

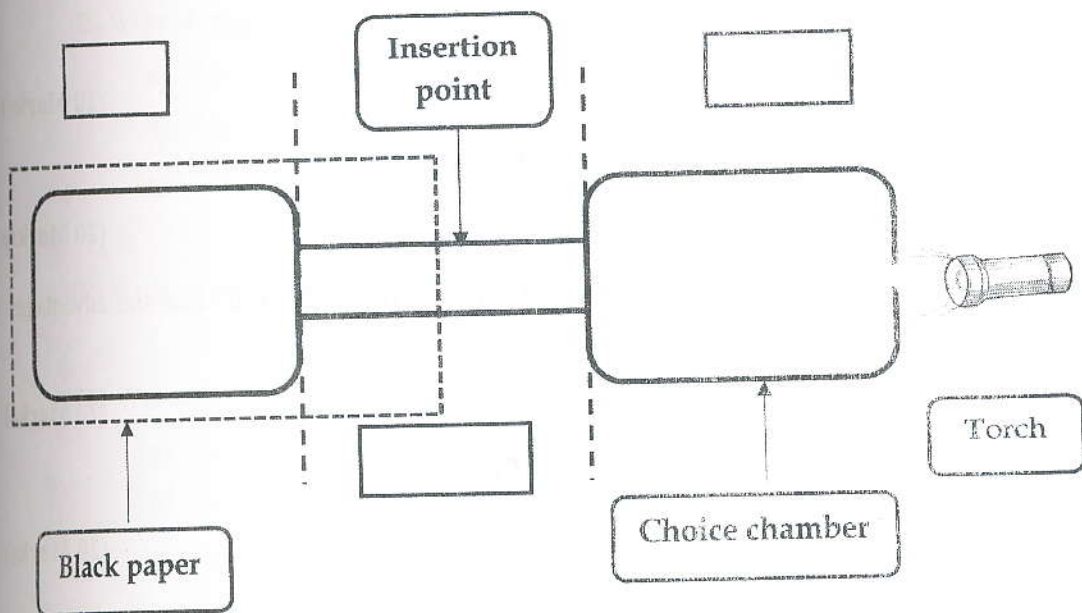


EASTERN UNIVERSITY SRI LANKA
 SECOND YEAR IN SCIENCE (2014/2015) Nov 2016
 ANIMAL BEHAVIOUR AND EVOLUTION
 ZL-252



Time: 2 Hours and 30 minutes

1. In an investigation of *Tribolium* larvae, a covered choice chamber is used to test whether the spatial distribution of larvae is affected by the presence light. To test the flies' preference for light whether its moves towards the light or away from the light or it is not prefer to light or dark, 60 larvae are introduced into the middle of the choice chamber at the insertion point indicated by the arrow in the figure below. A strong light illumination placed is placed at one end of the chamber, and other end covered by black paper to make complete dark condition at the other end. The positions of flies are observed and recorded every minute for 10 minutes.



- Predict the distribution of flies in the chamber after 10 minutes and justify your prediction?
- Propose ONE specific improvement to each of the following parts of the experimental design and explain how the modification will affect the experiment.
 - Experimental control
 - Environmental factors
- The experiment described above is repeated and the positions of the flies are observed and recorded every minute for 10 minutes. The positions of flies after 1 minute and after 10 minutes are shown in the table below.

DISTRIBUTION OF LARVAE CHOICE CHAMBER

Time (Minutes)	Position in Chamber		
	Light	Neutral	Dark
1	21	18	21
10	45	3	12

Perform a suitable statistical test on the data for the 1 minute and 10-minute of the banana experiment and concluding your findings with justification?

- (d). Explain whether your hypothesis is supported by the chi-square test and Explanation
 - (e). Briefly propose a model that describes how environmental cues affect the behaviour of flies in the choice chamber
2. Identify and comment the questions along the photographs A to J
 3. Write down the answer for the **CASE STUDY** provided
 4. Draw a fully labeled diagram of **HUMAN HIND LIMB** and state the advantages of bipedal locomotion.
 5. Submission of **Animal Behaviour Mini Project**

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