

Total Pages : 8

H-7121

M.Sc. (Semester-II) Examination, 2022

COMPUTER SCIENCE

(Operating System Concepts)

Time Allowed : Three Hours

Maximum Marks : 70

Minimum Passing Marks : 25

Note : Question paper is divided into four sections. Attempt questions of all four sections as per given direction. Distribution of marks is given in each section.

SECTION - A

(Objective Type Questions)

Note : Attempt **any ten** questions. Each question carries **1** mark.

1. Fill in the blanks : [10×1=10]

H-7121/1000

(1)

[P.T.O.]

- (i) The circular wait condition can be prevented by _____ .
- (ii) Through _____ a computer transfer data.
- (iii) The relocation register helps in _____ .
- (iv) _____ is least secure method of authentication.
- (v) In UNIX domain switch is accomplished via _____.

Multiple Choice Type :

- (vi) A process can be terminated due to :
 - (a) Normal Exit
 - (b) Fatal Error
 - (c) Killed by another process
 - (d) All of the above
- (vii) In UNIX which system call creates the new process :
 - (a) Create
 - (b) New

- (c) Fork
 - (d) None of the above
- (viii) File Type can be represented by :
- (a) File Name
 - (b) File Extension
 - (c) File Identifier
 - (d) None of the above
- (ix) When memory is divided into several fixed sized partitions, each partition may contain.
- (a) Exactly one process
 - (b) At least one process
 - (c) Multiple processes at once
 - (d) None of the above
- (x) Which of the following is a type of systems software used on micro computers?

- (a) MS-DOS
 - (b) PC-DOS
 - (c) UNIX
 - (d) All of the above
- (xi) The protection domain of a process contains _____.
- (a) Object name
 - (b) Rights-set
 - (c) Both object name and rights-set
 - (d) None of the above
- (xii) Why is one-time password safe?
- (a) It is easy to generated
 - (b) It cannot be shared
 - (c) It is different for every access
 - (d) It is a complex encrypted password

SECTION - B

(Very Short Answer Type Questions)

Note : Attempt **any five** questions. Each question carries **2** marks. Maximum word limit is 25-30 words. [5×2=10]

2. (i) What is System Calls?
- (ii) What is the process states and process control block?
- (iii) What is Page fault?
- (iv) Write the directory structure with suitable diagram.
- (v) What is Disk scheduling?
- (vi) What is thread Model? Write the thread usage.
- (vii) What is user Authentication?

SECTION - C

(Short Answer Type Questions)

Note : Attempt **any five** questions. Each question carries **4** marks. Maximum word limit is 250 words. [5×4=20]

3. (i) What is design goals? Explain the operating system services with example.
- (ii) What is CPU scheduling? Explain CPU scheduling algorithm.
- (iii) What do you mean by Paging? Explain the file types in detail.
- (iv) Explain WINDOWS Operating System in brief.
- (v) Define Domain of Protection. Explain the access matrix with example.
- (vi) What is Memory Management? Explain the role of memory management in Operating System.
- (vii) What is Process termination? Explain the interprocess communication.

SECTION - D

(Long Answer Type Questions)

Note : Attempt **any three** questions. Each question carries **10** marks. Word limit more than **500** words. [3×10=30]

4. (i) Write a note on Logical and Physical Addresses in detail.
- (ii) Explain the Real Time OS, Smart Card OS and Memory Management with suitable example.
- (iii) What is Security problem? Write a note on cryptography as a security tool in detail.
- (iv) Define the communication in client server systems. Explain multithread programming with example.

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