The Open University of Sri Lanka
Faculty of Natural Sciences
B.Sc. Degree Programme

Department	: Computer Science
Level	: Level 03
Name of the Examination	: Final Examination
Course Title and – Codes	: Fundamentals of Computers – CSU3315/CPU1140
Academic Year	: 2024/2025
Date	: 21.11.2024
Time	: 09.30am – 11.30am

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **SIX (06)** questions in **03** pages.
3. Answer **FOUR (04)** questions ONLY.
4. Answer for each question should commence from a new page.
5. Draw clear diagrams where necessary.
6. Involvement in any activity that is considered as exam offense will lead to punishment.
7. Use blue or black ink to answer the questions.
8. Clearly state your index number in your answer script.

Q1).

a. The term 'characteristic' means the capabilities and limitations of a computer system. State three capabilities and three limitations of a computer and briefly explain them.

b. We can classify computers based on their size and power. Write the four categories of computers and describe each category in brief.

c. Draw a diagram to show the data flow and control flow in the CPU.

d. Briefly describe the following components of a computer:

   i. Processor Registers
   ii. Memory
   iii. Motherboard

e. Write the differences between RAM and ROM based on functionality, volatility and changeability.

Q2).

a. What is known as a computer peripheral?

b. What are the categories of pointing input devices? Give two examples for each category.

c. State the display characteristics and explain them briefly.

d. Write three advantages of LCD monitors and three drawbacks of CRT monitors.

e. Give brief descriptions for the following ports and draw a simple diagram for each.

   i. VGA port
   ii. HDMI
   iii. Serial port
   iv. Parallel port

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Q3).

a. State five generations of the programming languages and describe two of them.

b. Differentiate between the interpreter and the compiler.

c. Briefly describe the following terms:

   i. Source code
   ii. Object file
   iii. Debugger

d. What are the classes of the application software?

e. Describe the uses of database management system.

Q4).

a. What is known as the Radix?

b. Convert the following numbers:

   i. 355.125_{10} into binary.
   ii. 111101.11_2 into decimal.

c. What is BCD representation? Give a brief description.

d. Add the following numbers using BCD representation.

   576 + 45

e. Subtract the following using BCD representation.

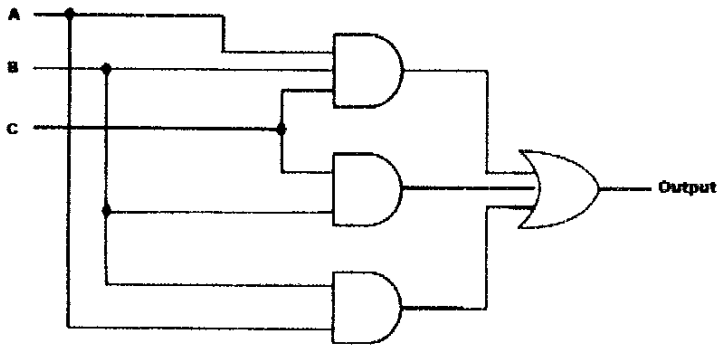
   4523 – 344

Q5).

a. Explain about Boolean algebra compared to binary logic.

b. State three Boolean laws you have studied.

c. Write a Boolean equation for the following logic circuit.



d. Simplify the above derived Boolean equation using Boolean Laws.

e. Draw the Logic Circuit for the simplified equation of the part (d).

Q6).

a. What is a computer network? Write the Uses of a Computer Network.

b. Give brief explanation for the following network peripherals.

   i. Node
   ii. Hub
   iii. Switch
   iv. Client/Server

c. Draw four network topologies and state advantages of each topology.

d. Identify and name the parts of the following URL.

   http://www.ou.ac.lk/science/maths/duminda.html