

# UNIVERSITY OF RUHUNA

## BACHELOR OF SCIENCE (GENERAL) DEGREE LEVEL I (SEMESTER I)

EXAMINATION – August/September 2017

SUBJECT: Computer Science

COURSE UNIT: COM 1111 (Basic Concepts of Information Technology) TIME: 1 hour

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Answer two questions only.

1.

a.

- i. Briefly explain five (05) basic functions of Information Technology in an organization.
- ii. Briefly explain the classification of computers according to their purpose.

b.

- i. Briefly describe the role of motherboard in a computer.
- ii. Compare the applicability of mainframe computers and supercomputers.

c.

- i. Describe the main function of cache memory.
- ii. What is the difference between DRAM and SRAM in terms of characteristics such as speed, cost and infrastructure?

2.

a.

- i. What is the impact of topology on network performance?
- ii. State two (02) Wide Area Network (WAN) switching methods and describe them briefly.

b. List three (03) different classes of IPv4 addresses and explain the structure and usability of each class.

c.

- i. Write signed magnitude and excess notation of the decimal value, -30 by using 8-bit binary sequence notation.
- ii. Perform following calculation using 2's complement method. You must use 8-bit representation - this calculation.

$$15_{10} - 17_{10}$$

iii. Perform following number conversions.

$CD24_{16} \rightarrow \text{Binary}$

$1100111110111011_2 \rightarrow \text{Hexadecimal}$

3.

a.

- i. Briefly explain three (03) functions of operating systems.
- ii. Compare and contrast compiler languages and interpreter languages.
- iii. Briefly describe three ways to protect your computer against viruses.

b.

- i. Explain what is meant by software piracy giving two examples.
- ii. Compare application software with system software.
- iii. State two (02) recent developments in input/output devices.

c.

- i. What is the impact of ICT in education?
- ii. Compare two (02) methods of representing negative values in computers giving advantages and disadvantages of each.