DEPARTMENT *of* COMPUTING
College of Business & Technology
EAST TENNESSEE STATE UNIVERSITY

CSCI 1100 – Using Information Technology
Comprehensive Study Guide

I. Topics

Information Literacy

- Evaluating online information
- Critical thinking in the digital age
- Navigating digital platforms and interfaces
- Understanding digital trends and their impacts

Tech Product Literacy

- Basic computer components
- Mobile device hardware
- Peripheral devices and connectivity
- Troubleshooting common hardware issues

Introduction to Programming

- Basic programming concepts
- Common programming languages overview
- Simple algorithm design
- Debugging basics

Web Literacy

- Roles of HTML, CSS, and browsers
- HTML's function in webpage structure

- CSS's role in styling webpages
- Browser responsibilities in rendering webpages
- Developer tools for inspecting and debugging

The Connected World

- Basic network concepts
- Types of networks (LAN, WAN, etc.)
- Internet protocols
- Cloud computing basics

Data Literacy

- Understanding data sources and data types.
- Understanding the context in which data is used.
- Basic knowledge of quantitative and qualitative data, the DIKW model, and how it relates to the data lifecycle.
- Accurately interpreting trends and behaviors and making informed inferences.
- Storytelling with data, how to use common chart types, and how charts are commonly manipulated.

Digital Content Creation

- Types of digital content (text, images, video, audio)
- Basic principles of design
- Content creation tools and platforms
- Copyright and licensing for digital content

Artificial Intelligence and Machine Learning

- Basic AI concepts and terminology
- Machine learning algorithms and applications
- Ethical considerations in AI development
- AI's impact on various industries

Cybersecurity and Privacy

- Common cyber threats
- Best practices for online security
- Data privacy concepts
- Password management and two-factor authentication

Emerging Technologies

- Overview of current emerging tech (e.g., IoT, blockchain, VR/AR)
- Potential impacts on society and industry
- Ethical considerations of new technologies
- Future trends in technology

Digital Citizenship

- Online etiquette and communication
- Digital footprint awareness
- Responsible use of social media
- Copyright and fair use in the digital world

Tools For Technology: Microsoft Office Suite

Microsoft Word

- Basic document operations (saving, file formats)
- Text formatting and styling
- Page layout and orientation
- Find and Replace functionality
- Headers, footers, and page numbers
- Using grammar checking, citation tooling, and table of contents.

Microsoft PowerPoint

- Creating and editing slides
- Adding and formatting text, images, and multimedia
- Applying themes and designs
- Customizing the design through the Slide Master
- Applying transitions and animations
- Presenting slideshows

Microsoft Excel

- Basic spreadsheet operations
- Entering, formatting, and transforming data
- Using formulas and functions
- Creating charts and graphs

II. Sample Questions

The sets of multiple-choice questions provided below are similar in content to questions that are featured on the proficiency exam, however, these question sets do not reflect the complete set of concepts and knowledge covered in the topics we teach in CSCI 1100 or that we feature in the proficiency exam. While reviewing these questions can contribute to your success on the proficiency exam, familiarity with the topics as they are described above is necessary for that success.

Information Literacy Questions

1. What is the term for the ability to identify false or misleading information online?
   a) Digital detective
   b) Information literacy
   c) Cyber skepticism
   d) Web wisdom

2. According to the SIFT method, what should you do first when encountering potentially questionable information?
   a) Immediately investigate the source
   b) Stop and check your emotional response
   c) Find better coverage from other sources
   d) Trace the information or claim back to its origin

3. According to research on social media, which type of information spreads faster?
   a) Factual, well-researched content
   b) Content from verified accounts only
   c) Emotional content, regardless of accuracy
   d) Content with multiple sources cited

4. Which SIFT step involves opening new tabs to search for information about the source?
   a) Stop

b) Investigate the source

c) Find better coverage

d) Trace claims, quotes, and media to the original context

5. When applying the "Trace" step of SIFT, what are you primarily trying to do?

a) Follow the author's social media accounts

b) Find the original source of claims, quotes, or media

c) Track how many times the information has been shared

d) Trace the IP address of the website

Information Literacy Answer Key

1. b) Stop, Investigate, Find, Trace
2. b) Stop and check your emotional response
3. c) Emotional content, regardless of accuracy
4. b) Investigate the source
5. b) Find the original source of claims, quotes, or media

Tech Product Literacy Questions

1. What is RAM in a computer?

a) Random Access Memory

b) Read-Only Memory

c) Rapid Application Management

d) Remote Access Module

2. What does CPU stand for?

a) Computer Processing Unit

b) Central Processing Unit

c) Control Processing Unit

d) Core Processing Unit

3. Which of these is an input device?
   a) Monitor
   b) Printer
   c) Mouse
   d) Speakers

4. What is the function of a GPU?
   a) To process and render graphics
   b) To store data long-term
   c) To connect to the internet
   d) To run the operating system

