

**BIOLOGY PAPER 231/2 K.C.S.E 1995  
PRACTICAL MARKING SCHEME**

**1. Confidential requirement: Specimen K – 5 *Rastrineobolla argenti*  
(Omena in Luo)**

You are provided with a specimen labelled K. With the help of a hand lens examine the specimen.

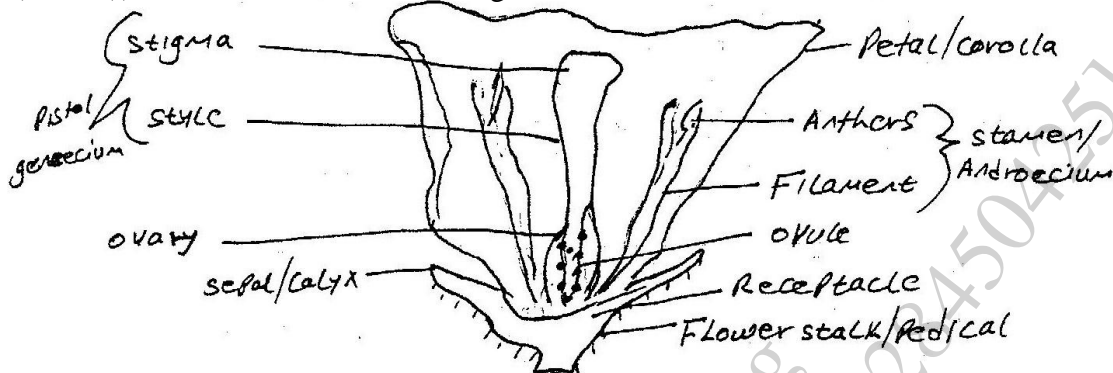
- a)
  - (i) State the phylum to which the specimen belongs chordata;
  - (ii) Using the observable features only, name the class to which the specimen belongs.  
Pisces.
  - (iii) Give your answer in (a) (ii) above  
Lateral line / operculum / gill cover / gills, fins  
Acc. fish, osteichythes / bonny fish etc
- b) Using the observable features, only state how the animal is adapted to living in its habitat.
  - Streamlined body for easy movement / minimize friction (owwte)
  - Presence of fins for swimming / balance
  - presence of gills for breathing in water/gaseous Exchange / operculum / gills cover to allow water of pass out.
  - Presence of lateral line helps vibration / movements in water Waves / disturbance in water.
- c) Cut three of specimen K into tiny pieces. Place the pieces into a boiling tube. Add 5m if water. Boil for five minutes. Decant the extract into a clean test tube.  
Using the reagents provided, identity the food substances in the extract. Record the food substances being tested for observations and conclusions in the table below.

Food substance	procedure	observations	Conclusion
Protein	To the extract add dilute NaOH solution and 1% copper sulphate;	Violet/purple colour appears	Protein present
Reducing sugar	To the extract add Benedict's solution boil / warm	No colour change	Reducing sugar absent.

2. **Confidential requirement: Specimen M- Freshly picked and intact mature Flower obtained Solanum incanum or Lycopersicon.**

You are provided with a specimen labeled M. Make a longitudinal section through the flower.

- a) (i) Draw and label the longitudinal section of the flower.



- (ii) State the magnification of your drawing  
X1 – X10 (with or without the x)

- b) (i) Name the agent of pollination of the flower  
Insects – (Reg – animal alone)
- (ii) State two ways, which the flower is adapted for pollination by the agent named in b(i) above.  
Brightly coloured to attract insects.  
Stigma is below another to avoid self – pollination  
Smell/ scent to attract insects.

3. **Confidential requirement: Specimen N Freshly killed soldier termite. Specimen p – Freshly killed weevil, Specimen Q – Freshly killed maggot of a housefly.**

Animal	Type of Environment	Reason
N	Moist	Soft skeleton/cuticle/body/outer covering Thin
P	Dry	Hard wings / hard Exoskeleton
Q	Moist	Soft Exoskeleton/body/covering cuticle.

- b) With a reason in each case, state the type of locomotion each animal exhibits.

Animal	Type of locomotion	Reason
N	Walking	Presence of legs
P	Walking	Presence of legs
	Flying	Presence of wings
Q	Crawling / Wriggling	Presence of prolegs / no Legs / pseudo legs (false)

- C) (i) Adult / imago;  
(ii) Larva Rej; maggot