YOU HAVE TO ANSWER ALL QUESTIONS

Q1: Identify which statement is True and which is False, then correct the wrong statements. (13 Marks)

1. [ ] An operating system executes a variety of programs such as batch system and user programs.

2. [ ] Process Scheduling in stacks.

3. [ ] In resource sharing, all statements below are true:
   a. Parent and children share all resources
   b. Children share subset of parent’s resources
   c. Parent and child share no resources

4. [ ] In process termination, parent may not terminate or may not abort execution of children processes in all cases below:
   a. Child has exceeded allocated resources
   b. Task assigned to child is no longer required
   c. If parent is exiting

5. [ ] Hardware, Operating system, Application programs, and Users are the computer system components.

6. [ ] Each device controller is in charge of a particular device type.

7. [ ] An operating system is trap driven.

8. [ ] Disk surface is logically divided into tracks, which are subdivided into sectors.

9. [ ] Command Line Interface (CLI) allows direct command entry.
10. [ ] process execution may progress in sequential fashion.

11. [ ] A link in direct communication between processes is associated with exactly one pair of communicating processes.

12. [ ] The mailbox sharing problem can be solved by allowing only one process at a time to execute a receive operation.

13. [ ] Device-status table contains entry for each I/O device indicating its type, address, and state.

Q2: Write the full state (full name) for the given abbreviations (5 Marks):

(a) OS: ..............................................................................................................................
(b) ROM: ...........................................................................................................................
(c) API: ..............................................................................................................................
(d) GUI: ............................................................................................................................
(e) PCB: ............................................................................................................................

Q3: List 3 benefits of Operating Systems. (3 Marks)

1.

2.

3.
Q4: List down the advantages of process cooperation (4 Marks):

1. Information sharing
2. Computation speed-up
3. Modularity
4. Convenience

Q5: There are three general methods used to pass parameters to the OS in system call. Describe each method briefly: (3 Marks)

1.

2.

3. Parameters placed, or pushed, onto the stack by the program and popped off the stack by the operating system

Q6: The figure Below shows the states of the process long-life. Fill-up the process states in the ellipse. (5 Mrks)

![Diagram of process states]
Q7: What are the following terms or concepts: (7 Marks)

1. Independent process

2. Cooperating process

3. Trap

4. Caching

5. Protection

6. Security

7. Process