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MCS-203

POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS (PGDCA–NEW)

Term-End Examination

June, 2024

MCS-203 : OPERATING SYSTEMS

Time : 3 Hours *Maximum Marks : 100*

Weightage : 70%

Note : *(i) Question No.* ***1*** *is compulsory.*

(ii) Attempt any ***three*** *questions from the rest.*

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1. (a) Characterize a deadlock in a system. Using a resource allocation graph, illustrate a deadlock. 10

   (b) Discuss the design goals and design issues in a distributed system. 10

(c) With the help of a block diagram, explain the iOS-layered architecture with a focus on essential functions of all the layers. 10

(d) With reference to memory management in Windows-10 operating system, explain the following : 10

(i) Virtual Memory Organization

(ii) Demand Paging

2. (a) Discuss the file management and security features in Android operating system. 10

(b) Elucidate the general design issues for a mobile operating system in detail. 10

3. (a) Write and explain Bakery's algorithm that handles critical section problem for '*n*' processes. 10

(b) Write and explain briefly, all the essential functions of an operating system. 10

4. (a) Explain Virtual Memory and its principle of operation, elaborating the virtual to physical address mapping. 10

(b) With the help of a diagram, explain LINUX architecture with a special focus on 'Kernel' and its components. 10

5. Write short notes on the following : 4×5=20

(i) Types of Schedulers (Short-term, Long-term and Medium term)

(ii) Demand Paging

(iii) Mutual Exclusion in Distributed Systems

(iv) Libraries and Application Framework Layers of Android Architecture