

ANSWER ALL THE QUESTION WITH EITHER A, B, C or D.**1. State two differences between symmetric and asymmetric encryption.**

- A) Symmetric uses 1 key & is faster; Asymmetric uses 2 keys & is slower.
- B) Symmetric uses 2 keys & is slower; Asymmetric uses 1 key & is faster.
- C) Symmetric uses public keys; Asymmetric uses shared secret keys.
- D) Symmetric is slower & highly secure; Asymmetric is faster & less secure.

2. Explain the process by which an organization may acquire its digital certificate.

- A) Generate key pair & CSR, verify identity with a CA, receive certificate.
- B) Apply to a local ISP, pay a hosting fee, and auto-download the file.
- C) Self-sign a text file using an encryption program and share it.
- D) Request it from a hardware vendor during the initial server setup.

3. Describe supervised learning.

- A) Finding hidden patterns in unlabeled data automatically.
- B) Learning through trial and error using rewards and penalties.
- C) Training a model using labeled data to predict outcomes.
- D) Hardcoding explicit rules to solve a specific problem.

4. Describe unsupervised learning.

- A) Discovering hidden patterns or groupings in unlabeled data.
- B) Using labeled datasets to teach an algorithm to predict.
- C) Maximizing rewards through trial and error in an environment.
- D) Following explicitly programmed instructions to sort data.

5. State the purpose of a flip-flop.

- A) To store a single bit of binary data in a digital circuit.
- B) To convert alternating current (AC) to direct current (DC).
- C) To amplify weak electrical signals within a network.
- D) To execute mathematical calculations and logic functions.

6. Explain the need for scheduling in process management.

- A) To maximize CPU utilization and ensure fair resource access.
- B) To permanently store running applications on the hard drive.
- C) To compile user source code into executable binary files.
- D) To encrypt memory so processes cannot read each other



7. Describe the routine known as Shortest job first.

- A) Executes the process with the smallest execution time next.
- B) Executes processes based on their arrival time in the queue.
- C) Assigns a fixed time slice to each process in a cycle.
- D) Executes processes randomly to prevent resource starvation.



8. Describe the routine known as Round robin.

- A) Processes run to completion without any interruptions.
- B) Assigns a fixed time slice to each process in a cyclic order.
- C) Prioritizes processes that have the shortest execution time.
- D) Executes only background system processes before user apps.



9. Describe the routine known as First Come First Served.

- A) Processes are executed in the exact order they arrive.
- B) Processes with high priority run before older processes.
- C) Allocates CPU time based on the remaining execution time.
- D) Pauses running processes to let new processes run first.



10. Describe one benefit of the routine "Shortest job first".

- A) Minimizes the average waiting time for processes.
- B) Ensures every process gets an equal time slice.
- C) Prevents long processes from ever being starved.
- D) Ideal for systems requiring rapid user interaction.



11. Describe one benefit of the routine "Round Robin".

- A) Yields the lowest possible average turnaround time.
- B) Fairly shares CPU time and ensures no starvation.
- C) Automatically prioritizes background system tasks.
- D) Always completes long CPU-bound tasks the fastest.



12. Describe one benefit of the routine "First Come First Served".

- A) Automatically prioritizes the most critical tasks.
- B) Provides the fastest response time for GUI apps.
- C) Very simple to implement and understand.
- D) Optimizes CPU utilization for short processes.



13. Define the OOP term known as Encapsulation.

- A) Bundling data and methods while hiding internal details.
- B) Creating a new class based on an existing parent class.
- C) Allowing objects to take on many different forms.
- D) Instantiating multiple objects from a single blueprint.



14. Define the OOP term known as Getter.

- A) A method used to retrieve the value of a private variable.
- B) A method used to modify or update an object's attribute.
- C) A special method that initializes a newly created object.
- D) A variable that is shared across all class instances.



15. Define the OOP term known as Setter.

- A) A method that safely updates the value of a private field.
- B) A method that only returns the data stored in a variable.
- C) A function that destroys an object to free up memory.
- D) A public variable that can be accessed by any class.

