SE Sem IV (R-2019) AI & DS and Comp

QP : 93542

University of Mumbai

Examinations Summer 2022

Program: **Computer Engineering**

Curriculum Scheme: CBGS / R-19 (C-scheme)

26/5/2022

Program No. : 1T00734

Name of the Examination: SE Sem - IV

Subject paper Code: 40524

Course Name: Operating System

Time: 3 hours **Max. Marks:** 80

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	When a computational speed and resource sharing is required and implemented through various full computer systems in a network, what OS should be chosen?
Option A:	Real-time OS
Option B:	Distributed OS
Option C:	Embedded OS
Option D:	Batch OS
2.	Core of operating system is _____
Option A:	Shell
Option B:	Kernel
Option C:	Commands
Option D:	Script
3.	Which of the following state transitions is not possible?
Option A:	Blocked to running
Option B:	Ready to running
Option C:	Running to blocked
Option D:	Blocked to ready
4.	Degree of multiprogramming is characteristic of
Option A:	Long Term Scheduler
Option B:	Short Term Scheduler
Option C:	Medium Term Scheduler
Option D:	Dispatcher
5.	The situation where more than one processes access and update the same data concurrently and the result depends on the sequence of execution in which it takes place is known as
Option A:	Critical section

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Option D:	CR0, CR1 CR2,CR3
8.	How many flags are active in flag register of 80386?
Option A:	9
Option B:	12
Option C:	13
Option D:	10
9.	What lead to the development of MESI and MEI protocol ?
Option A:	Cache size
Option B:	Cache Coherency
Option C:	Bus snooping
Option D:	Number of caches
10.	Hyperthreading uses the concept of
Option A:	Simultaneous multithreading
Option B:	Distributed decoding
Option C:	Multiple switching
Option D:	Pipelining

Q2	**Solve any Two Questions out of Three** **10 marks each**
A	Explain and draw IVT? Differentiate between hardware and software interrupts?
B	Explain descriptors and paging mechanism in protected mode of 80386 ?
C	Explain the Initialization command words (ICWs) and Operational command words(OCWs) of the 8259 PIC.

Q3	**Solve any Two Questions out of Three** **10 marks each**
A	Write an 8086 assembly language program to print the flag registers
B	Design 8086 microprocessor based system working in minimum mode with the following specifications. I) 8086 microprocessor working at 8 MHz. II) 16 KB EPROM using 8K devices. Clearly show memory map with address range. Draw a neat schematic.
C	Explain protection mechanism of 80386 with diagram.

SE Comp 'A/P'

Q4	Solve any Two Questions out of Three	10 marks each
A	Draw and explain timing diagram of memory read and memory write operation in minimum mode.	
B	Explain Pentium 4 Net burst micro architecture and write a note on hyperthreading	
C	Explain Integer and Floating-Point Pipeline of Pentium.	