

BOWEN UNIVERSITY, IWO  
DEPARTMENT OF BIOLOGICAL SCIENCES

2010/2011 SECOND SEMESTER EXAMINATION

BLY 402: MOLECULAR BIOLOGY & BIOTECHNOLOGY  
PRACTICAL EXAMINATION

Attempt all questions

Time: 1hr.

- What tissue would you preferentially use to extract DNA from plants, insects, mammals, reptiles and birds?
  - List the solutions you would need to homogenize tissues, lyse cells; deproteinize lysate and precipitate DNA.
- DNA was extracted from the larvae of the fruit fly, *Megaselia scalaris*. The white fluffy and fibrous precipitate was dissolved in 15ml 1 x SSC, pH 7.2, and the optical density (OD) of a 10x dilution was taken at 280nm and 260nm.  
$$\text{OD}_{260} = 0.250$$
$$\text{OD}_{280} = 0.131$$
  - What is the  $\text{OD}_{260}$  of the undiluted sample?
  - Determine the total amount of DNA extracted.
  - Is the sample pure? Give reasons.
- If you heat native DNA to 100°C, what happens if you let the sample cool rapidly and if you let the sample cool slowly.