

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE IN BIOMEDICAL SCIENCE AND TECHNOLOGY

BMET 213: MEDICAL HISTOLOGY

STREAMS: BMED Y2S1

TIME: 2 HOURS

DAY/DATE: THURSDAY 7/12/2017

2.30 P.M - 4.30 P.M.

INSTRUCTIONS:

- Answer Question ONE (COMPULSORY) and any other TWO Questions.
- Sketch diagrams may be used whenever they may help to illustrate your answer.
- Do not write anything on the question paper
- This is a closed book exam. No reference materials are allowed in the examination room.
- There will be no use of mobile phones or any unauthorized material.

QUESTION ONE

- (a) In medical histology, haematoxylin and eosin staining technique is one of the protocols followed to nuclear staining.
- (i) Explain principle of the haematoxylin and eosin staining technique. [3 Marks]
- (ii) Document the step wise procedure for haematoxylin and eosin staining technique. [7 Marks]
- (iii) Specify the expected results for various cell structures in haematoxylin and eosin staining technique. [4 Marks]
- (b) Describe and specify signs of the post mortem changes in tissues. [6 Marks]
- (c) You are working as a senior biomedical scientist in a department of medical histology and pathology. Validate criteria that you would consider to select a good fixative for your department. [6 Marks]
- (d) Explain factors influencing the rate of tissue impregnation. [4 Marks]

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QUESTION TWO [20 MARKS]

- (a) Describe casting of tissue in medical histology laboratory. [2 Marks]
- (b) You are working in medical histology laboratory. A bone tissue is brought to the laboratory for pathological analysis. Describe how you will ensure that tissue decalcification end point is achieved to facilitate cutting. [4 Marks]
- (c) Validate some of the criteria to be considered while selecting a good mounting media in a medical histology laboratory. [6 Marks]
- (d) Explain the characteristics of cancer or malignant cell in medical histology. [8 Marks]

QUESTION THREE [20 MARKS]

- (a) Discuss the principle and step wise, document the procedure needed to demonstrate exfoliated cells by papanicolaou stain and record the expected results. [8 Marks]
- (b) Discuss some basic rules for staining. [8 Marks]
- (c) Explain the diagnostic significance of bone histology. [4 Marks]

QUESTION FOUR [20 MARKS]

- (a) Discuss the following in relation to tissue processing in a medical histology laboratory [10 Marks]
 - (i) Direct staining [1 Mark]
 - (ii) Indirect staining [1 Mark]
 - (iii) Progressive staining [1 Mark]
 - (iv) Regressive staining [1 Mark]
 - (v) Decolourization [1 Mark]
 - (vi) Differentiation [1 Mark]
 - (vii) Histochemical staining [1 Mark]
 - (viii) Counter stains [1 Mark]
 - (ix) Mordants [1 Mark]
 - (x) Accentuators [1 Mark]
 - (b) Discuss three major roles of gynaecological cytology and Exfoliative cytology. [3 Marks]
 - (c) Discuss causes of poor quality staining in haematoxylin and eosin technique. [7 Marks]
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