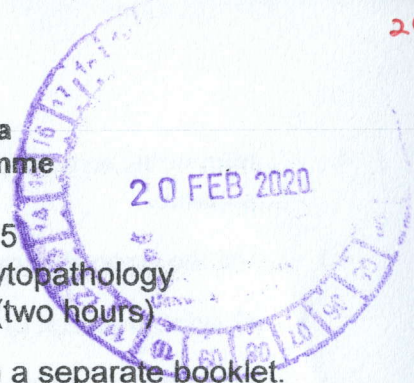




Faculty of Medicine, University of Ruhuna
Medical Laboratory Science Degree Programme

Year end examination Year 3 – April 2015
3rd Batch - Theory - Essay – Histopathology and Cytopathology
Wednesday 6th Many 2015 Time: 8.30 am. to 10.30 am. (two hours)



Instructions: Answer all the questions. Answer each question in a separate booklet.

- 1.1 a) List 5 causes of cell injury. (10 marks) (2)
b) List the types of cellular adaptations giving 2 examples for each. (20 marks)
- 1.2 a) List the cardinal features of acute inflammation. (10 marks)
b) Briefly describe the pathogenesis of one of the cardinal features mentioned for 1.2 a) (20 marks)
c) List 5 clinical examples for acute inflammation. (10 marks)
d) Briefly describe the outcomes of acute inflammation. (30 marks)
- 2.1 Tissue samples are generally sent to the histopathology laboratory in a fixative.
a) Briefly describe the functions of a fixative. (20 marks)
b) Classify the fixatives used in histopathology giving one example for each. (20 marks)
- 2.2 A fresh 50ml sample of pleural effusion fluid was received at the laboratory. A portion of the fluid was centrifuged and smears were prepared.
a) Describe the possible methods of fixation and staining of these smears. Briefly describe their advantages and disadvantages. (30 marks)
b) Describe how you would clean and discard the remaining specimen, glass centrifuge tubes and plastic pipettes used for the processing of the above sample. (30 marks)
- The Department of Pathology of a teaching hospital decided to set up an immunohistochemistry laboratory. Breast carcinoma prognostic markers will be done in the first phase of the project. As the Medical Laboratory Science graduate working in the laboratory, you have been requested to contribute to the planning.
- a) List the basic equipment needed for the proposed laboratory. Explain why you need them in the proposed laboratory. (40 marks)
b) List the basic consumables needed and indicate their uses. (30 marks)
c) Describe the value of a humidity chamber in immunohistochemical staining. (10 marks)
d) Briefly describe the health hazards associated with the routine work in an immunohistochemistry laboratory. (20 marks)

4. Minimizing errors and artifacts in histopathology laboratory is essential to prevent disastrous consequences on patients.

4.1 List the errors that can occur at the following stages of specimen analysis.

a) prior to receipt of specimens by the laboratory (20 marks)

b) during the specimen accessioning (20 marks)

c) during the cut-up (20 marks)

4.2 Describe how you would avoid the errors that you have mentioned for 4.1. (40 marks)

5.1 The following four haematoxylin and eosin stained slides were rejected by the histopathologist giving reasons for the rejection.

Slide A – Poor staining with haematoxylin

Slide B – Excessive staining with haematoxylin

Slide C – Poor staining with eosin

Slide D – A purple precipitate on the section

a) State 5 causes for each of the three inadequacies mentioned for Slide A, B and C. (30 marks)

b) Briefly describe the reason for the precipitate in the Slide D and explain how you would prevent it. (10 marks)

5.2 Briefly describe the uses of a clearant in routine haematoxylin and eosin staining. (20 marks)

5.3 Describe the effects on the final haematoxylin and eosin stained slide, due to the inadequate function of the clearant used for staining. (40 marks)