

BAYERO UNIVERSITY, KANO
FACULTY OF COMPUTING
DEPARTMENT OF INFORMATION TECHNOLOGY
2020/2021 – First Semester Examinations
ITC2203 – Information Technology in Business

Time Allowed: 2 Hours

Instructions: Answer any four (4) questions

1. a) Explain E-Commerce and describe how E-Commerce differs from E-Business. [5 marks]
b) Mention and explain the four major types of E-Commerce. [8 marks]
c) Describe the processes that can be enhanced in E-business. [4.5 marks]
2. a) Define supply chain management and illustrate diagrammatically the difference between Old Economy and New Economy relationships in supply chain management. [4 marks]
b) List and explain the resources that are required for a successful implementation of E-Commerce. [6 Marks]
c) Explain any five advantages of E-Commerce over traditional business. [7.5 marks]
3. a) With the aid of a diagram differentiate between Intranet and Extranet. [4 marks]
b) Define the Internet, and briefly outline the evolution of the internet. [3.5 marks]
c) i. Explain the four layers of TCP/IP. [6 marks]
ii. Briefly define the following: IP address, Domain name, POP3, Web browser. [4 marks]
4. a) What is good e-commerce security? [1.5 marks]
b) Explain all the main dimensions of E-Commerce Security. [8 marks]
c) Describe any three security threats that can be damaging for an E-Commerce environment, and any three solutions to tackle them. [8 marks]
5. a) To reduce security risks, e-commerce companies must create a unified corporate policy that considers the nature of the risks, the information assets that must be protected, the procedures and technology needed to handle the risk, as well as implementation and auditing systems. Explain the key steps to follow in developing a solid security plan. [7.5 marks]
b) Explain five major types of e-commerce payment systems in use today. [5 marks]
c) Draw a diagram illustrating how a typical E-Commerce transaction takes place when a customer purchases an item from a merchant's online store. [5 marks]
6. a) Define online marketing. [2.5 marks]
b) Outline three advantages and three disadvantages of online marketing to a business owner. [9 marks]
c) List and explain any three types of online marketing. [6 marks]

BAYERO UNIVERSITY, KANO
FACULTY OF COMPUTING
DEPARTMENT OF INFORMATION TECHNOLOGY
2020/2021 – First Semester Examinations
ITC2201 – *Introduction to Web Computing*

Time Allowed: 2 Hours

Instruction: Answer question one (1) and any other three (3) questions.

1. a) Write the HTML code that produces the form below: (*15 marks*)

Student Registration Form

First name:	<input type="text" value="First name"/>	Last name:	<input type="text" value="Last name"/>
Phone number:	<input type="text" value="Phone number"/>	Email address:	<input type="text" value="Email"/>
Gender	Female <input checked="" type="radio"/> Male <input type="radio"/>	Address:	<input type="text" value="Address"/>
Faculty:	<input type="text" value="Faculty of Computing"/>		
<input type="button" value="Register"/>			

- b) Use any of the styling methods to apply CSS on the form elements as it is above. (*10 marks*)
2. a) List and explain the available methods through which CSS is added to HTML elements. (*6 marks*)
b) State the advantages and disadvantages of the methods mentioned in 2(a) above. (*6 marks*)
c) State the most preferred of the methods discussed in 2(a) above and explain why it is the most preferred. (*3 marks*)
3. a) Write skeleton of a typical HTML page and briefly explain the purpose of each line. (*5 marks*)
b) Write the syntax of CSS rule and explain briefly the purpose of each line. (*5.5 marks*)
c) Explain the functions of each the following in web design/development: (*4.5 marks*)
i. HTML
ii. CSS
iii. JavaScript
4. a) What is the difference between frontend and backend web development? (*4 marks*)
b) Write the markup that produce the following: (*5 marks*)

₦100, ₦200, ₦500 & ₦1000 notes would be redesigned in January 2023.

