University of Ruhuna - Faculty of Technology

Bachelor of Engineering Technology
Level 1 (Semester 1) Examination - July 2017

Department: Information & Communication Technology　　　　**Time Duration: 1 hour**

Course Unit: TMS1132 (Computer Fundamentals & PC Applications)

Answer all Two (2) questions

1)

　a.

　　i. Considering the hardware technology used, the computers can be classified into five generations. The hardware technology used in the first generation computers were vacuum tubes. What are the key hardware technologies used in other four generations?

　　ii. Name the two main types of Random Access Memory (RAM). List three differences between them.

　　iii. Briefly explain the uses of following computer input devices.

- Webcam
- Scanner

　b.

　　i. State the three key properties of Von Neumann Architecture.

　　ii. Write two main steps of the computer instruction cycle.

　　iii. System buses connect CPU with other components of a computer. Data bus is a type of a system bus that carry information. Name other two types of system buses.

　　iv. Suppose that a data bus is 32 bits wide (32 lines) and each instruction is 128 bits long. Calculate the number of times, the processor has to access the memory module during each instruction cycle.

　c.

　　i. What are the two main categories of computer software?

　　ii. What is meant by cross-platform applications?

　　iii. Briefly describe the difference between commercial software and free & open source software (FOSS). Give one example for each category.

d.
   i. Internet is a packet switching network. Briefly explain how a packet switching network works.
   ii. Write the two main protocols that govern the packets transferring process of the Internet.
   iii. Name three services provided by the internet.

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2)
   a.
   i. Modulation is an important technique used in the data transmission. State what is meant by Modulation. Name three types of modulation.
   ii. Name three differences between synchronous and asynchronous data transmission
   iii. Briefly explain the following topologies.
      - Bus topology
      - Ring topology
   b.
   i. What is meant by computer troubleshooting ?
   ii. What is the most common troubleshooting action that is performed when a computer is having a problem?
   iii. Write two troubleshooting actions for each of the following situations.
      - Monitor is not displaying anything.
      - Cannot log in to the computer.
   c.
   i. Name three computer security objectives defined in CIA traid.
   ii. State three types of threats caused by each of the following parties.
      - People
      - Malware
   iii. Briefly describe the concept "Isolation", used in the computer security.

   d.
   i. What are the two categories of Intellectual property?
   ii. What is meant by ethical hacking with respect to computer security?
   iii. List three ethical practices that can be used in a computing environment.