Unit 1 – ICD2O – Hardware & Network Intro

Sample Test: September 17, 2025

Name: Gorski

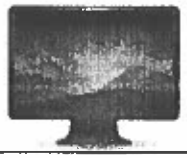
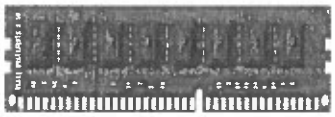
Total	%	Knowledge	Communication	Application	Thinking
(82)	(100)	(24)	(23)	(20)	(15)

Knowledge

1. What does IPOMS stand for? /1

Input	Processing	Output	Memory	Storage

2. Identify each of the following: /5

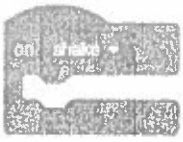




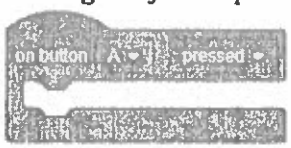

Fan	Screen	RAM	CPU	HD

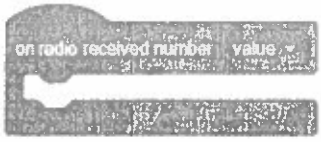
3. Classify each piece of hardware as input, output or storage. /6

(a) Hard Drive	input	output	storage	(d) Camera	input	output	storage
(b) DVD	input	output	storage	(e) Speakers	input	output	storage
(c) Microphone	input	output	storage	(f) SD Card	input	output	storage

4. Identify the part of the Microbit's hardware that is changed by each piece of code. /8



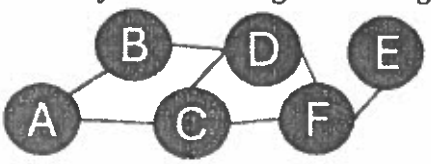




accelerometer	microphone	button A	Radio Antenna

LEDs	RAM	edge connector	Speaker

5. Identify the following in this diagram. /4



# Nodes	# Edges	Degree of Node B	Degree of Node D
6	7	2	3

Communication

6. Identify the term from the description. /10

Printer	(a)	An output device that produces a paper copy.
Keyboard	(b)	An input device for letters and words.
Touchscreen	(c)	A device that is both input AND output.
Mother board	(d)	The board that holds the CPU, RAM and ROM.
Euler Path	(e)	On a graph, a path travelling over all edges once, never repeating.
E-Waste	(f)	When you throw computers away, they become this.
18 months	(g)	According to Moore, the time for computing power to double.
Snap Circuits	(h)	Used in class, a set of circuits that can easily be connected.
Google, Apple ...	(i)	A company with a large data centre.
Copper, Gold, Silver	(j)	A metal used to build a computer.

7. Identify the ergonomic issue caused by each clue. /5

(a) Using your headset at max volume.	(b) Typing on a keyboard at a strange angle.	(c) Using a Nintendo console without a break.	(d) Texting for hours and hours each day.	(e) Using your phone right before you go to bed.
Ringing Ears	Carpal Tunnel	Nintendo thumb	Texter's Finger	Trouble Sleeping

8. A student has written a response to "Why should you recycle your computer?" Mark their response. /2

You should recycle your computer because it is toxic. If you throw your computer away, toxins in the hardware pollute rainwater. This harmful water will become drinking water for nearby animals. However, this pollution can be prevented by recycling your computer properly. Therefore, you should recycle your computer to reduce pollution, thus helping to preserve the biodiversity in nature.

What mark did they get? 3 /6

Check off the points that apply to the paragraph.

- ☑ The POINT is first. It uses the word because.
- ☑ The reason in the POINT is concise and clear. It relates to the detail that follows it.
- ☑ The DETAIL has some examples or details. Some attempt is made to support an idea.
- ☐ The DETAIL is very specific. It has a specific name, number, or detailed example. No off-topic material.
- ☐ The ANALYSIS relates the point to the detail. It is not jumbled up with the detail: it is at the end.
- ☐ The ANALYSIS is excellent. It adds to the paragraph content.

9. Which of the opening applications (Cochlear Implants, Alexa, DaVinci, ESports) was the most interesting? Use specific details to support your answer. /6

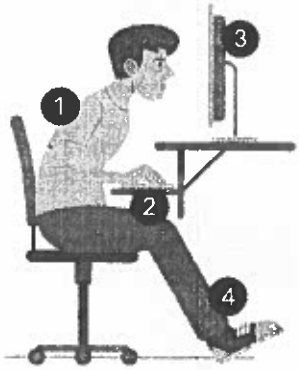
Da Vinci Surgical Robots are the most interesting because they increase a surgeon's precision. Using the robot, it is possible to fold a paper crane that is smaller than a dime. It is fascinating to me that a robot can allow humans to do things on such a tiny scale that was previously impossible.

