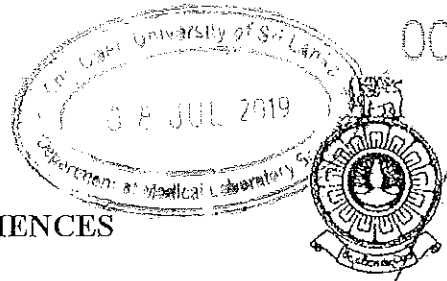


THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF MEDICAL LABORATORY SCIENCES
ACADEMIC YEAR 2018/2019 – SEMESTER II



BACHELOR OF MEDICAL LABORATORY SCIENCES (BMLS) HONOURS
MDU5209 – ADVANCED TECHNIQUES IN MEDICAL LABORATORY SCIENCES
NBT I
DURATION: 1 HOUR

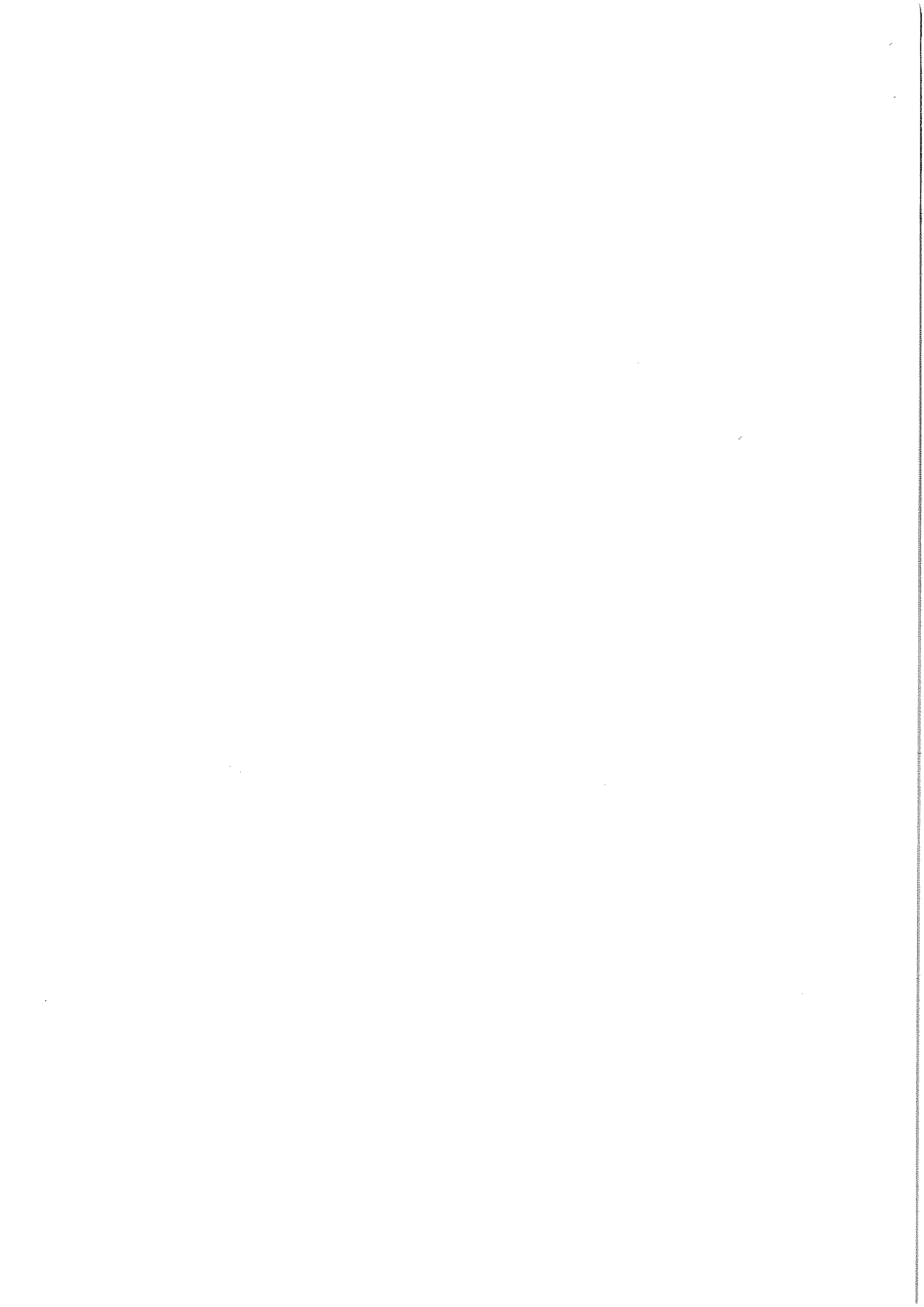
DATE: 08TH JULY 2019

TIME: 1.00 PM – 2.00 PM

Registration No:

IMPORTANT INSTRUCTIONS/ INFORMATIONS TO CANDIDATES

- This question paper consists of 05 pages with 10 Multiple Choice Questions (Part A), 02 Structured Essay Questions (Part B) and 01 Essay Question (Part C).
- Write your Registration Number in the space provided.
- Answer ALL questions.
- **Multiple Choice Questions (Part A):** Indicate the best answer for each question in the answer sheet provided by placing a cross (X) in INK in the relevant cage. (answers in pencil will NOT be marked)
- **Structured Essay Questions (Part B):** Write answers in given booklets (Question 01 and Question 02 should be written in two (02) separate booklets)
- **Essay Questions (Part C):** Write answers in given booklets (Should be written in separate booklet).
- Do not remove any page/part of this question paper from the examination hall.
- Mobile phones and any other electronic equipment are NOT allowed. Leave them outside.



PART B – Structured Essay Questions (80 marks)

1. **Nanotechnology and nanoscience are new areas that involve the scientific investigation and technical exploitation of properties that depend uniquely on the nanoscale.**
 - 1.1. State briefly the difference between nanoscience and nanotechnology. (08 marks)
 - 1.2. State **four (04)** size dependent properties exhibited by particles when their size is narrowed down in to nanoscale. (12 marks)
 - 1.3. Many advances in nanotechnology and current research use nature as an inspiration (biomimicry concept). Explain how concepts from nature has benefited the healthcare field taking an example from nature. (20 marks)

2. **Animal testing is used as an *in vivo* experiment method in biology and medicine.**
 - 2.1. List the steps of Wistar rats tail vein blood sampling. (05 marks)
 - 2.2. State the most suitable site to collect large volume of blood from rabbit at non-terminating point. (05 marks)
 - 2.3. Briefly describe how can you ensure the proper depth of gavage needle insertion in oral administration in Wistar rats? (05 marks)
 - 2.4. Briefly explain what happens when gavage needle is too short and too long? (05 marks)
 - 2.5. State the best site to do the intra-peritoneal injection in Wistar rats? (05 marks)
 - 2.6. Briefly describe why acclimatization period is important prior to the animal experiment? (05 marks)
 - 2.7. Write **two (02)** reasons for use of animals in biomedical research? (05 marks)
 - 2.8. Describe advantages of metabolic cages? (05 marks)

PART C – Essay Questions (10 marks)

1. Discuss the points which you have to consider before you select an animal experiment for your final year research. (10 marks)

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NBT I

REGISTRATION NO:

ANSWER SHEET FOR PART A

| Q. No. | (A) | (B) | (C) | (D) |
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