



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 14 March 2006

TOXICOLOGY

Second Paper (Histopathology and Comparative Pathology)

Answer FOUR questions ONLY
Time allowed – THREE HOURS

- 1 Write short notes on FOUR of the topics (a-f) below (suggested length half-page per answer):
 - a) Relevance of rat forestomach tumours to human risk
 - b) Drug-induced porphyria
 - c) Chloroform-induced nephrotoxicity in the mouse
 - d) Telepathology
 - e) The TRAMP mouse
 - f) The pathology of cyclooxygenase inhibitors

- 2 Describe how the anatomy, histology and metabolic capacity of the different regions of the rat nasal passages and lung may determine target specific tissue toxicity. Illustrate your answer with examples.

- 3 Discuss the aetiology and pathogenesis of atheroma, the animal models available for its study, current drug strategies to affect its development and the safety concerns associated with therapeutic drugs.

Please turn over for Questions 4, 5 and 6

4 Select one of the available transgenic “alternative” mouse models for assessing carcinogenicity and critically assess the advantages and disadvantages in comparison with the conventional lifetime bioassay in the rat and mouse.

5 EITHER:

Describe the types of spontaneous disease seen in male and female Fischer 344 rat, factors that affect their incidence, and their potentially confounding role in the interpretation of an oncogenicity study.

OR:

Describe the role of the histopathologist in an oncogenicity study, from establishing the study design and protocol to production of the final report. Additionally describe how the quality of slide reporting is assured and how differences of opinion are reconciled.