5. What is the purpose of a heat sink in a computer?
   a) To generate heat
   b) To store data
   c) To dissipate heat from components
   d) To boost processing speed

Tech Product Literacy Answer Key

1. a) Random Access Memory
2. b) Central Processing Unit
3. c) Mouse
4. a) To process and render graphics
5. c) To dissipate heat from components

Introduction to Programming Questions

1. What will be the value of *y* after executing this Python code?
   ```
   x = 10
   y = x + 5
   ```

x = 20

a) 10

b) 15

c) 20

d) 25

2. What data type will *result* be after this operation?

```
result = "Hello" + " " + "World"
```

a) int

b) float

c) str

d) bool

3. What will this Python code output?

```
numbers = [1, 2, 3, 4, 5]
print(numbers[2])
```

a) 1

b) 2

c) 3

d) 4

4. You need to find the largest number in a list of numbers. Which approach demonstrates good problem decomposition?

a) Write one complex function that does everything at once

b) Break it down: start with the first number, then compare each remaining number one by one

c) Randomly guess which number might be largest

d) Sort the entire list first, then take the last element

5. When designing the core data structure for a student registration system, which attributes best represent an abstract model of a student?

a) Student's social media handles and music playlist

b) Student's travel history and recent purchases

c) Student ID, full name, academic program, and registered courses

d) Student's handwriting sample and locker number

Introduction to Programming Answer Key

1. b) 15
2. c) str
3. c) 3
4. b) Break it down: start with the first number, then compare each remaining number one by one
5. c) Student ID, full name, academic program, and registered courses

Web Literacy Questions

1. What does HTML stand for?
   a) Hyper Text Markup Language
   b) High Tech Modern Language
   c) Hyper Transfer Markup Language
   d) Home Tool Markup Language

2. Which language is primarily used for styling web pages?
   a) JavaScript
   b) Python
   c) CSS
   d) PHP

3. What's the purpose of the <body> tag in HTML?
   a) To define the document's head section
   b) To create a hyperlink
   c) To contain all the visible contents of a web page

d) To define a paragraph

4. Which tool in web browsers allows developers to inspect and modify HTML and CSS in real-time?
   a) Task Manager
   b) Developer Tools
   c) Plugin Manager
   d) Network Monitor

5. What does CSS stand for?
   a) Computer Style Sheets
   b) Creative Style Sheets
   c) Cascading Style Sheets
   d) Colorful Style Sheets

Web Literacy Answer Key

1. a) Hyper Text Markup Language
2. c) CSS
3. c) To contain all the visible contents of a web page
4. b) Developer Tools
5. c) Cascading Style Sheets

The Connected World Questions

1. What does IP stand for in networking?
   a) Internet Protocol
   b) Internal Processing
   c) Information Package
   d) Integrated Platform
2. Which device is primarily used to connect multiple devices within a local network?
   a) Modem

b) Switch

c) Gateway

d) Firewall

3. Which of the following factors can help improve a slow internet connection at home?

   a) Moving closer to your wireless router

   b) Upgrading your computer's hard drive

   c) Installing more RAM in your device

   d) Changing your computer's wallpaper

4. What is a key advantage of streaming video content compared to downloading entire files?

   a) Streaming uses more storage space on your device

   b) Streaming allows you to start watching content immediately

   c) Streaming requires faster internet speeds

   d) Streaming provides better video quality

5. What does LAN stand for in networking terminology?

   a) Large Area Network

   b) Local Area Network

   c) Linked Access Network

   d) Limited Access Node

The Connected World Answer Key

1. a) Internet Protocol
2. b) Switch
3. a) Moving closer to your wireless router
4. b) Streaming allows you to start watching content immediately
5. b) Local Area Network

Data Literacy Questions

1. Which of the following best describes the difference between quantitative and qualitative data?
   a) Quantitative data is numerical, qualitative data is descriptive
   b) Quantitative data is always more reliable than qualitative data
   c) Qualitative data can be easily counted, quantitative data cannot
   d) There is no significant difference between the two

2. In the DIKW model, what does the "W" stand for?
   a) Work
   b) Wisdom
   c) Writing
   d) Workflow

3. When interpreting a trend in data, which of the following is most important to consider?
   a) The aesthetic appeal of the chart
   b) The source and context of the data
   c) The opinions of colleagues
   d) The most recent data point only