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- c) Differentiate between unordered list and description list. Give an example in each case. (*6 marks*)

5. a) Write the output produced by the HTML code below: (7 marks)

```
<table border="1">
    <caption>Courses Table</caption>
    <thead>
        <th>Programs</th>
        <th>BSc. Computer Science</th>
        <th>BSc. Information Technology</th>
        <th>BSc. Software Engineering</th>
        <th>BSc. Information and Media Studies</th>
    </thead>
    <tbody style="text-align:center">
        <tr>
            <td rowspan="3"><strong>Courses</strong></td>
            <td colspan="3">MTH1301</td>
            <td></td>
        </tr>
        <tr>
            <td></td>
            <td colspan="2">ITC2201</td>
            <td>IMS2212</td>
        </tr>
        <tr>
            <td></td>
            <td></td>
            <td></td>
            <td></td>
        </tr>
    </tbody>
</table>
```

- b) Explain each of the following with example in each case: (3 marks)

- i. tag
- ii. element
- iii. empty element

- c) Explain how the web works. (5 marks)

6. a) Write the output of the HTML code below. (7 marks)

```
<p>
    Programs in the Department of Computer Science, BUK.
    <ol>
        <li>Department of Computer Science. </li>
        <ol type="i">
            <li>BSc. Computer Science</li>
            <li>MSc. Computer Science</li>
            <li>Postgraduate Diploma in Computer Science</li>
            <li>Masters in Computer Application</li>
        </ol>
    </ol>
</p>
```

- b) Assume that you have a picture saved with the name "*profile_picture.PNG*" in a folder named "*images*". Write the HTML code that uploads that picture on a web page. (3 marks)
- c) Write the HTML code that uploads a video with name "*event.mp4*" stored in the same folder as the picture in 5 (b) above. (5 marks)

5. a) Write the output produced by the HTML code below: (7 marks)

```
<table border="1">
    <caption>Courses Table</caption>
    <thead>
        <th>Programs</th>
        <th>BSc. Computer Science</th>
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            <td></td>
            <td></td>
            <td></td>
        </tr>
    </tbody>
</table>
```

- b) Explain each of the following with example in each case: (3 marks)
- tag
 - element
 - empty element
- c) Explain how the web works. (5 marks)

6. a) Write the output of the HTML code below. (7 marks)

```
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            <li>Postgraduate Diploma in Computer Science</li>
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        </ol>
    </ol>
</p>
```

- b) Assume that you have a picture saved with the name "*profile_picture.PNG*" in a folder named "*images*". Write the HTML code that uploads that picture on a web page. (3 marks)
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BAYERO UNIVERSITY KANO
FACULTY OF COMPUTING
DEPARTMENT OF SOFTWARE ENGINEERING
 2021/2022 First Semester Examination
 SWE2313 - Computer Programming I

Time Allowed: 2 Hours 30 Minutes

Instructions: Answer any four (4) Questions

- | | |
|--|--|
| 1. (a) Explain the followings: i. GUI ii. Toolbox Window iii. Solution Explorer
(b) Explain how to change the text property of a Label both during design and run time.
(c) What is the difference between Me.Close() and Me.Hide().
(d) Explain three ways in which a control can be added to a form. | [6marks]
[3marks]
[3marks]
[3marks] |
| 2. (a) Draw the GUI of a simple calculator.
(b) Write the codes that will perform the following tasks from (a):
i. Display 1 on the calculator textbox when button with text property "1" is pressed.
ii. Clear the screen when "C" button is pressed.
iii. Display the final result when "=" sign button is pressed. | [9marks] |
| (c) Describe one method of converting string to number in visual basic. | [3marks] |
| 3. (a) Describe two ways to add items to a ListBox.
(b) Write a program that will display list of the following characters in a Listbox {Mario, Luigi, Peach, Toad}. Provide a textbox that allows user to insert a new character when button Add is clicked. Write the program code, and populate the listbox in run time.
(c) Sketch the GUI of the application in (b). | [9marks]
[3marks] |
| 4. (a) Using any selection structure write the portion of a program that will display a grade given the score:
A - 100 to 70 B - 65 to 69 C - 60 to 64 D - 50 to 59 E - 40 to 49
F - 0 to 39. Also display to the user if there is invalid entry to the score (Use Message Box for the error message).
(b) Sketch the program.
(c) Describe two if statements. | [10marks]
[2marks]
[3marks] |
| 5. (a) Correct the following code:
<pre>If = operation = "+" Then total = value1 + value2; ElseIf operation = / "-" Then total = value1 - value2 ElseIf operation // "*" Then total = value1 * value2 ElseIf operation = "/" Then; total = value1 / value1; End If</pre> | [4marks] |
| (b) Write a program that takes in the user's Name, Level, Department, State, and Course. The user is to enter only his name. Other inputs are options for him/her to select. (Hint: Use Listbox, ComboBox, CheckBox, and RadioBox for the option selection). The program should display the following message in any display control of your choice. " <i>My Name is Name I study course in the department of Department I live in state</i> ". Populate the listbox and combobox in run time. | [9marks] |
| (c) Draw the GUI of the Program. | [2marks] |
| 6. (a) Write a program that will display list of items in a listbox and add an item to an empty listbox when a user clicks on an item in the first listbox. | [5marks] |

