Diploma of Expert Practice in Histological Dissection

Examination 2018

Paper 1

Mandatory modules short-answer questions

120 minutes

1. Attempt all questions
2. Questions may be answered in any order
3. Each question is worth a total of 20 marks
4. You must transfer your answers directly into the answer booklet
5. Begin each new answer on a new page

The question paper is not to be removed from the examination room
Q1. **Clinical Governance**

a. Describe **six** elements of specimen dissection where consideration of the risks involved must be made and suggest ways of mitigating against them whilst carrying out the dissection process. 

   (12 marks)

b. Name the four guiding principles that the Human Tissue Authority existence and approach are founded on. 

   (4 marks)

c. Under the Human Tissue Act consent is needed for the storage and use of tissue from a living person for four specific scheduled purposes. List these four purposes. 

   (4 marks)

Q2. **General Principles of Specimen Dissection**

You have been asked to speak to a group of Registrars on the submission of specimens for histopathological investigations.

a. Outline and justify the information you would give them on submission of specimens to the laboratory and fulfilment of local acceptance criteria. 

   (8 marks)

b. Explain the procedure(s) in place when these criteria are not met. 

   (4 marks)

c. Explain the purpose of the clinical history and using three different specimen examples describe how this may impact on the handling of the specimen within the laboratory. 

   (8 marks)
Q3. Surgical Procedures

A patient attends their local hospital for an oesophagogastroduodenoscopy (OGD) investigation.

a. Which three organs of the body are being investigated using this procedure? (3 marks)

b. For each organ, give an example of a benign pathology that may be diagnosed as a result of the procedure, and describe the potential complications if it is left untreated. (9 marks)

A 28-year old woman undergoes an ERPC procedure at the local hospital.

c. What does the term ERPC stand for, and why is it performed? (2 marks)

d. What are the potential risks of this surgical procedure, and how may they be addressed if they occur? (6 marks)

Q4. Pathological Processes

Necrosis

a. Define necrosis and briefly describe the cellular changes observed. (2 marks)

b. Give a brief description of the following types of necrosis, with an example of each. (3 marks each)
   i. Coagulative necrosis
   ii. Liquefaction necrosis
   iii. Caseous necrosis

Cellular adaptations to stress

c. Describe the following types of cellular adaption to stress, with examples: (3 marks each)
   i. Hypertrophy
   ii. Hyperplasia
   iii. Metaplasia
Q5. **Anatomical Nomenclature**

a. Draw a detailed anatomical diagram of the male urinary bladder labelling the main features. (5 marks)

b. Briefly define the following anatomical terms: (2 marks each)
   
i. Anatomical position
   ii. Olecranon
   iii. Phalanges
   iv. Popliteal fossa
   v. Contralateral
   vi. Epigastric

c. Give the anatomical position of each of the following: (1 mark each)
   
i. Rectum in relation to the prostate
   ii. Glabella to nose
   iii. Caecum to sigmoid colon
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Paper 2

Optional modules short-answer questions

120 minutes

1. Attempt 6 from 11 questions
2. Each question is worth 20 marks
3. You must transfer your answers directly into the answer booklet
4. Begin each new answer on a new page
5. Questions can be answered in any order

This question paper is not to be removed from the examination room.
Question 1 - Endocrine

a. How would you macroscopically describe and dissect a thyroid lobectomy removed for a nodule? What blocks would you take and why? (12 marks)

b. What sampling techniques can be performed in the investigation of pancreatic abnormalities? (4 marks)

c. What disorders may be diagnosed histologically on such a biopsy? (4 marks)

Question 2 - Skin

a. Define the following terms. (3 marks)
   i. Nodule
   ii. Macule
   iii. Cyst

b. Give examples of two diseases / diagnoses which may present as a nodule on the skin and describe further clinical or macroscopic features that you would expect to see in these specific diagnoses. (4 marks)

c. Write short notes on Merkel cell carcinoma (neuroendocrine carcinoma of skin). (5 marks)

d. During a routine dissection session, where no dictation equipment is available, what information would you ask the biomedical support worker to write for you in the macro description for a case of an atypical pigmented lesion in a skin ellipse? (6 marks)

e. When dealing with a wider excision specimen of a previously excised melanoma what pieces of information and macro findings would determine how much of the scar should be processed? (2 marks)
Question 3 – Breast

a. Describe the structure and physiological function of the normal post-partum female breast.  
(8 marks)