4. Which chart type is most appropriate for showing the composition of a whole?
   a) Line chart
   b) Scatter plot
   c) Pie chart
   d) Bar graph

5. What is a common way that charts can be manipulated to mislead?
   a) Using appropriate scales on axes
   b) Including all relevant data points

c) Truncating the y-axis to exaggerate differences

d) Using colors consistently

Data Literacy Answer Key

1. a) Quantitative data is numerical, qualitative data is descriptive
2. b) Wisdom
3. b) The source and context of the data
4. c) Pie chart
5. c) Truncating the y-axis to exaggerate differences

Digital Content Creation Questions

1. Which of these is NOT a common type of digital content?
   a) Blog posts
   b) Infographics
   c) Podcasts
   d) Faxes

2. Which of the Four C's of Content creation helps make an abstract concept like "liberty" easier to conceptualize?
   a) Callbacks
   b) Concrete
   c) Chunks
   d) Curiosity

3. When designing a website for adults over 45 years of age, you should NOT:
   a) Use a restrained, but meaningful color palette
   b) Use a visually complex layout to add interest
   c) Ensure there is high contrast between foreground and background
   d) Leave ample spacing between navigation links and sections of each webpage

4. Which of these software tools or platforms would NOT be suitable for creating an online digital portfolio?
   a) WordPress
   b) Google Sites
   c) Microsoft Word
   d) Adobe Portfolio

5. What is a call-to-action (CTA) in digital content?
   a) A phone call to discuss content
   b) An instruction to the audience to take a specific action
   c) A type of video content
   d) A method of content encryption

Digital Content Creation Answer Key

1. d) Faxes
2. b) Concrete
3. b) Use a visually complex layout to add interest
4. c) Microsoft Word
5. b) An instruction to the audience to take a specific action

Artificial Intelligence and Machine Learning Questions

1. What is a key difference between artificial intelligence and human intelligence?
   a) AI can process information much faster than humans
   b) AI has emotions while humans do not
   c) AI can only work with numbers while humans work with words
   d) AI is always more accurate than human intelligence

2. In machine learning, what happens if the training data contains biased information?
   a) The model will automatically correct the bias
   b) The model may learn and perpetuate those biases

c) The model will refuse to train

d) The bias will be eliminated during the prediction phase

3. Which of these descriptions accurately characterizes the *first* step in the 3-step machine learning process?

   a) Training: Algorithm learns patterns from training data through iterative improvement

   b) Data Collection: Gathering relevant, representative datasets for training and inference

   c) Induction: Formulating a general conclusion from specific observations or instances

   d) Prediction: Making predictions on new, unseen data with performance evaluation

4. Why is "explainable AI" important in healthcare applications?
   a) It makes the AI run faster
   b) It reduces the cost of the AI system
   c) It allows doctors to understand how the AI reached its conclusions
   d) It prevents the AI from making mistakes

5. Which of the following is an example of Natural Language Processing (NLP)?
   a) A robot navigating through a room
   b) A computer recognizing faces in photos
   c) A chatbot understanding and responding to customer questions
   d) A program calculating mathematical equations

Artificial Intelligence and Machine Learning Answer Key

1. a) AI can process information much faster than humans
2. b) The model may learn and perpetuate those biases
3. b) Data Collection
4. c) It allows doctors to understand how the AI reached its conclusions

5. c) A chatbot understanding and responding to customer questions

Cybersecurity and Privacy Questions

1. What is phishing?
   a) A type of fishing sport
   b) An attempt to obtain sensitive information by disguising as a trustworthy entity
   c) A method of encrypting data
   d) A type of computer virus

2. What does two-factor authentication provide?
   a) Faster internet speed
   b) Better graphics quality
   c) An extra layer of security
   d) Automatic software updates

3. What is a firewall?
   a) A physical wall to protect against fire
   b) A security system that monitors and controls network traffic
   c) A type of computer virus
   d) A backup power system

4. What does HTTPS stand for?
   a) Hyper Text Transfer Protocol Secure
   b) High Tech Transfer Protocol System
   c) Hyper Text Transmission Protocol Service
   d) Home Transfer Protocol Secure

5. What is a VPN used for?
   a) Video Processing Network

b) Virtual Private Network

c) Visual Programming Navigation

d) Vital Program Notification

Cybersecurity and Privacy Answer Key

1. b) An attempt to obtain sensitive information by disguising as a trustworthy entity
2. c) An extra layer of security
3. b) A security system that monitors and controls network traffic
4. a) Hyper Text Transfer Protocol Secure
5. b) Virtual Private Network

