CS/M.TECH (IT)/SEM-2/MSE-201/09
OPERATING SYSTEMS (SEMESTER - 2)

1. ....
   Signature of Invigilator

2. ....
   Signature of the Officer-in-Charge

Reg. No.

Roll No. of the Candidate

CS/M.TECH (IT)/SEM-2/MSE-201/09
ENGINEERING & MANAGEMENT EXAMINATIONS, JULY – 2009
OPERATING SYSTEMS (SEMESTER - 2)

Time : 3 Hours]   [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.

2. You have to answer the questions in the space provided marked 'Answer Sheet'. Write on both sides of the paper.

3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.

4. Read the instructions given inside carefully before answering.

5. You should not forget to write the corresponding question numbers while answering.

6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.

7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**

8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.

9. Rough work, if necessary is to be done in this booklet only and cross it through.

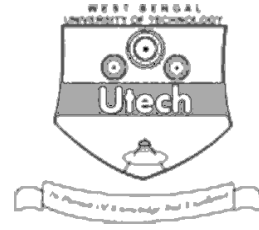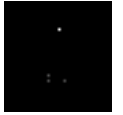**No additional sheets are to be used and no loose paper will be provided**

FOR OFFICE USE / EVALUATION ONLY
Marks Obtained

Question Number										Total Marks	Examiner's Signature
Marks Obtained											

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Head-Examiner/Co-Ordinator/Scrutineer

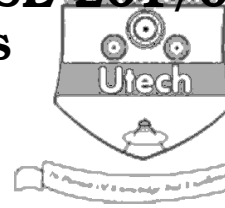43008 (02/07)

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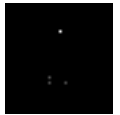
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Time : 3 Hours]   [Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer any *five* questions.   5 × 14 = 70

1. a) What are the functions expected from an operating system ?   4

    b) What is system call ? Explain the sequence of actions taken place when a program uses system call library to invoke an operating system routine.   7

    c) What are software interrupts ?   3

2. a) State five major activities of an operating system with respect to process management and describe those activities.   10

    b) Draw a diagram showing possible state of transition of a process.   4

3. a) Explain the abstract view of system component with a diagram.   4

    b) Explain using graphical representation, the memory layout of a simple batch system and multi-programmed batch system.   4

        What are the OS feature needed for multi programming ?   3

    c) Explain Time sharing in the context of operating system.   3

4. a) What do you mean by parallel systems ?   2

    b) Draw the Symmetric multi-processing architecture and explain.   4

        Compare and contrast between Symmetric multi-processing and Asymmetric multi-processing.   3

    c) Explain distributed systems. Discuss clustered and real time systems.   2 + 3
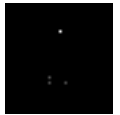
5. a) Explain process communication and process synchronization.   2 + 2

    b) Write down the major components of the I/O system.   4

    c) Discuss briefly the secondary storage management.   3

    d) What is meant by protection mechanism ? Explain.   3

6. a) What is command interpreter ? Explain systems program. Draw the MS-Dos layer architecture.   3 + 3

    b) Explain briefly the design of Unix operating system.   4

    c) Explain virtual machine. Discuss briefly its advantages and disadvantages.   4

7. a) Explain diagrammatically the representation of process scheduling.   4

    b) What is process control block ?   2

        Explain how the CPU switches from one process to another.   4

    c) What are the various states of a process ? Explain context switching.   4

8. a) State the classical producers-consumers problem with unbounded buffer.   2

        Is it possible to have a deadlock involving only one single process ?   2

    b) What are the data structures used by the operating system for supporting virtual memory ? Explain the use of each of them.   6

    c) What is device driver ? Explain MBR.   4

END