



COLLEGE OF ENGINEERING, SCIENCE & TECHNOLOGY (CEST)

SCHOOL OF ELECTRICAL & ELECTRONICS ENGINEERING

CERTIFICATE IV IN ELECTRONICS ENGINEERING-STAGE 4

EEE419 - COMPUTER SYSTEMS 1

FINAL EXAMINATION – PENSTER 4, 2017

TIME ALLOWED = 2 HOURS

INSTRUCTIONS TO STUDENTS

1. *You are allowed 10 minutes Extra reading time during which you are NOT to write.*
2. *Begin each section on a fresh page and use both sides of the sheet.*
3. *Write your candidate-number at the top of each attached sheet*
4. *Insert all written foolscaps, graph paper, drawing paper, etc. in their correct sequence and secure with string*
5. *For all sheets of paper on which rough/draft work has been done, cross each one through and ATTACH these to your answer scripts.*
6. *Write clearly the number(s) of the question(s) attempted on the top of each sheet.*
7. *ATTEMPT ALL QUESTIONS.*
8. *Show all workings where necessary.*
9. *Do not use programmable calculators, especially the ones that does the conversions of number systems.*

SECTION A**MULTIPLE CHOICE****[30 MARKS]**

1. Which one of the following devices is not a pointing device?
 - A. Mouse
 - B. Trackball
 - C. Keyboard
 - D. Touchpad

2. Classification of computers in order of increasing size and power are as follows:
 - A. Mainframe, microcomputer, minicomputer, supercomputer
 - B. Supercomputer, mainframe, minicomputer, microcomputer
 - C. Microcomputer, minicomputer, mainframe, supercomputer
 - D. Minicomputer, microcomputer, mainframe, supercomputer

3. Which one of the following devices is not an optical disk storage?
 - A. DVD
 - B. CD-RW
 - C. Floppy disk
 - D. Compact disk

4. The brain of any computer system is
 - A. CPU
 - B. Memory
 - C. ALU
 - D. Control unit

5. Which one of the following is the most frequently used language in business programming?
 - A. CASE
 - B. BASIC
 - C. PASCAL
 - D. COBOL

6. A symbol that can be used as a wildcard in DOS is
 - A. ?
 - B. /
 - C. =
 - D. +

7. The multimedia component that requires the least amount of storage is
 - A. graphics.
 - B. sound.
 - C. video.
 - D. text.

8. An example of an external DOS command is
 - A. CLS.
 - B. TYPE.
 - C. PRINT.
 - D. VER.

9. To remove unneeded programs and related files from a hard disk you would use a _____
- A. troubleshooting program
 - B. uninstall program
 - C. antivirus program
 - D. file compression program
10. The output quality of a printer is measured by
- A. Dots per sq. inch
 - B. Dots per inch
 - C. Dots printed per unit time
 - D. All of the above
11. What punctuation is used to signal the beginning and end of code blocks?
- A. { }
 - B. -> and <
 - C. BEGIN and END
 - D. (and)
12. Which of the following is not an example of a system software
- A. iOS 7
 - B. Microsoft Windows 7
 - C. Android
 - D. Microsoft Word
13. What punctuation must be used to end C++ expression statements?
- A. dot (.)
 - B. colon (:)
 - C. single quote (')
 - D. semicolon (;)
14. An example of a computer virus is a
- A. bug.
 - B. piracy.
 - C. firewall.
 - D. worm.
15. Which of the following file extensions is a graphic file?
- A. .xls
 - B. .doc
 - C. .bmp
 - D. .html
16. Computers only recognize _____ signals?
- A. Analog
 - B. Digital
 - C. Data
 - D. Information

17. Pseudocode uses _____ to express a program's logic.
- A. English-like statements
 - B. an object program
 - C. geometric symbols
 - D. stepwise refinement
18. The _____ symbol is used to represent process in flowchart.
- A. Circle
 - B. Rectangle
 - C. Diamond
 - D. None of these
19. From what location are the first computer instructions available on boot up?
- A.ROM BIOS
 - B.CPU
 - C.boot.ini
 - D.CONFIG.SYS
20. Which of the following best describes a cold boot?
- A. Running applications in a cold environment
 - B. Restarting the computer when the computer is already on
 - C. Starting a computer that has been turned off
 - D. A foot wear which is not warm

SECTION B

TRUE & FALSE

[10 MARKS]

Write your answer as either *TRUE* or *FALSE* in the answer booklet provided.

1. Missing slot covers on a computer can cause it to overheat.
2. High level languages are problem-oriented language.
3. Network interface cards are used to play sounds and music from speakers.
4. Expansion slots give flexibility to users to update and give more capabilities to their computers.
5. The C++ input stream object `cin >>` is used to read values input from the keyboard.
6. A C++ identifier has to begin with a number.
7. PROM is secondary memory.
8. A WORM allows the user to write data permanently on to the disk.
9. A Dot Matrix printer uses a combination of laser-beam & electro photographic techniques.
10. DIR command is used to see the content of a specific file.

