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MCS-203

POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS (PGDCA) (NEW)

Term-End Examination

December, 2021

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) Discuss SCAN and C-SCAN disk scheduling algorithms. List the advantages of SCAN over C-SCAN algorithm. 10

(b) Consider the following reference-string : 10

1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6

How many page faults would occur for the following algorithms, assuming memory with three frames :

(i) LRU

(ii) Optimal Replacement

(c) List and explain various commonly used directories in iOS. Also mention the purpose of iCloud container of iOS along with its contents. 10

(d) Explain demand paging and memory compression in memory management of WINDOWS-10 O/S. 10

2. (a) Define paged-segmentation and segmented paging. Explain the working principle of paged-segmentation. 10

   (b) Explain the memory management in LINUX. 10

3. (a) Write and explain Ricart and Agrawala's mutual exclusion algorithm for distributed systems. 10

   (b) Using semaphore, write an algorithm that solves the producer/consumer's problem with a bounded buffer. 10

4. (a) Briefly explain file management system of WINDOWS 10 O/S. 10

   (b) Explain the security features in LINUX with respect to user accounts, file permissions, data verification and encrypted storage. 10

5. Write short notes on any ***four*** of the following : 4×5=20

   (a) Salient features of Android OS

   (b) Evolution of iOS

   (c) Comparative chart of Symbian, Android with respect to the features :

   OS family, user interface, app stores, licence policy, security, voice assistant and power management.

   (d) KaiOS

   (e) Any ***five*** design issues involved in distributed systems.