**Multiple Choice [12 Marks]**

1. Which of the following topics is NOT part of a “Terms of Service” contract?
   1. Proper or expected usage
   2. Accountability for online actions,
   3. Use personal data
   4. Payment details such as membership or subscription fees
   5. [Opt-out](https://en.wikipedia.org/wiki/Opt-out) policy describing procedure for account termination
2. Which of the following topics is NOT part of a “Terms of Service” contract?
   1. Potential misuse
   2. Behavior, and conduct
   3. Payment details such as membership or subscription fees
   4. [Opt-out](https://en.wikipedia.org/wiki/Opt-out) policy describing procedure for account termination
   5. Use personal data
   6. Dispute resolution process and limited rights to take a claim to court
3. Which of the following topics is part of a “Privacy Policy” contract?
   1. Potential misuse
   2. Use personal data
   3. Behavior, and conduct
   4. Payment details such as membership or subscription fees
   5. [Opt-out](https://en.wikipedia.org/wiki/Opt-out) policy describing procedure for account termination
   6. Dispute resolution process and limited rights to take a claim to court
4. Which of the following topics is part of a “Privacy Policy” contract?
   1. Proper or expected usage
   2. Accountability for online actions,
   3. Payment details such as membership or subscription fees
   4. [Opt-out](https://en.wikipedia.org/wiki/Opt-out) policy describing procedure for account termination
   5. Use personal data
5. Which of the following features is NOT a part of a Software IDE?
   1. Source code editor
   2. Intelligent code completion
   3. Version tracking and control
   4. Compiler / Verification tools
   5. Integrated help and documentation
6. Which of the following features is NOT a part of a Version Control System?
   1. Version tracking and control
   2. Backup and restore
   3. Build automation tools
   4. File sharing
   5. Access from multiple computers
7. Which of the following features is NOT a part of a Software IDE?
   1. Source code editor
   2. Intelligent code completion
   3. Build automation tools
   4. Version tracking and control
   5. Integrated help and documentation
8. Which of the following features is NOT a part of a Version Control System?
   1. Version tracking and control
   2. Backup and restore
   3. File sharing
   4. Compiler / Verification tools
   5. Access from multiple computers
9. Which of the following is NOT an internal part of a desktop computer?
   1. Power supply
   2. USB memory stick
   3. Motherboard
   4. Video card
   5. Ethernet Controller
10. Which of the following is NOT an internal part of a desktop computer?
    1. Power supply
    2. Hard drive
    3. USB memory stick
    4. CPU cooling fan
    5. Sound card
11. Which of the following is NOT an internal part of a desktop computer?
    1. Motherboard
    2. USB memory stick
    3. Sound card
    4. Video card
    5. Ethernet Controller
12. Which of the following is NOT an internal part of a desktop computer?
    1. Power supply
    2. Hard drive
    3. USB memory stick
    4. Video card
    5. Ethernet Controller
13. The capacity of modern RAM memory is measured in:
    1. Bytes
    2. Kilobytes
    3. Megabytes
    4. Gigabytes
    5. Terabytes
14. The capacity of modern Hard Drive memory is measured in:
    1. Bytes
    2. Kilobytes
    3. Megabytes
    4. Gigabytes
    5. Terabytes
15. The capacity of modern WIFI connections is measured in:
    1. Kilobytes
    2. Megabytes
    3. Kilobits per second (Kbps)
    4. Megabits per second (Mbps)
    5. Files per second
16. The capacity of modern Ethernet connections is measured in:
    1. Kilobytes
    2. Megabytes
    3. Kilobits per second (Kbps)
    4. Megabits per second (Mbps)
    5. Files per second
17. Which of the following is NOT a feature of “Cache” memory?
    1. Faster access than main memory
    2. Stores frequently accessed data and instructions
    3. Usually built in as part of the processor or hard drive
    4. Cache memory is much smaller capacity than main memory
    5. Only Processors and Video Cards have Cache Memory
18. Which of the following is NOT a feature of “Cache” memory?
    1. Faster access than main memory
    2. Stores rarely or infrequently accessed data and instructions
    3. Usually built in as part of the processor or hard drive
    4. Cache memory is much smaller capacity than main memory
    5. Many devices use Cache Memory
19. Which of the following is NOT a feature of “Cache” memory?
    1. Faster access than main memory
    2. Stores frequently accessed data and instructions
    3. Is separate from the processor or hard drive
    4. Cache memory is much smaller capacity than main memory
    5. Many devices use Cache Memory
20. Which of the following is NOT a feature of “Cache” memory?
    1. Faster access than main memory
    2. Stores frequently accessed data and instructions
    3. Built in as part of the processor or hard drive
    4. Cache memory has a similar capacity to the main memory
    5. Many devices use Cache Memory
21. A “byte” is made up of how many bits of computer memory?
    1. 1 bit
    2. 4 bits
    3. 8 bits
    4. 16 bits
    5. 23 bits
22. A “word” is made up of how many bits of computer memory?
    1. 1 bit
    2. 4 bits
    3. 8 bits
    4. 16 bits
    5. 23 bits
23. A 16 bits makes up this size of computer memory?
    1. 1 byte
    2. 1 character
    3. 1 word
    4. 1 long word
    5. 1 string
24. A 32 bits makes up this size of computer memory?
    1. 1 byte
    2. 1 character
    3. 1 word
    4. 1 long word
    5. 1 string
25. A user types in a program and forgets to add a semi-colon to one of the command lines. This is an example of a:
    1. Typing Error
    2. Syntax Error
    3. Logic Error
    4. Run-Time Error
    5. Spelling Error
26. A user types “vode loop()” rather than “void loop(): in their program. This is an example of a:
    1. Typing Error
    2. Syntax Error
    3. Logic Error
    4. Run-Time Error
    5. Spelling Error
27. A user creates a program to blink both a red and green LED but only the red LED blinks. This is an example of a:
    1. Programming Error
    2. Syntax Error
    3. Logic Error
    4. Run-Time Error
    5. Computer Error
28. A user creates a program that verifies and uploads to the Arduino board but does nothing when it runs. This is an example of a:
    1. Programming Error
    2. Syntax Error
    3. Logic Error
    4. Run-Time Error
    5. Computer Error

