BCA   (Sem.–4)
OPERATING SYSTEMS
Subject Code : UGCA-1923
M.Code : 79727
Date of Examination : 13-12-2022

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1.   **Write briefly :**

   a) Differentiate between Kernel and Shell.

   b) What are the advantages of layered structure over monolithic structure?

   c) What is meant by the 'state of the process'?

   d) Define Semaphores.

   e) What are Pages and Frames?

   f) What is a Race Condition?

   g) What is the use of Valid-Invalid Bits in Paging?

   h) What are the various File Operations?

   i) What is the significance of Device Drivers?

   j) What are the characteristics of a Real Time Operating System?

SECTION - B

2. Explain Operating System functions and services in detail.

3. State dining philosopher's problem and give a solution using semaphores. Write structure of philosopher.

4. Write about the various CPU scheduling algorithms by taking suitable examples.

5. Explain how paging supports virtual memory. With neat diagram explain how logical address is translated into physical address.

6. a) What is Directory? Explain directory operation in details.

   b) Write a note on I/O device controllers.

7. Discuss the case study on Linux operating system.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.