

# University of Mumbai

## Examination 2020

Examinations Commencing from 23<sup>rd</sup> December 2020 to 6<sup>th</sup> January 2021 and from 7<sup>th</sup> January 2021 to 20<sup>th</sup> January 2021

Program: Computer Engineering

Curriculum Scheme: Rev 2016

Examination: TE Semester V

Course Code: CSDLO5012 and Course Name: Advance Operating System

Time: 2 hour

Max. Marks: 80

<b>Q1.</b>	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
1.	The central component of an OS is
Option A:	Register
Option B:	CPU
Option C:	Kernel
Option D:	Memory
2.	'fork' system call is used to
Option A:	Open a file
Option B:	Close a file
Option C:	Create new process
Option D:	End a process
3.	Which algorithm is used for writing a disk block
Option A:	bwrite
Option B:	dwrite
Option C:	datawrite
Option D:	bufferwrite
4.	In-core i-node does not consist of
Option A:	status of incore inode
Option B:	reference count
Option C:	inode sign
Option D:	pointer to other incore inode
5.	In UNIX, peripheral devices are treated as
Option A:	peripheral devices
Option B:	i/p and o/p devices
Option C:	files
Option D:	tapes
6.	Following is not a layer of UNIX Architecture
Option A:	user level
Option B:	kernel layer
Option C:	software layer

Option D:	hardware layer
7.	If kernel cannot find block on hash queue, it allocates a buffer from
Option A:	hash queue
Option B:	buffer queue
Option C:	free queue
Option D:	free list
8.	A process can switch from user running to kernel running with help of
Option A:	system call
Option B:	swap out
Option C:	swap in
Option D:	wakeup
9.	The register context do not consist of
Option A:	Program counter
Option B:	memory status register
Option C:	stack pointer
Option D:	processor status register
10.	Context of process is not saved in case of
Option A:	system call
Option B:	interrupts
Option C:	executing process
Option D:	context switch
11.	Algorithm for handling interrupts uses
Option A:	interrupt vector
Option B:	interrupt array
Option C:	interrupt matrix
Option D:	interrupt list
12.	which of the following is not a process state
Option A:	ready to run
Option B:	sleeping in swap space
Option C:	zombie
Option D:	executing in swap space
13.	Following is not the technique for scalability in DOS
Option A:	hide replication
Option B:	hide application
Option C:	hide communication latencies
Option D:	hide replication
14.	Time sharing system makes use of which queue
Option A:	run queue
Option B:	state queue
Option C:	process queue

Option D:	disk queue
15.	_____ is used for achieving Mutual exclusion
Option A:	Software instruction
Option B:	Hardware instruction
Option C:	Test instruction
Option D:	Check instruction
16.	In which scheduling task is executed on same processor every time ?
Option A:	Smart scheduling
Option B:	Affinity based scheduling
Option C:	Co scheduling
Option D:	Gang based scheduling
17.	Following instruction is not used to achieve Mutual exclusion
Option A:	Swap
Option B:	Compare and swap
Option C:	Test and set
Option D:	Retest
18.	Following scheduler of RTOS comes under category of offline scheduling
Option A:	Earliest deadline first scheduler
Option B:	Cyclic scheduler
Option C:	Rate monotonic scheduler
Option D:	Gang based scheduler
19.	Following is not a Cloud OS
Option A:	Glide
Option B:	Kohive
Option C:	Amoeba
Option D:	Paramecium
20.	Following is an application of soft RTOS
Option A:	Robots
Option B:	Anti-missile System
Option C:	Satellite-Based Tracking of Enemy Movements
Option D:	Web Browsing

<b>Q2</b>	
<b>A</b>	<b>Solve any Two 5 marks each</b>
i.	Differentiate between Hard RTOS and Soft RTOS ?
ii.	Mention different types of OS along with their features
iii.	Design Issues of Multiprocessor OS
<b>B</b>	<b>Solve any One 10 marks each</b>
i.	Explain Process States and transition in UNIX OS with help of diagram
ii.	What is buffer cache? Describe the structure of Buffer Header

<b>Q3</b>	
<b>A</b>	<b>Solve any Two 5 marks each</b>
i.	Explain Gang Based Scheduling in Multiprocessor OS
ii.	Discuss Transparency issues of Distributed OS
iii.	Explain Android OS in detail
<b>B</b>	<b>Solve any One 10 marks each</b>
i.	Explain U Area along with its structure in detail
ii.	Explain Architecture of UNIX OS in detail