryo
- Cotyledon – store food for growth of the embryo
- Radicle – form the first root (young shoot)
- Micropyle – point where gases, water and pollen enter the seed

(02 marks @ 0.5)

(c)

- Storage conditions example temperature
- Storage time
- Condition of seed or health status of the seed example diseases
- Maturity of the embryo

(03 marks @ 01 any 3 points)

3. a)i) Pinus/Conifer leaf (01 Mark)

ii) - Kingdom Plantae (01 Mark)

- Division- Coniferophyta (01 Mark)

iii) Distinctive features

- Produces naked seeds
- Leaves reduced to needle like to reduce excessive water loss through transpiration.
- Undergo sexual reproduction (02 Marks @ 01 any two points.)

iv) ADAPTION OF SPECIMEN H

- Have vascular bundles for transportation of water with minerals to different parts of the plant
- Have needle like leaves to reduce excessive loss of water through transpiration.
- Do not use much energy for decoration of flowers to attract external agents of pollination.

(01 Marks any one point.)

b)i) Specimen I- class Reptilia (01 Mark)

Specimen J- class Amphibia (01 Mark)

Specimen K- class Insecta (01 Mark)

ii) Specimen I has scale on the body and cold blooded. (01 Mark)

Specimen J has moist and soft body and lives on both land and aquatic environment.

(01 mark)

Specimen K has jointed appendages and body divided on three parts. (01 Mark)

iii) ADAPTATION OF SPECIMEN J

- Use both gills and lungs for breathing hence can live both on land and aquatic.
- Have an ability to hibernate
- Have an ability to search for food even at night time
- Eggs are protected by jelly- like sacs so they can attach to objects in water and do not float away
- Webbed feet to swim efficiently.

(03 Marks @ 01 any three points.)