



**PROGRAM** : BACCALAUREUS TECHNOLOGIAE  
*PODIATRY*

**SUBJECT** : CLINICAL STUDIES 3 THEORY

**CODE** : PKSA311

**DATE** : SUPPLEMENTARY EXAMINATION 2016

**DURATION** : 180 MINUTES

**WEIGHT** : 50:50

**TOTAL MARKS** : 164

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**EXAMINER** : MS. M. MOOTHEE

**MODERATOR** : MR. S. NTULI

**NUMBER OF PAGES** : 5 PAGES (INCLUDING COVER PAGE)

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**INSTRUCTIONS**

1. PLEASE HAND BOTH YOUR QUESTION PAPER AND ANSWER SHEET TO THE INVIGILATOR
2. PLEASE ANSWER ALL QUESTIONS.
3. WRITE NEATLY AND LEGIBLY.
4. LEAVE A LINE SPACE BETWEEN QUESTIONS.
5. NUMBER QUESTIONS CLEARLY.

**6. MARKS WILL BE ALLOCATED FOR LOGICAL EXPOSITION OF ANSWERS. PLEASE ENSURE THAT YOU READ THE QUESTIONS CAREFULLY.**

**SECTION ONE CLINICAL BASED CASE STUDIES**

**QUESTION 1**

Read the case study below and answer the questions which follow.

*A 29 year old patient presents to the podiatry clinic with the following lesion on the posterior aspect of the calcaneus.*



- 1.1 Based on the presentation above what is your likely diagnosis? [3]
- 1.2 Explain the pathophysiology of this condition. [7]
- 1.3 This condition is often misdiagnosed as other hyperkeratotic lesions. Explain how you would clinically differentiate between this lesion and other similar hyperkeratotic lesions. [18]
- 1.4 Describe your management this condition using Chemical Cautery/ chemotherapy. [10]
- 1.5 list and briefly discuss the seven factors that may influence your choice chemical agent agents in managing patients with these lesions. [14]

**[52]**

## **QUESTION 2**

Read the case study below and answer the questions which follow.

*A 37 year old male Diabetes Mellitus (DM) patient presents with bilateral infected onychocryptosis (see pic below). The area is red, swollen, and weeping and has a foul smelling. The area around the lunula is cellulitic with proliferation of hypergranulation tissue. The condition has now become chronic in nature. The patient is in considerable pain and on gentle probing you discover that there is a nail splinter deeply embedded into the sulcus. A random blood glucose reading taken at your practice reveals a blood glucose level of 23mmol/l. The patient is currently on medication for the DM as well as medication for hypertension.*



2.1.1 In light of the presence of the proliferative hypergranulation tissue you decide to apply 95% silver nitrate to the area. Classify the group of medicaments that silver nitrate belongs to and what its expected mechanism of action on the hypergranulation will be. [3]

2.1.2 In this patient, is the application of silver nitrate advocated? Motivate your answer. [5]

2.2 At this initial visit what challenges are you likely to face which will influence the patients' treatment? [5]

2.3 Would you refer the patient for any diagnostic investigations? Justify your answer. [5]

2.4 In the presence of infection and pain you contemplate prescribing an anti-microbial and an analgesic agents for this patient. Name the two agents you are likely to prescribe and motivate why it is that you chose these particular agents. [10]

2.5 Would you consider surgical intervention for this patient? Justify your answer. [6]

*On further discussion with the patient, he reports a swollen, red, hot left foot and reports that that his foot shape seems to be changing. The patient reports slight pain localised around the ankle and medial longitudinal arch area and on further assessment you confirm that the left foot is 5° warmer than the left foot and there is a dropped MLA. The patient recalls no history of trauma.*

2.6.1 What condition do you think the patient may be developing? [4]

2.6.2 Discuss the pathophysiology of this condition. [20]

2.6.3 How would you manage this patient condition in 2.6.1? [10]

[68]

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## **SECTION TWO CLINICAL BIOMECHANICS**

### **QUESTION 3**

*The development of biomechanical models started from clinical observation, continuing with the complex kinematic and kinetic analysis using multi-segment foot models and integrating muscle activity monitoring. A reference point is the subtalar joint neutral paradigm (M. Root), as unified system of defining normal and pathological foot. The evolution of biomechanical assessment understanding/ techniques however, has led to challenging the theoretical grounds of this paradigm (i.e. STJ neutral), leading to the emergence of new ones such as: tissue stress theory, sagittal plane facilitation.*

3.1 Based on your understanding of the Root paradigm, do you think the Root theory is still relevant in podiatric practice? [12]

*The tissue stress theory postulates that increased loading or changing the level of activity will determine the shift of tissues from the elastic deformity area to the plastic deformity one, leading to microtrauma and symptoms associated with overuse. With this statement in mind:*

3.2.1 List the 4-stage protocol used in tissue stress theory [8]

3.2.2 How would this theory influence your patient care/ treatment? [6]

*“The sagittal plane facilitation of motion model is offered as a biologically plausible and theoretically coherent alternative model to guide clinical practice.....” Payne (1997). Based on this statement:*

3.3.1 Based on your understanding of the sagittal plane facilitation paradigm briefly describe the implications of Hallux Limitus/ Rigidus deformity on normal ambulation. [8]

3.3.2 Describe the compensatory motions you would expect to see in a patient with hallux limitus/ rigidus as a sign of sagittal plane facilitation dysfunction. [10]

[44]

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**Total Marks: 164**