4. File

Histopathology and Cytopathology (MLS 3101) – Theory

Thursday 27th July 2017   Time: 8.30 a.m. – 10.30 a.m.   Duration: 2 hours

Index No: ....

Instructions: Answer 4 out of 5 questions. Answer each question in a separate booklet.

(25)

1.

1.1. Define the following terms.

    1.1.1. Necrosis

    1.1.2. Apoptosis   (20 marks)

1.2. State the types of necrosis seen in the following conditions.

    1.2.1. Myocardial infarction

    1.2.2. Cerebral infarction   (10 marks)

1.3. Describe the similarities and differences between necrosis and apoptosis.   (50 marks)

1.4. List **four** differences between transudates and exudates.   (20 marks)

2.

2.1. State **one** special stain for the demonstration of each of the following material in a histological section.

    2.1.1. Amyloid

    2.1.2. Glycogen

    2.1.3. Mucin in gastric epithelium

    2.1.4. Neuroendocrine granules in a tumour   (20 marks)

2.2. Briefly describe the chemical basis of **two** of the stains mentioned under 2.1 above.   (40 marks)

2.3. Discuss the value of a control in special stains.   (40 marks)

3. A pathologist reporting on cases in a histopathology slide tray finds that a slide labeled 100/17 has an endoscopic rectal biopsy. But the corresponding request form states that it is an oesophgeal biopsy.

3.1. Discuss the possible errors that may have occurred giving rise to the above mix up, from the time the biopsy was taken until the slide was prepared.   (50 marks)

3.2. Describe how to prevent the errors stated in 3.1 above.   (50 marks)

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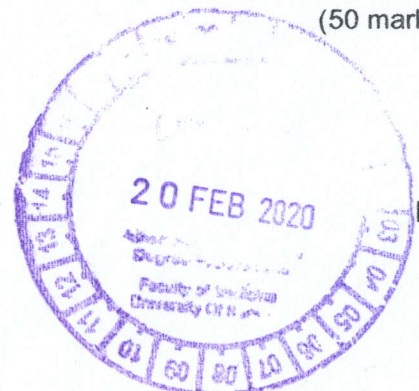
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4. You are the in-charge technical personnel in a Histopathology laboratory which receives 1500 specimens per year. It has a microtome, knife sharpener, rotary tissue processor, wax dispenser and a hot-air oven as equipment.

4.1. Discuss the steps that you would take in maintaining the rotary tissue processor to ensure optimum tissue processing. (40 marks)

4.2. It was decided to upgrade this laboratory to cater to 6000 specimens per year, as the hospital is going to be expanded.

Describe how you would plan to prepare this laboratory to process 6000 specimens year while maintaining standards. (60 marks)

5.

5.1. Describe the scientific basis of the use of the following in routine H&E staining.

   5.1.1. aluminium

   5.1.2. weak ammonia solution

   5.1.3. xylene (30 marks)

5.2. Describe the scientific basis of the use of the following in immunohistochemical staining.

   5.2.1. wash buffers

   5.2.2. microwave oven

   5.2.3. H_2O_2 (30 marks)

5.3. Describe the similarities and differences between progressive and regressive staining.

(40 marks)