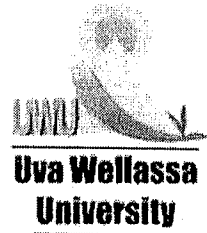
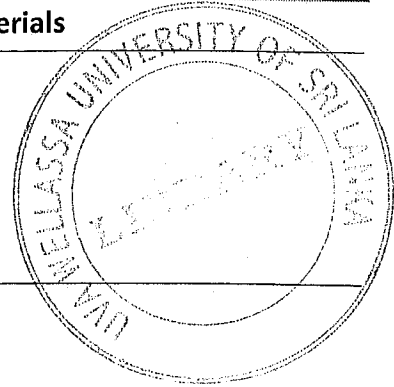


Uva Wellassa University of Sri Lanka
Faculty of Science & Technology
Science and Technology Degree Program
300 level 2nd Semester Examination – Dec.2018 /Jan. 2019
SCT 446-2 Composites and Biomaterials



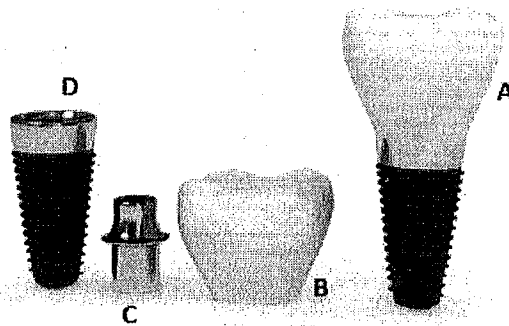
Instructions to candidate

Time allocation: Two (02) hours
Number of questions: Four (04) essay
Mark allocation: 100
Answer all questions



1.
 - a. What is a composite?
(10 Marks)
 - b. Give two (02) examples of composite materials used in biomedical engineering.
(05 Marks)
 - a. Give two examples each for metal, ceramic and polymer biomaterials.
(06 Marks)
 - b. Give one advantage and one disadvantage of Bioceramics.
(04 Marks)

2. Given in the figure below labeled as **A** is a total dental implant.



- (15) Name parts **B**, **C** and **D** (06 marks)
- (16) Suggest suitable materials for manufacture of parts **B** and **D** (05 marks)
- (17) Briefly explain all important surgical steps involved in planting **A** in the oral cavity. (14 marks)

3.

- a. What is a Prosthesis?
(10 Marks)
- b. Give one examples each for first, second and third generation Implant.
(06 Marks)
- c. Give one examples each for totally external, partially external and totally internal explant.
(09 Marks)

4.

- a. State four (04) negative tissue responses if, the material that used to produce an implant is not biocompatible.
(08 Marks)
- b. Give four reasons how an implant could fail inside the human body.
(08 Marks)
- c. Briefly discuss the advantages of "Biodegradable" implants.
(09 marks)