



## THE ROYAL COLLEGE OF PATHOLOGISTS

### Part I Examination

Tuesday 15 March 2005

### TOXICOLOGY

#### Second Paper (Systematic Toxicology)

Candidates must answer **FOUR** questions **ONLY**

*Time allowed - three hours*

1. A prospective new chemical entity is positive in an Ames assay in the presence of S9 mix. What potential hazard does this indicate, and how would you regulate this chemical as a) a food additive, b) a pesticide and c) a pharmaceutical?
2. Discuss the contribution of inhalation exposure to respiratory toxicity following occupational exposure to chemicals and particulates. Describe the measures used to protect workers and illustrate the answer with chemical examples.
3. Phytoestrogens are regarded as carrying a toxicological risk to the general human population. Describe what this risk is, how it might differ in the various human subgroups, and how human exposure might be controlled, and monitored.
4. Describe the main types of radiation, their toxicological consequences and the regulatory agencies responsible for the control of exposure in the healthcare environment in the UK and USA.
5. Both the FDA and CHMP have recently issued new regulatory guidelines for addressing potential immunotoxicity. Describe the background to the introduction of the guidelines, the tiered approach recommended and the different types of immunotoxicity that might result from chemical exposure.