

**TILAK MAHARASHTRA VIDYAPEETH, PUNE**  
**BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)**  
**SPECIALIZATION IN CYBER SECURITY (CS)**  
**EXAMINATION : DECEMBER/JANUARY- 2023-24**  
**SEMESTER - I**

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

**Date : 04/01/2024**

**Total Marks : 60**

**Time: 10.00 am to 12.30 pm**

**Instructions:**

1. All questions are compulsory unless and otherwise stated.
2. Bold figures to the right of every question are the maximum marks for that question.
3. Candidates are advised to attempt questions in order.
4. Answers written illegibly are likely to be marked zero.
5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
6. Draw neat and labelled diagrams wherever necessary.

**Q.1. Fill in the blanks (5)**

1. BIOS is used by \_\_\_\_\_  
 a) Operating system  
 b) compiler  
 c) Interpreter  
 d) application software
2. When was the first operating system developed?  
 a) 1948  
 b) 1949  
 c) 1950  
 d) 1951
3. Which of the following is the extension of Notepad?  
 a) .txt  
 b) .xls  
 c) .ppt  
 d) .pdf
4. Which of the following is not an operating system?  
 a) Windows  
 b) Linux  
 c) DOS  
 d) Oracle
5. What is the full name of FAT?  
 a) File attribute table  
 b) File allocation table  
 c) Font attribute table  
 d) Format allocation table

**Q.2. State True/False (5)**

1. The abstraction that the OS provides for the CPU is a virtual address space.
2. The difference between a computer Worm and a computer Virus is that a Virus requires human action to spread.
3. With dynamic relocation, hardware dynamically translates an address on every memory access.
4. Two processes reading from the same virtual address will access the same contents.
5. The static portion of an address space cannot contain any data.

**Q.3. Answer the following (Solve any 5) (10)**

1. List components of OS.
2. Define file system.
3. List down issues in memory management
4. Define disk structure
5. Define TLB.
6. What are input and output devices.

- Q. 4. Answer the following in detail. (Solve any 6) (30)**
1. Explain virtual memory.
  2. Explain the methods used for implementing directories
  3. Difference between paging and segmentation.
  4. Describe various file access methods.
  5. What are the drawbacks of monitors?
  6. What are advantages of contiguous allocation?
  7. What is synchronization? explain its hardware
- Q. 5. Answer the following in detail. (Solve any 1) (10)**
1. Describe different file attributes and file types.
  2. Explain various disk scheduling algorithms.
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