- (Handwritten marks)*
- (b) List and explain three repetition structures in visual basic. [4marks]
- (c) Write visual basic function that will find the maximum of two numbers and return the maximum value. [6marks]

Wishing you all the best

Friday: 2nd December, 2022



BAYERO UNIVERSITY, KANO
FACULTY OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE

2020/2021 First Semester Examinations

CSC2323/CSC2321 - Discrete Structures

Time Allowed: 3 Hours

Instruction: Answer any five (5) questions

1. a. Check the validity of the following argument

$$\begin{aligned} p \rightarrow (q \vee r) \\ \neg q \wedge \neg r \end{aligned}$$

$$\therefore \neg p$$

- b. Verify the following logical equivalence using truth table

$$\neg p \wedge (q \vee \neg r) \equiv (\neg p \wedge q) \vee (\neg p \vee r)$$

2. a. Prove by induction that $4^n + 6n - 1$ is divisible by 3 for all $n \in \mathbb{N}$

- b. Prove the following by induction

$$\sum_{i=1}^n \left(\frac{1}{i * (i+1)} \right) = \frac{n}{n+1}$$

3. a. Test the validity of the following argument:

If I study, then I will pass mathematics.

If I do not play basketball, then I will study.

But I failed mathematics.

∴ Therefore, I must have played basketball

- b. Check whether each of these is a tautology, a contradiction or neither

i. $(\neg p \wedge r) \vee (r \vee \neg p)$

ii. $(p \vee r) \wedge (\neg p \vee \neg r)$

iii. $(r \vee p) \vee (\neg p \wedge \neg r)$

4. a. Consider the following matrices

$$B = \begin{pmatrix} 5 & 0 \\ 7 & -1 \end{pmatrix}$$

$$C = \begin{pmatrix} 1 & -3 \\ 4 & 2 \\ 6 & -5 \end{pmatrix}$$

$$D = \begin{pmatrix} 3 & -1 & -8 \\ 7 & 4 & 9 \end{pmatrix}$$

Find

i. $2C - (3D)^T$

ii. $BD - C^T$

b. Find the Determinant of the matrix below

$$A = \begin{pmatrix} 1 & 3 & 0 \\ 2 & 7 & -3 \\ 3 & 0 & -5 \end{pmatrix}$$

5. a. Check whether the following matrix is a singular matrix or not

$$Z = \begin{pmatrix} 1 & 0 & 2 \\ 3 & 4 & -2 \\ 2 & 1 & 3 \end{pmatrix}$$

- b. Use Gaussian Elimination Method to solve the following system of linear equations

$$x_1 + x_2 - x_3 = 7$$

$$x_1 - x_2 + 2x_3 = 3$$

$$2x_1 + x_2 + x_3 = 9$$

6. a. Show that *congruences modulo m* is an equivalence relation
b. Use the Sieve of Eratosthenes to find the list of all the prime numbers between 50 and 150

7. a. Using Euclidean Algorithm, find the greatest common divisor of the following
i. 270 and 192
ii. 1424 and 3084
b. Write the gcd in (ai) as a linear combination of its respective integers



BAYERO UNIVERSITY, KANO
FACULTY OF COMPUTER SCIENCE AND INFORMATION
TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE

2020/2021 First Semester Examinations

CSC2301 - (Foundations of Sequential Program)

Instruction: Answer any five (5) questions

Time Allowed: 2 Hours

1.

