

**COMPUTER SCIENCE**

**30/06/2021**

**8:30 am - 11:30am**

**SENIOR FOUR END OF YEAR EXAMINATIONS, 2020/2021**

**SUBJECT: COMPUTER SCIENCE**

**COMBINATIONS:**

**MATHEMATICS- PHYSICS- COMPUTER SCIENCE (MPC)**

**MATHEMATICS-COMPUTER SCIENCE –ECONOMICS (MCE)**

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|  **/100** **Marks:** |

**DURATION: 3 HOURS**

**INSTRUCTIONS:**

All questions are compulsory (**100 marks**)

**Answer all questions (100 marks)**

*1)*Explain why it is not advisable to eat or drink in a computer lab. **(3marks)**

*2)*Discuss Characteristics of Random Access Memory (RAM) **(6 marks)**

1. Differentiate between the Servers and workstations. **(4 marks)**
2. Which of the following is designed to control the operations of a computer? Explain it. **(5 marks)**

a) Application Software
b) System Software
c) Utility Software
d) User

1. State four factors you would consider before installing computer software whether an operating system or application software. **(4 marks)**
2. Convert 101102 into a decimal number. **(4 marks)**
3. Why the truth table of an AND gate has four possible combinations?

 **(3 marks)**

1. List six functions of the operating system. **(6 marks)**
2. Write a C++ program to assign a value of 100.235 to a double variable and then convert it to int. **(6 marks)**

10) List five rules you would follow to write code using XHTML **(5 marks)**

11) Draw the truth table of AND Gates **(4 marks)**

1. Write a C++ program to print the value of the address of the pointer to a

 variable whose value is input from user. **(10 marks)**

1. List 10 components inside computer case. **(10 marks)**
2. Write an algorithm which receive a width and height of a rectangle and

 display its area and perimeter **(10 marks)**

 15) Explain major types of computer software, their uses, and examples.

 **(10 marks)**

 16) Write pseudocode to compare three numbers X, Y and Z in algorithm.

 **(10 marks)**

**MARKING GUIDES**

Comprehensive Assessment S4

*1)*Explain why it is not advisable to eat or drink in a computer lab. **(3marks)**

Ans

The food / drink may pour into sensitive computer parts causing clogging or rusting.

*2)*Discuss Characteristics of Random Access Memory (RAM) **(6 marks)**

 Answer

1. Data can be read (retrieved) and written (stored) in it.

2. RAM is a temporary (volatile) storage because its content disappears when the computer is switched off.

3. Its content is user defined i.e. the user dictates what is to be contained in the RAM.

The two main types of RAM are:

1. Differentiate between the Servers and workstations. **(4 marks)**

Answer

Server provides services to other computers on the network; Workstation used by the user, has limited processing power and requests services from the server.

1. Which of the following is designed to control the operations of a computer? Explain it. **(5 marks)**

a) Application Software
b) System Software
c) Utility Software
d) User

 **Answer:**

b) System Software

**Explanation:**

System Software is basically classified into two: System and application. System Software is designed to control the operations and extend the processing capability of a computer system.

1. State four factors you would consider before installing computer software whether an operating system or application software. **(4 marks)**

 Answer

Memory (RAM) capacity.

1. Free hard disk space.
2. Processor type and speed.
3. Graphics display.
4. Convert 101102 into a decimal number. **(4 marks)**

Answer:

The decimal equivalent number is given as:

1 × 24 + 0 × 23 + 1 × 22 + 1 × 21 + 0 × 20

= 16 + 0 + 4 + 2 + 0

= 2210.

1. Why the truth table of an AND gate has four possible combinations?

 **(3 marks)**

Answer

**->** It is because it has two entries making 22 = 4 possible combinations

1. List six functions of the operating system. **(6 marks)**

Answer

cheduling

 memory management

 resource control and management

job scheduling

input/output management

job sequencing

security.

1. Write a C++ program to assign a value of 100.235 to a double variable and then convert it to int. **(6 marks)**

Answer:

#include <iostream>

using namespace std;

int main()

{

 double x = 100.235;

 cout << (**int**)x << endl;

 return 0;

}

10) List five rules you would follow to write code using XHTML **(5 marks)**

 Answer

1. Write a DOCTYPE declaration at the start of the XHTML document.

2. All elements and attributes should be written in lower case e.g <body>.

3. Each opening tag must have an equivalent closing tag.

4. Nest all the tags properly.

5. Attribute values must be enclosed in quote marks e.g. <td rowspan = “3”>.

6. Elements such as <b> and <i> have been replaced by <strong> and <em> respectively.

11) Draw the truth table of AND Gates **(4 marks)**

Answer



1. Write a C++ program to print the value of the address of the pointer to a variable whose value is input from user. **(10 marks)**

Answer:

#include<iostream>

using namespace std;

int main()

{

 int x, \*y;

 cout << "Enter a number\n";

 cin >> x;

 y = &x;

 cout << "Value of the address of pointer of "<< x << " is "<< &y<<"\n";

 return 0;

}

1. List 10 components inside computer case. **(10 marks)**

Answer:

Motherboard

CPU/processor

RAM (random access memory)

Hard drive

Power supply unit

Expansion cards

Video card

Sound card

Network card

Fan

14) Write an algorithm which receive a width and height of a rectangle and display its area and perimeter **(10 marks)**

Answer

var a,b as double

Start

Write(“enter a rectangle width”)

Read(a)

Write(“enter a rectangle height”)

Read(b)

Write(“the rectangle area is:”,a\*b)

Write(“write the rectangle perimeter is:”,(a+b)/2)

end

15) Explain major types of computer software, their uses, and examples.

Answer: **(10 marks)**

System Software: System software coordinates the activities and functions of [hardware](http://www.artibeus.com/hardware-vs-software/) and software, and it controls the operations of computer hardware and provides an environment or platform for all the other types of software to work in. It is the most basic type of software in any computer system, which is essential for other programs, applications and the whole computer system to function.

System software examples: Microsoft Windows XP, Mac O S, Linux, Windows Vista, Ubuntu, device drivers, etc.

Application Software: Application software is what helps the user perform the tasks of his/her choice. They are non-essential software which are installed and run, depending upon the requirements, in the environment provided by the system software.

Application software examples: MS Office, OpenOffice, Media Players, MS Access, educational software, media development software, Antivirus software, etc.

Programming Software: Programming software is used to write, test, debug and develop other software programs and applications. The various programming language editors such as Eclipse – a Java language editor – appear under this category. They are used for creating both the system as well as application software.

Programming software examples: Turbo C, Xilinx, Kiel, compilers, debuggers, Integrated Development Environment (IDE), etc.

16) Write pseudocode to compare three numbers X,Y, and Z in algorithm.

 **(10 marks)**

Answer:

BEGIN

PRINT Enter x, y and z

READ x, y, z;

 IF x< y Then

 IF x<z = Then;

 least = x

ELSE

 least = z

ELSE IF y<z Then

least = y

 ELSE

 least = z

ENDIF

 PRINT least

 END