Application

10. Circle all pieces of hardware that apply to the description. /6

(a)	On the motherboard.	RAM	both ROM	HD
(b)	Where you save your work.	RAM	ROM	HD
(c)	Boots the computer.	RAM	ROM	HD
(d)	Where open pictures are held.	RAM	ROM	HD
(e)	The smallest storage capacity.	RAM	ROM	HD
(f)	Works with the CPU to do calculations.	RAM	ROM	HD

11. For each number on the diagram, how would you fix the ergonomic problem? /4

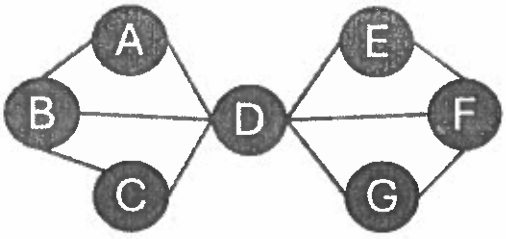


#	Fix
1	Back pain – improve posture, sit up straight
2	Carpal Tunnel – flatten & straighten hands while typing
3	Eyestrain – position monitor better
4	Numb legs – raise chair / or use a foot rest.

12. Match the users with the type of the computer. /3

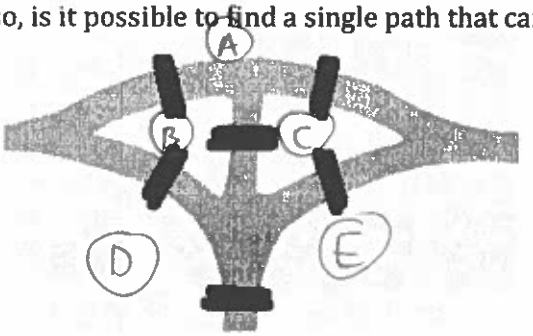
User Categories:	**Computer A**	**Computer B**	**Computer C**
Film Editor Regular Home User Students at School	RAM: 4 GB CPU: 2 GHz HD: 1 TB	RAM: 1 GB CPU: 1.6 GHz HD: 256 GB	RAM: 8 GB CPU: 3.4 GHz HD: 2 TB
Match:	Regular Home User	Students at School	Film Editor

13. Identify the following in this graph. /3



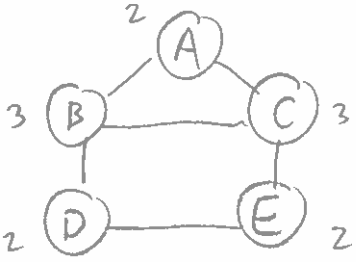
a) # Nodes with Odd Degree	2
b) # Nodes with Even Degree	5
c) Has an Euler Path? (y/n)	Y

14. This is a map of a city with some bridges crossing a river. Draw a graph to represent this situation. Also, is it possible to find a single path that can cross all bridges once without repeating? /4



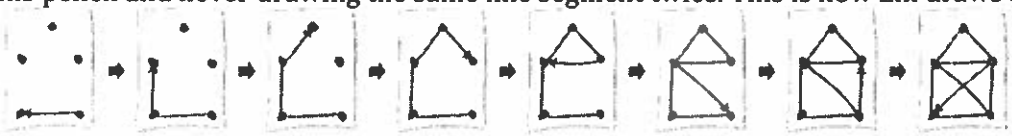
Does it have a path of all bridges? (y/n) ... Y ...

☐ Below, draw a graph to represent the city.



Thinking

15. Zhi creates pictures by drawing dots and then connecting them with line segments in one motion, never picking up his pencil and never drawing the same line segment twice. This is how Zhi draws a house:

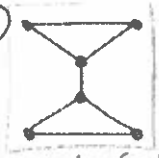


Euler path

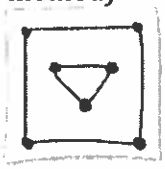
Which of the following pictures can Zhi draw? (circle all that can be drawn using this method) /2

(a) 

(b) 

(c) 

only Euler path

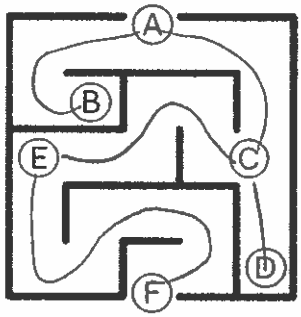
(d) 

16. There are 5 animal homes connected by paths with a carrot on each path, as shown. /2

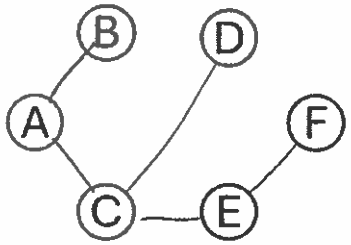
Rina Rabbit lives in house R. It takes Rina 1 minute to walk on any path between two homes. Which of the following routes allows Rina to pick up all the carrots and return home in the shortest amount of time? (circle)

(A) R S T P Q S P R
(B) R P Q S R P T S P R
(C) R S P Q P T S R
(D) R P Q S T P R

17. Draw this maze using a graph, then answer the questions. /5



Add edges (straight lines):



In a maze, what do the nodes represent?

end, start, connection points

In a maze, what do the edges represent?

paths between points

Mazes aren't Euler paths. Why not?

there are many paths in a maze, not one, some are dead ends

18. Draw a graph using the following clues. Edges should be straight and they should not cross. Use the full room names inside the nodes. Nodes should be circles /6

Clues:

- The Hall has 4 doorways.
- The Basement has a door to every room except the Hall and the Closet.
- The Closet can be reached by 3 doors, including one in the Foyer and another in the Library.
- There are 2 rooms with an even degree and all of the others have an odd number of connections.
- You can't get to the Closet from the Kitchen.