- Convert **6DB** from its hexadecimal form to binary form, generate the two's compliment of the resultant binary number and then convert it to decimal.
- Subtract **B = 101010** from **A = 110101**.
- Suppose Endianness is applied while storing the bytes of the hexadecimal number **0FOCOA0B**, show with the aid of diagram, how would they be arranged in both types of Endianness.

2.

- "*Programming Languages vary in the level of abstraction they provide from the hardware.*" Explain this statement with the aid of diagram.
- State the four fields in a typical Assembly Language instruction and explain the function of each.
- Show with the aid of diagram, how the four general purpose registers of Intel processor grew to 32-bit registers.

3.

- What do you understand by Inline or Embedded Assembly?
- What are the valid addition operations in Assembly language?
 - Why are statement such as **add mem, mem** not valid in Assembly Language? Show with the aid of diagram the addition of variables x and y into z. i.e $z = x + y$.
- State the difference between **mul** and **imul** instruction
 - What are the two valid operations in one-operand **imul**. Explain how they work.

4.

- Elaborate how division is carried out in Assembly Language.
- Write a complete Assembly Language program to be executed on a 386 Intel Processor that declares five integer variables, initializes the first three with values of your choice. Use instructions to increment the first, decrement the second, and negate the third. Add the first two and store the result in the fourth variable. Subtract third from the second and store the result in the fifth variable.

5.

- a. What are the three major sections of Central Processing Unit (CPU)? Describe the function of each of them.
- b.
 - i. State and explain the three main Buses inside a Microcomputer.
 - ii. Consider a Computer Memory with address bus of nine address lines. If each memory location can hold eight bits, calculate the number of addressable memory location and the total size of the memory.
- c. Explain the two types of CPU Technologies and state their differences in a tabular form.

6.

- a.
 - i. Consider an early generation microcomputer that has 16-bit data bus and each memory location of this system holds two bytes (16-bits), how many times does this CPU need to access memory to read the word "BOOKCASE"?
 - ii. Explain the steps involved for a CPU to execute one instruction.
- b. Explain the two types of CPU Architecture.

7.

- a. With the aid of a diagram, explain the concept of Pipelining in Instruction Execution.
- b. Explain the function of Programmable I/O Interrupt.
- c. Elaborately, explain the Concept of DMA (Direct Memory Access).

BAYERO UNIVERSITY, KANO

FACULTY OF COMPUTING

DEPARTMENT OF SOFTWARE ENGINEERING

2021/2022 First Semester Examination

SWE 2301/3301: Introduction to Software Engineering

Instructions: Attempt any five (5) Questions

Time Allowed: 3 Hours

-
1. (a) Define Software Engineering. Briefly explain why it was started as a discipline? (5marks)
(b) Write short notes on the following:
i. customized products ii. Modularity iii. Heterogeneity
(c) With the different software diversities, mention three (3) factors to consider when choosing tools and methods to develop software. (3marks)

 2. (a) What is a Software Process Model? List its two (2) broad categories. (4marks)
(b) Explain any two (2) software process models. (8marks)
(c) Mention four (4) common activities that are common to all SDLCs. (2marks)

 3. (a) Why do we have two (2) types of Software Requirements? (4marks)
(b) Explain the following:
i. Requirements discovery ii. Requirements classification iii. Requirements management
(c) Mention some problems of requirement elicitation and analysis. (3marks)

 4. (a) Explain any two (2) architectural patterns. (5marks)
(b) Write short notes on the following:
i. Design models ii. Host target development iii. Software Reuse
(c) Mention some common activities in object oriented design process (2marks)

 5. (a) Why do businesses use an open source development approach? Give two (2) examples of open source software. (5marks)
(b) Explain the three (3) different types of software license in brief (6marks)
(c) What is an Integrated Development Environment? (3marks)

 6. (a) Define Software Testing. Briefly explain the software testing goals. (5marks)
(b) Explain the following:
i. Development testing ii. Performance testing iii. Acceptance testing
(c) What are the main differences between release testing and system testing? (2marks)

 7. (a) What are the importance of Software Evolution? (3marks)
(b) Write short notes on the following:
i. Change Implementation ii. Corrective maintenance iii. Perfective maintenance
(c) Differentiate between software re-engineering and software refactoring (4marks)