

UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES
THIRD YEAR SECOND SEMESTER EXAMINATION – FEBRUARY 2014
MLSCH 3203 CLINICAL HISTOTECHNOLOGY

PAPER II

DATE: 12.03.2014

TIME :2 1/2 Hours

ANSWER ALL EIGHT QUESTIONS

1.

1.1 Enumerate the factors that could affect tissue fixation and briefly discuss how these factors affect fixation. (30 marks)

1.2 What are the steps in tissue processing and briefly discuss how each is achieved. (40 marks)

1.3 Describe briefly the factors that influence the rate of tissue processing. (30 marks)

2.

2.1 Describe the proper orientation of following specimens when embedding.

You may use diagrams to explain your answer.

2.1.1. Punch biopsy of skin (07 marks)

2.1.2. Transverse and longitudinal section of appendix in the same cassette (07 marks)

2.1.3 Sections from gallbladder (07 marks)

2.1.4. Terminal ileum – colonic biopsy series (07 marks)

2.1.5. Multiple pieces of tissue (07 marks)

2.2 Describe the ways, how proper orientation can be ensured during surgical cut up. (20 marks)

2.3 The consultant Histopathologist complains to you regarding frequent encounters of carry-overs in histopathology slides.

2.3.1. What is meant by a carry - over? (15 marks)

2.3.2. At which points could these occur? (15 marks)

2.3.3. How would you prevent this carry-over? (15 marks)

- 3.
- 3.1 List the classes of microtome blades? (10 marks)
- 3.2 Name the factors that could contribute in obtaining an optimum microtome section. (10 marks)
- 3.3 Discuss the role of the following in microtomy
- 3.3.1. block of ice (10 marks)
- 3.3.2. 30% alcohol bath (10 marks)
- 3.3.3. section floating water bath (10 marks)
- 3.4 What are the causes for following faults in section cutting and how would you rectify them?
- 3.4.1. Sections are longitudinally scratched. (10 marks)
- 3.4.2. There are thick and thin zones in the section (chatters) (10 marks)
- 3.4.3. Washboardings or undulations appear in the section (10 marks)
- 3.4.4. It is difficult to get a continuous ribbon (10 marks)
- 3.4.5. Holes seen in each section (10 marks)
- 4.
- 4.1 List the advantages of immunohistochemistry over immunofluorescence? (15 marks)
- 4.2 Briefly discuss the methods available for antigen retrieval. (25 marks)
- 4.3 Describe the quality control measures that you would take to ensure the production of a Good immunostained section? (20 marks)
- 4.4 What are the reasons for a negative staining of an immunostain in a particular tissue where the control has worked well? (40 marks)
5. Write short notes on
- 5.1 Knife sharpening (30 marks)
- 5.2 Mounting media (35 marks)
- 5.3 Adhesives used in slide preparation (35 marks)

6.

6.1 Name 3 types of tissue processors. (15 marks)

6.2 What specific features are incorporated in them? (25 marks)

6.3 Compare and contrast between manual and automated tissue processing (30 marks)

6.4 Briefly describe the routine maintenance of tissue processors (30marks)

7. Write short notes on following and give examples where necessary.

7.1 Mordants (25marks)

7.2 Ripening of reagents (25marks)

7.3 Bluing of tissue sections in H&E staining technique (25marks)

7.4 Differentiation in H&E staining technique (25marks)

8.

8.1 List the quality control steps that you would do to ensure the production of good H & E stained sections after processing of cassettes, to the submission of slides to the Consultant Histopathologist. (50 marks)

8.2 List the causes for following problems encountered during routine H&E staining and what remedial actions you would take to correct them?

8.2.1. Spotty irregular staining in H&E section (10 marks)

8.2.2. The nuclei are too pale (10 marks)

8.2.3. Blue – black precipitate on the top of the sections (10 marks)

8.2.4. Water and slides turn milky when slides are placed in water after rehydration step (10 marks)

8.2.5. The nuclei appear red or red brown (10 marks)