**Short Answer [20 Marks]**

1. Mr. Liang needs to organize a collection of image files from photographs taken for the year book. The photographs are from various clubs, sports teams, and events around the school.
   1. Create a list of 10 sample image file names related to possible clubs, teams, and events. [2]
   2. Create a set of folders that could be used to organize these sample image files. [2]
   3. Sort the sample image files into the appropriate folders. [2]
2. Mr. Liang also wants to make sure his files are securely backed up and can be shared by students working on the year book. What solution do you recommend? [2]
3. Mrs. Kuhl needs to organize and store the mid-term tests for each department in the school . Each test is a Word file. Each department (e.g. Math, Science, English, etc.) has created a number of tests for each grade (e.g. Grade 9, 10, 11, 12)
4. Create a list of 10 sample test file names related to possible school departments and grades. [2]
5. Create a set of folders that could be used to organize these sample test files. [2]
6. Sort the sample test files into the appropriate folders. [2]
7. Mr. Kuhl also wants to make sure these files are securely backed up and can be shared by the vice principals and office staff. What solution do you recommend? [2]
8. Explain how cache memory can speed up a processor. [2]
9. Explain how cache memory can speed up a hard drive. [2]
10. Draw a diagram showing how a “word” of computer memory is organized into bits and bytes. [3]
11. Draw a diagram showing how a negative integers are stored in computer memory. [3]

*Program Specification – For Use With The Remaining Questions In This Section*

The sample Arduino program reads commands from the serial monitor, flashes a red and a green LED, and writes information back to the serial monitor. The details are as follows:

* If the user types an even number into the serial monitor then the program flashes a “green” LED.
* If the user types an odd number into the serial monitor then the program flashes a “red” LED.
* If the user types a non-number into the serial monitor then the program prints “Not a Number!” to the serial monitor.

1. List the “input objects” mentioned in the program specification above. [2]
2. List the “output objects” mentioned in the program specification above. [2]
3. Create a flowchart for the action sequence described above. [3]

*Program Specification – For Use With The Remaining Questions In This Section*

The sample Arduino program reads commands from the serial monitor, flashes the on-board LED, and writes information back to the serial monitor. The details are as follows:

* If the user types a number less than 10 into the serial monitor then the program flashes the on-board LED.
* If the user types a number greater or equal to 10 into the serial monitor then the program prints “Number Too Big!” to the serial monitor.

1. List the “input objects” mentioned in the program specification above. [2]
2. List the “output objects” mentioned in the program specification above. [2]
3. Create a flowchart for the action sequence described above. [3]