SECTION C**MATCHING****[10 MARKS]**

	COLUMN A		COLUMN B
1.	A car computer	A	A read-only memory whose contents can be erased and reprogrammed using a pulsed voltage.
2.	Analog computer	B	Are the fastest and most expensive machines
3.	EEPROM	C	Step by step process for solving a problem
4.	Power On Self-Test	D	Storage device containing nonvolatile flash memory
5.	Supercomputers	E	Computer checks if all its hardware is working.
6.	Mainframe computers	F	Can be described as special-purpose, because it only accepts specific input and performs limited functions.
7.	SSD	G	Are generally 32-bit microprocessors and are generally used in centralised databases
8.	Algorithm	H	geometric symbols to express a program's logic
9.	Cache	I	Is a device that accepts data as a continuously varying quantity
10.	Flowchart	J	Holds data and instructions retrieved from RAM to provide faster access to the CPU

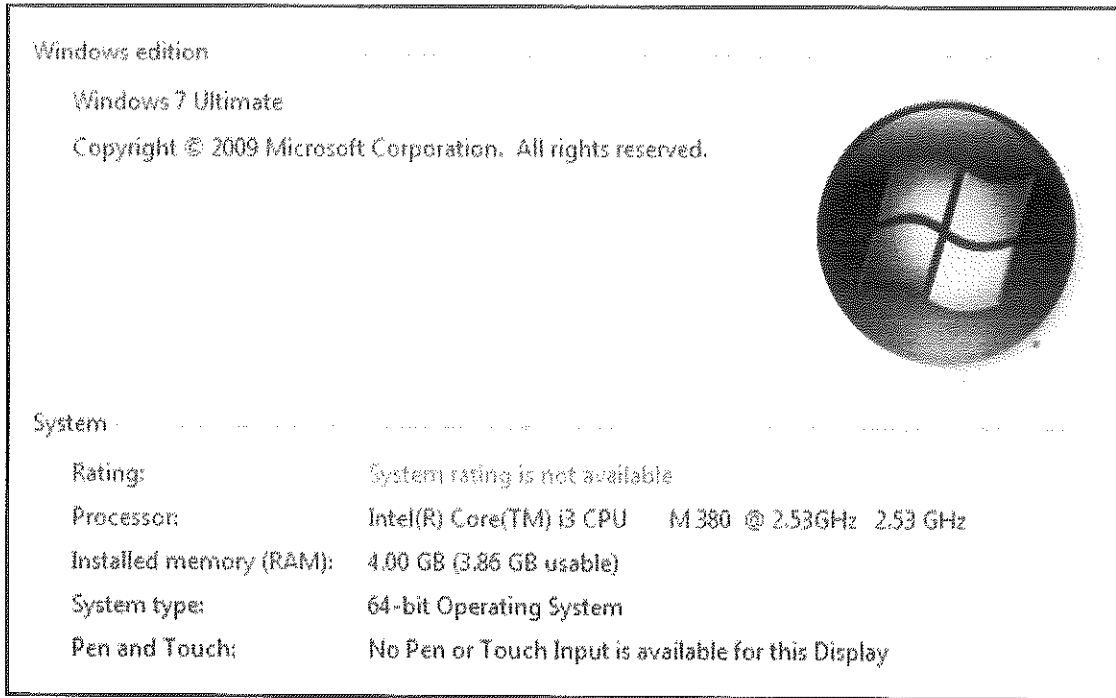
SECTION D**SHORT & LONG ANSWER QUESTIONS****[35 MARKS]**

- Microsoft Disk operating system, MS-DOS is a non-graphical command line operating system derived from 86-DOS that was created for IBM compatible computers. Discuss the purpose or the functions of the following DOS commands:
 - CHDIR (1 mark)
 - MD (1 mark)
 - CD\ (1 mark)
 - RD (1 mark)
 - DEL (1 mark)
- A certain computer can be equipped with 33,554,432 bytes of memory. Convert the mentioned bytes to the following units:
 - Megabytes (3 marks)
 - Bits (2 marks)
- What is CMOS and CMOS battery? (2 marks)
- What is the difference between interpreter and compiler? (2 marks)
- Discuss what it means to do a backup and why it is important? (2 marks)
- In your own words explain the three general types of programming languages with examples? (6 marks)
- Differentiate between the following pair of words:
 - Input and output device (2 marks)

b) Random Access memory (RAM) and Read-only memory (ROM) (2 marks)

c) Impact and non-impact printers (2 marks)

7.



From the information given above, answer the following question.

- i. System memory size (1 mark)
- ii. System software (1 mark)
- iii. Processing speed (1 mark)

8. State atleast two advantages of the computer system? (2 marks)

9. Give names of any two ports? (2 marks)

SECTION E

C++ PROGRAMMING

[25 MARKS]

1. Draw the flow chart of the given pseudocode: (4 marks)

```
Begin
  Enter height of Christmas tree
  Cost = height * 3.00
  Cost = cost + cost x 0.05
  Output cost
End
```

2. Determine the output for the following code segment. Assume that the header `iostream` and using namespace `std` is used.

i) `int main()` (2 marks)

```
{
    x = 10; y = 40;
    if (x >= 10)
    {
        if (y < 40) { y++; }
        else { y--; }
    }
    cout << x << " " << y << endl;
}
```

ii) `int main ()` (2 marks)

```
{
    int x;
    int y;
    x = 10;
    y = 2;
    cout << (x * y + 3)/ 3 << endl;
}
```

3. The following code should declare an integer variable and assign it the value 6. (2 marks)

```
int 2ndPosition
2ndPosition = 6;
```

4. Write a C++ program that calculates the area of a circle whose radius = 5.0 and PI = 3.14. (5 marks)

5. Write a C++ program that asks the user to enter three integers. The program should then examine for the largest integer entered and print it on the screen. (10 marks)

*****THE END*****