



**RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES**

BSc in Information Technology

First Year - Semester I Examination – July/August 2023

ICT 1201 – FUNDAMENTALS OF COMPUTER SYSTEMS

Time: TWO (02) hours

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- There are **FOUR (04)** questions in **TWO (02)** pages.
 - All questions carry equal marks.
 - Answer **ALL** questions.
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- a) What is the main component used to perform conditional operations in an analytical engine? Explain how it works. (05 marks)
 - b) Explain the mechanism used for calculation in the differential analyzer. (06 marks)
 - c) Compare and contrast first-generation and second-generation computers. (08 marks)
 - d) State the reason why people prefer digital computers instead analog computers. (06 marks)
- a) Below is an example of instructions. Explain what opcodes and operations are in the instructions.
ADD A, B (05 marks)
 - b) “Today, most common type of RAM is DDR-SDRAM”. Briefly explain why DDR-SDRAM is much faster. (05 marks)
 - c) Explain the purpose of the data bus, address bus, and control bus. (09 marks)
 - d) How does a computer know what type of information is stored in a specific location? (06 marks)

3. a) Explain what mechanical components are used in hard disk retrieval or data recording. (04 marks)
- b) Discuss with examples how the operating system allocates resources in space and time multiplexing. (08 marks)
- c) Give five major functions of the operating system and explain three of them. (09 marks)
- d) Compare and contrast Android OS and iOS. (04 marks)
4. a) What factors affect the data transmission capabilities of different media? (04 marks)
- b) Discuss with examples how information technology is used in medicine, e-governance, and defense" (08 marks)
- c) Explain types of system vulnerabilities with examples. (08 marks)
- d) What technologies and tools can be used to protect information resources? (05 marks)

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