

**PARUL UNIVERSITY**  
**FACULTY OF IT & COMPUTER SCIENCE**  
**MCA Summer 2018 – 19 Examination**

**Semester: 2****Subject Code: 05201153****Subject Name: Operating Systems****Date: 20/04/2019****Time: 02:00 to 04:30pm****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1 Answer the followings.****A. Write short notes.****(05)**

1. What is physical address?
2. What is race condition?
3. Explain importance of mutual exclusion.
4. How segmentation differs from paging?
5. What is logical address?

**B. Multiple choice type questions/ Give the sentence true or false.(Each of 01 marks)****(10)**

1. What is operating system?
  - a) Collection of programs that manages hardware resources
  - b) System service provider to the application programs
  - c) Link to interface the hardware and application programs
  - d) All of the mentioned
2. Process is
  - a) Program in High level language kept on disk
  - b) A program in execution
  - c) A job in secondary memory
  - d) None of the above
3. A Process Control Block(PCB) does not contain which of the following :
  - a) Code
  - b) Stack
  - c) Bootstrap program
  - d) Data
4. The number of processes completed per unit time is known as \_\_\_\_\_
  - a) Output
  - b) Throughput
  - c) Efficiency
  - d) Capacity
5. Which of the following is not the state of a process?
  - a) New
  - b) Old
  - c) Waiting
  - d) Running
6. The interval from the time of submission of a process to the time of completion is termed as
  - a) Waiting time
  - b) Turnaround time
  - c) Response time
  - d) Throughput
7. Which scheduling algorithm allocates the CPU first to the process that requests the CPU first?
  - a) First-come, first-served scheduling
  - b) Shortest job scheduling
  - c) Priority scheduling
  - d) None of the mentioned
8. Time quantum is defined in
  - a) Shortest job scheduling algorithm
  - b) Round robin scheduling algorithm

- c) Priority scheduling algorithm
  - d) Multilevel queue scheduling algorithm
9. Which one of the following is the deadlock avoidance algorithm?
- a) Banker's algorithm                      b) Round-robin algorithm
  - c) Elevator algorithm                      d) Karn's algorithm
10. The circular wait condition can be prevented by
- a) Defining a linear ordering of resource types
  - b) Using thread
  - c) Using pipes
  - d) All of the mentioned

**Q.2 Answer the followings. (2 or 3 Mark Questions.) (Three Q- 2 marks & Two Q-3 marks.) (15)**

- 1. What is the use of Program Counter? **02**
- 2. Explain Round robin scheduling algorithm? **02**
- 3. Explain Multithreading model. **02**
- 4. What is Demand Paging? **03**
- 5. What is Deadlock? Explain various conditions for deadlock. **03**
- 6. What is Distributed operating System? Explain Advantage of it. **03**

**Q.3 Answer the following. (Any three) (15)**

- 1. Difference between Process and Thread.
- 2. Explain Process State Transition diagram.
- 3. Explain PCB in detail.
- 4. Explain DMA in detail.

**Q.4 Answer the following.**

- A. Explain basic elements of computer. **(05)**
- B. What is RAID? Explain RAID level in Detail. **(10)**

**OR**

- B. Explain the Disk scheduling algorithms in brief. **(10)**