

# University of Ruhuna - Faculty of Technology

Bachelor of Information & Communication Technology

Level 1 (Semester 1) Examination - July 2017

Department: Information & Communication Technology

Time: 2 ½ hours

Course Unit: ICT1113 (Essentials of ICT)

Answer all five (5) questions

---

1)

a)

- i) Define a computer.
- ii) The development of computers can be categorized into five generations. Name key technologies used in each of these generations.

b)

- i) Write down two categories of pointing input devices based on the technology they use. State two examples for each category.
- ii) Name two main types of printers.
- iii) Write down five key features that need to be considered when you are buying a computer monitor.

c)

- i) Write down two advantages and two disadvantages of cache memory.
- ii) Storage devices can be categorized into two groups according to the physical location. Define these two groups and give two examples for each group.
- iii) Explain the importance of computer backups, giving at least two reasons to take backups and two examples for backup mediums.

2)

a)

- i) State the three key characteristics of Von Neumann Architecture.
- ii) Write down three differences between special purpose and general purpose configuration of a computer.

b)

- i) Name the two main steps of the instruction cycle.
- ii) Program Counter (PC) is one of the status and control registers in the CPU. Write down the main purpose of the PC.
- iii) CPU is connected to the other devices of the computer system using system bus. Briefly explain the three main types of buses in the system bus.

c)

- i) Write down the two main categories of computer software.
- ii) "Security" is one of the main functions of an operating system. Write down three other functions of an operating system.
- iii) Briefly explain what is meant by user authentication, access control and cryptography provided by an operating system for the safety of the data in the computer.

3)

- a) World Wide Web (WWW) uses client-server architecture for its communication.
- Name the standard communication protocol used for sending and receiving HTML documents over the web.
  - Explain the role of a web server and write down an example for web server software.
  - Explain the purpose of a web client and write down two examples for web client software.
- b)
- Name two protocols which govern the packets of information flow between computers.
  - Briefly explain the process happening in a packet switching network.
  - Name three services provided by the internet.
- c)
- Write down what is meant by troubleshooting in computers.
  - Sound issues are the most common problems anyone can face when working with computers. Write down five troubleshooting techniques for sound issues.

4)

- a)
- Define multiplexing which is a major technique used in computer networking.
  - Briefly explain the two main multiplexing methods.
- b)
- Write down two benefits of a computer network.
  - Briefly describe the concept "Peer-to-Peer networking".
  - LAN (Local Area Network) and WAN (Wide Area Network) are two network types. Differentiate LAN and WAN according to the bandwidth, speed and ownership.
- c)
- Name three methods used to represent characters in computers.
  - Write down two disadvantages of Signed Magnitude Method used to represent negative binary numbers in computers.
  - Calculate the following using four bit two's complement method
    - $(+2) + (+4)$
    - $(-2) + (-4)$
    - $(+2) + (-4)$
    - $(-2) + (+4)$

5)

a)

- i) Write down the duties of a computer sales representative and a corporate trainer.
- ii) Briefly explain how the certification benefits to each of the following parties.
  - Customers
  - Employers
  - Industry

b)

- i) Name key security objectives in CIA triad.
- ii) Briefly explain each objective you mentioned in 5) b) i).
- iii) List five good practices/principles which should be considered in security designing.

c)

- i) Write down what is meant by a computer virus.
- ii) Briefly explain meaning of the unethical action called "plagiarism".
- iii) Assume that you are an IT professional of an IT firm and your firm is a victim of a computer crime. Briefly explain three ethical decisions you have to take in this situation.

Inventory - II

Library, Faculty of Technology

University of Jeddah