



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

**B.Sc. (General) Degree in Information and Communication Technology
First Year Semester I Examinations – April/ May 2015**

ICT1201 – FUNDAMENTALS OF COMPUTER SYSTEMES

Time: TWO (02) hours

Answer ALL questions. Part 1 should be answered in the question paper itself. Part 2 should be answered in separate answer sheets provided.

Part 1

1.

A. Circle the correct answer.

(2 Marks for each question)

- i. Who is the inventor of "Difference Engine"?
 - a. Alan Turing
 - b. Charles Babbage
 - c. Remington Rand
 - d. Augusta Ada
- ii. First generation computers were programmed using
 - a. assembly languages
 - b. source codes
 - c. decimal codes
 - d. machine languages
- iii. Main components of second generation computers were
 - a. Vacuum Tubes
 - b. Transistors
 - c. Integrated Circuits
 - d. Large Scale Integrated Circuits
- iv. In which type of computer, data are represented as discrete signals?
 - a. Analog computer
 - b. Digital computer
 - c. Both (a) and (b)
 - d. None of these

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- v. Which type of operating system allows multiple tasks to run at the same time, each taking turns using the resources of the computer?
- Real-time processing
 - Batch processing
 - Multi tasking
 - None of these
- vi. Convert the decimal number 151.75 to binary.
- $(10000111.11)_2$
 - $(11010011.01)_2$
 - $(00111100.00)_2$
 - $(10010111.11)_2$
- vii. Convert the binary number 1001.0010 to decimal.
- 9.125
 - 12.5
 - 125
 - 90.125
- viii. A group of wires running parallel to each other between two connected computer parts and which transfers information is called
- track
 - cable
 - bus
 - none of the above

B. Show how the following expressions are evaluated using 8-bit 2s complement notation. Use the given spaces for your answers.

(5 Marks)

i. $-79 + 23$

ii. $-7 - 15$

(4 Marks)

Part 2

2.

- a. Give the full form of the abbreviations: VGA, ENIAC, VLSI, EEPROM. (4 Marks)
- b. Explain why modern computers contain both Dynamic RAM (DRAM) and Static RAM (SRAM). (7 Marks)
- c. What are registers? List out the commonly found registers in the CPU and explain their functions. (7 Marks)
- d. Describe the access time of a hard disk using a suitable example. (7 Marks)

3.

- a. For any FIVE of the following, explain its purpose, give an example of its use, and state whether it is a particular type of peripheral (input, output etc.): (5 Marks)
 - CD-ROM.
 - Hard disk drive.
 - Joystick.
 - Keyboard.
 - Light pen.
 - Plotter.
- b. What are the key features to consider when buying a printer? (5 Marks)
- c. State the major functions of operating systems. Briefly describe the different types of operating systems. (8 Marks)
- d. State the types of application software. Briefly describe the categories of ERP solutions. (7 Marks)

4.

- a. What are the advantages and disadvantages of using information technology in:
 - society
 - education
 - business(6 Marks)
- b. What is computer ethics? State at least 5 Commandments of Computer Ethics defined by the Computer Ethics Institute. (7 Marks)
- c. Briefly describe the role of ICTA in Sri Lanka. (5 Marks)
- d. How ICT graduates can contribute to develop the economy of Sri Lanka and to reduce poverty? (7 Marks)