A 51-year old lady presented with unilateral blood stained nipple discharge. Physical examination and imaging revealed no evidence of a mass lesion.

b. What would be the differential diagnosis at this stage?  
(2 marks)

A subsequent excision specimen was received in the form of a total duct excision.

c. Describe the classical macroscopic appearance of such as specimen.  
(2 marks)

d. Describe how and why you would handle and dissect the specimen.  
(6 marks)

e. Under what circumstances would a microdochectomy be the excision of choice?  
(2 marks)

Question 4 - Osteoarticular and soft tissue

a. Write short notes on the following pathological conditions including their anatomical location, dissection, macroscopic and microscopic features.  
(5 marks each)

i. Glomus tumour

ii. Neurofibroma

iii. Bursa

b. Draw a labelled diagram of a femoral head.  
(5 marks)

Question 5 - Cardio-thoracic

a. Draw a detailed anatomical diagram of the lower respiratory tree labelling the main features.  
(8 marks)

b. Give three different types of biopsy specimens from the lower respiratory tract, the likely appearance and briefly describe how they would be handled in the laboratory.  
(6 marks)

c. Briefly describe the morphology of bronchiectasis citing with specific examples three causes of the disease.  
(6 marks)
Question 6 - Gastro-intestinal and Hepatobiliary

a. You receive an appendix on your cut up, with the clinical details ‘histopathology please’. How would you approach the preparation and dissection of this specimen? (12 marks)

b. Why is it important to sample the base and tip of an appendiceal specimen? (2 marks)

On examining the appendix before sectioning, you identify a small defect with visible mucus on the surface.

c. What specific steps might you take when handling the specimen? (6 marks)

Question 7 - Gynaecological

a. Describe the likely macroscopic and microscopic appearances of the following and state which specific areas of the female genital tract they are likely to occur in. (3 marks each)

i. Ectropion (Erosion)
ii. Cystic (Simple) Hyperplasia
iii. Pseudodecidualisation
iv. Epidermoid (“Sebaceous”) Cyst

You receive a total hysterectomy with both tubes and ovaries attached with the following clinical details

b. Briefly explain what you understand by the following clinical conditions and outline what considerations you would make in handling/sampling these specimens.

i. Risk reducing surgery - known Lynch syndrome (4 marks)

ii. Risk reducing surgery - BRCA1 carrier (4 marks)
Question 8 - Genito-urinary

Vas Deferens
a. Describe how you would dissect these specimens. (3 marks)

b. Why it is important that these specimens are handled correctly in the laboratory? (1 mark)

c. What is vasitis nodosa? (2 marks)

Ureteric Stricture
You receive a length of ureter, with the clinical information ‘ureteric stricture’.

d. Describe how you would handle this specimen at dissection. (5 marks)

e. List six other (extrinsic or intrinsic) causes of ureteric obstruction. (3 marks)

Hydrocoele
f. What is a hydrocoele? (2 marks)

g. Give four possible underlying causes. (2 marks)

h. What is a spermatocoele? (2 marks)

Question 9 - Haemopoietic

a. Name the two types of bone marrow and describe the differences between them. (5 marks)

b. Draw a cross-section of a long bone, demonstrating the anatomical location of the two types of bone marrow and any surrounding structures. (5 marks)

c. Briefly describe the difference between lymphoid hyperplasia and lymphadenitis. (2 marks)

d. For the following types of lymphoid hyperplasia, give two examples of diseases that may cause them, and their pathogenesis (4 marks each)

i. Granulomatous lymphadenitis

ii. Necrotising lymphadenitis
**Question 10 - Neuromuscular**

a. On this cross-section of a nerve, identify the following structures: (One mark each)
   - Epineurium
   - Fascicle
   - Endoneurium
   - Perineurium

b. What is the function of the following structures within a nerve? (2 marks each)
   - Nerve fibre
   - Epineurium
   - Fascicle
   - Endoneurium
   - Perineurium

c. Describe two benign tumours that may derive from nerves, describing their macroscopic and microscopic main features. (6 marks)

**Question 11 - Head and Neck**

Cysts from the head and neck region are a frequently received specimen in histopathology and are usually divided into ‘dental’ and ‘non-dental’ in origin.

a. List four types of ‘non-dental’ cysts that come from the head and neck region. (4 marks)

b. For each of the four non-dental cysts you have identified in a. explain how they may arise and how they should be dissected. (16 marks)