

**Visvesvaraya Technological University, Belagavi****MODEL QUESTION PAPER****5<sup>th</sup> Semester, B.E (CBCS) EC/TC****Course: 15EC553- Operating Systems****Time: 3 hours****Max. marks: 80****Note: (i) Answer Five full questions selecting any one full question from each Module.****(ii) Question on a topic of a Module may appear in either its 1<sup>st</sup> or 2<sup>nd</sup> question.****Module-1**

- 1 a. Explain common tasks performed by the operating System. (08 Marks)  
 b. Explain Resource allocation techniques. (08 Marks)

**Or**

- 2 a. Explain Batch processing systems with a neat diagram. (08 Marks)  
 b. In Multiprogramming systems I/O bound programs should be given higher priority than CPU bound programs. Justify this with a timing diagram. (08 Marks)

**Module-2**

- 3 a. Explain OS view of Processes. (08 Marks)  
 b. Explain fundamental state transitions of processes and compare processes with threads. (08 Marks)

**Or**

- 4 a. For the given set of processes, perform FCFS and SRN non preemptive scheduling (08 marks)

Processes	P1	P2	P3	P4	P5
Arrival time	0	2	3	5	9
Service time	3	3	2	5	3

- b. Explain long, medium and short term scheduling in time sharing systems. (08 marks)

**Module-3**

- 5 a. Explain contiguous and non contiguous memory allocation techniques. (08 Marks)  
 b. Explain Paging and Segmentation. (08 Marks)

**Or**

- 6 a. Explain Virtual memory management. (08 marks)  
b. Explain FIFO and LRU Page replacement policies. (08 marks)

**Module-4**

- 7 a. Explain File systems and IOCS. (08 marks)  
b. Explain Direct Access and Index Sequential File Organization. (08 marks)

**Or**

- 8 a. Explain allocation of disk space. (08 Marks)  
b. Explain Implementation of File access to open a File. (08 Marks)

**Module-5**

- 9 a. Define Message passing. Explain how to implement message passing. (08 Marks)  
b. Explain mailboxes with its advantages. (08 Marks)

**Or**

- 10 a. Explain Resource State Modeling. (08 Marks)  
b. Explain deadlock detection algorithm. (08 marks)

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