

AT-429

**B.C.A. (Part-I) Semester—II Examination**  
**OPERATING SYSTEM**  
**Paper—2ST1**

Time : Three Hours]

[Maximum Marks : 60

- Note :—** (1) All questions are compulsory.  
(2) All questions carry equal marks.  
(3) Assume suitable data wherever necessary.

1. (a) Explain kernel-shell relationship architecture in Unix. 6  
(b) What is software ? Explain the types of software. 6

**OR**

2. (a) Explain utility software with diagram. 6  
(b) Explain :  
(i) Multitasking  
(ii) Multiprogramming. 6
3. (a) Explain structure of FAT. 6  
(b) Explain with example :  
(i) RD  
(ii) MD  
(iii) DATE. 6

**OR**

4. (a) What is Formatting ? Explain. 6  
(b) Explain with example :  
(i) XCOPY  
(ii) CHKDSK  
(iii) DIR. 6

5. (a) Consider the following snapshot of an operating system :

| Process | Arrival Time | Execute Time | Service Time |
|---------|--------------|--------------|--------------|
| $P_0$   | 0            | 5            | 0            |
| $P_1$   | 1            | 3            | 5            |
| $P_2$   | 2            | 8            | 8            |
| $P_3$   | 3            | 6            | 16           |

Compute turn around time of each process for algorithms FCFS. 6

- (b) Explain Process Control Block (PCB). 6

**OR**

6. (a) Explain :

- (i) Time slicing
- (ii) Job scheduling. 6

- (b) Explain Batch Processing System. 6

7. (a) Explain :

- (i) Sequential File Access
- (ii) Direct File Access. 6

- (b) What is linked memory allocation ? What are its drawbacks ? 6

**OR**

8. (a) Explain contiguous allocation with example. 6

- (b) Explain tree structured directory with neat diagram. 6

9. (a) Explain the concept of memory fragmentation. 6

- (b) How partitions are done in operating system ? Explain. 6

**OR**

10. (a) Explain :

- (i) FIFO
- (ii) LRU. 6

- (b) What is partitioning ? Explain its types. 6