Emerging Technologies Questions

1. What is the Internet of Things (IoT)?

   a) A new version of the internet

   b) A network of physical objects embedded with sensors and software

   c) A type of social media platform

   d) A cloud storage service

2. What is blockchain primarily known for?

   a) A type of computer hardware

   b) A social media platform

   c) A distributed ledger technology

   d) A programming language

3. What does VR stand for in technology?

   a) Very Rapid

   b) Virtual Reality

   c) Visual Rendering

   d) Variable Resolution

4. What is edge computing?
   a) A type of computer monitor
   b) Processing data near the source of data generation
   c) A method of sharpening digital images
   d) A type of internet connection

5. What is quantum computing?
   a) Very fast traditional computing
   b) Computing using quantum-mechanical phenomena
   c) A type of cloud computing
   d) A method of cooling computer processors

Emerging Technologies Answer Key

1. b) A network of physical objects embedded with sensors and software
2. c) A distributed ledger technology
3. b) Virtual Reality
4. b) Processing data near the source of data generation
5. b) Computing using quantum-mechanical phenomena

Digital Citizenship Questions

1. What is a digital footprint?
   a) A measure of computer processing power
   b) The trail of data you leave online
   c) A type of computer virus
   d) A digital signature

2. What does Creative Commons provide?
   a) A platform for creating digital art

b) A set of licenses for sharing and using creative work

c) A social media network for artists

d) A software for editing videos

3. What is cyberbullying?

a) A type of computer virus

b) The use of digital technologies to deliberately upset someone

c) An online gaming strategy

d) A method of digital marketing

4. What is netiquette?

a) A type of internet connection

b) Rules for polite behavior online

c) A website building tool

d) An antivirus software

5. What does it mean to be a good digital citizen?

a) Spending all your time online

b) Having the fastest internet connection

c) Using technology responsibly and respectfully

d) Owning the latest gadgets

Digital Citizenship Answer Key

1. b) The trail of data you leave online
2. b) A set of licenses for sharing and using creative work
3. b) The use of digital technologies to deliberately upset someone
4. b) Rules for polite behavior online
5. c) Using technology responsibly and respectfully

Microsoft Word Questions

1. Which tab would you use to change the page orientation?
   a) Home
   b) Insert
   c) Layout
   d) Review

2. What is the default file extension for Microsoft Word documents?
   a) .doc
   b) .docx
   c) .txt
   d) .rtf

3. Where can you find the 'Find and Replace' feature?
   a) Home tab
   b) Insert tab
   c) Review tab
   d) View tab

4. Which view shows your document as it would appear when printed?
   a) Draft
   b) Web Layout
   c) Print Layout
   d) Outline

5. How can you quickly apply the same formatting to multiple parts of your document?
   a) Copy and Paste
   b) Format Painter
   c) Style Gallery

d) Quick Format

Microsoft Word Answer Key

1. c) Layout
2. b) .docx
3. a) Home tab
4. c) Print Layout
5. b) Format Painter

Microsoft PowerPoint Questions

1. Which view allows you to see all your slides at once in thumbnail form?
   a) Normal view
   b) Slide Sorter view
   c) Reading view
   d) Slide Show view

2. What is the term for the visual transition between slides?
   a) Animation
   b) Morph
   c) Transition
   d) Progression

3. Which feature allows you to create a non-linear presentation?
   a) Slide Linking
   b) Hyperlinks
   c) Action Buttons
   d) All of the above

4. What's the best way to ensure your presentation is consistent in style?

a) Manually format each slide

b) Use a Theme

c) Copy and paste formatting

d) Use only default layouts

5. Which view is best for adding speaker notes to your slides?

a) Normal view

b) Slide Sorter view

c) Notes Page view

d) Outline view

Microsoft PowerPoint Answer Key

1. b) Slide Sorter view
2. c) Transition
3. d) All of the above
4. b) Use a Theme
5. c) Notes Page view

Microsoft Excel Questions

1. What's the correct way to start a formula in Excel?

a) =

b) +

c) -

d) *

2. Which function would you use to find the highest value in a range of cells?

a) AVERAGE

b) SUM

c) MAX

d) COUNT

3. What does the '$' symbol do when used in a cell reference?
   a) Adds a currency format
   b) Makes the reference absolute
   c) Indicates a percentage
   d) Allows text entry

4. Which chart type is best for showing parts of a whole?
   a) Line chart
   b) Bar chart
   c) Pie chart
   d) Scatter plot

5. What's the term for a predefined formula in Excel?
   a) Equation
   b) Function
   c) Calculation
   d) Algorithm

Microsoft Excel Answer Key

1. a) =
2. c) MAX
3. b) Makes the reference absolute
4. c) Pie chart
5. b) Function