## TILAK MAHARASHTRA VIDYAPEETH, PUNE BACHELOR OF COMPUTER APPLICATIONS (B.C.A.) SPECIALIZATION IN CYBER SECURITY (CS) EXAMINATION : DECEMBER - 2022

## **SEMESTER - I**

Sub: Operating System (BCA-146-18/BCA-146-20/BCA-CS-146-20)

Date :	31/12/2022	Total Marks : 60	Time: 10.00 am to 12.30 pm
		tt of every question are the l to attempt questions in ord ly are likely to be marked z ators, Log tables, Mollier C	maximum marks for that question. der. ero. Charts is allowed.
Q.1.	Fill in the blanks		(5)
1.	a. Long-Term Scheduler a. Medium-Term Scheduler		ort-Term Scheduler ne of the above
2.	a. Binary c. Variable	b. cou	inting ne of the above
3.	The user program deals with a. physical c. logical	addresses. b. mer	
4.	The extension for executable file i acom	s bex	e
5.	<ul> <li>cpdf</li> <li> process scheduling queue</li> <li>a. Job queue</li> <li>c. Device queues</li> </ul>		
Q.2.	State True/False		(5)
1. 2. 3.	In Round Robin Scheduling each process is provided a fix time to execute, it is called a quantum. In IPC, FIFO mechanism is half duplex meaning the first process communicates with the second process. The operating system controls and coordinates the use of the hardware among the various		
4. 5.	application programs. Paging technique plays an important role in implementing virtual memory. The read/write operations come in two basic forms, sequential and direct.		
Q.3.	Answer the following (Solve any 5) (10)		
1. 2. 3. 4.	What are semaphores? Define best fit algorithm. What is the relationship between operating system and computer hardware? Define starvation.		

- Define starvation.
   List all file attributes.
- **6.** Define fragmentation.

## Q. 4. Answer the following in detail. (Solve any 6)

- 1. What are three methods for allocating disk space? Explain.
- **2.** Describe paging in virtual memory.
- **3.** Discuss file system organization and file system mounting.
- **4.** Explain various disk scheduling algorithms.
- 5. State dining philosophers problem using diagram.
- **6.** Describe race condition.
- 7. Explain logical and physical address space.

## Q. 5. Answer the following in detail. (Solve any 1)

(10)

- **1.** Describe file attributes, operations and its types.
- 2. Explain process states and PCB using diagram