



Uva Wellassa University, Sri Lanka
Faculty of Applied Sciences
Department of Science and Technology
300 level 1st Semester Examination – Jul/Aug 2019
SCT 323-2 Biomaterials and Process Engineering



Instructions to candidates

Time allocation: Two (02) hours

Number of questions: Two (02) structured and two (02) essay questions

Answer the structured questions in the space provided and use a booklet to answer the essay questions

Answer all questions

Mark allocation: 60

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Structured questions

1.

- a. Based on the reaction with the host tissues, Biomaterials are classified into four distinct categories. Name them and give two example materials for each category.

Category

Example

- | | |
|--------|-------|
| 1..... | |
| 2..... | |
| 3..... | |
| 4..... | |

(04 Marks)

- b. Give two (02) examples for natural Biomaterials

- | |
|---------|
| 1. |
| 2. |

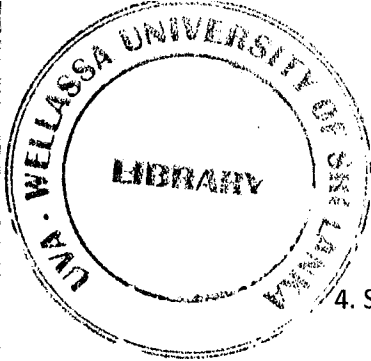
(02 Marks)

- c. Classification of Biomaterials are based on material source. Give the material source of the following biomaterials.

Biomaterial

Material source

- | | |
|---------------|-------|
| 1. Autograft | |
| 2. Allograft | |
| 3. Xenograft. | |



4. Synograft

.....
(04 Marks)

d. Give two (02) example devices each for the following biomedical implants.

Device	Examples
Total implanted devices	
Partially implanted devices	
Totally external devices	

(06 Marks)

e. Give four (04) main reasons for implant failures that occur in the human body.

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.....
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(04 Marks)

Essay questions

1.

- What is a bioresorbable/biodegradable material?
(05 marks)
- Name two bioresorbable/biodegradable materials
(05 marks)
- Discuss the distinct advantages of bioresorbable/biodegradable materials in human healthcare.
(10 marks)

2.

- Resin fillings pose less health risks to humans than amalgam fillings. Explain this statement in terms of chemical composition of the two types of fillings.
(10 marks)
- Explain the full procedure for implanting a total dental implant in a patient.
(10 marks)