Program: Computer Engineering
Curriculum Scheme: 2016
Examination: ME Semester I
Course Code: CSC103 and Course Name: Advanced Operating System
Time: 2 hour Max. Marks: 80
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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	_____refers what should be done.
Option A:	Policies
Option B:	Mechanism
Option C:	Layers
Option D:	Design
2.	_____ approach divides operating system into several layers
Option A:	Layered
Option B:	Monolithic
Option C:	Micro kernel
Option D:	Virtual machine
3.	_____ is an example of hardware resource which is managed by operating system in fair and efficient manners
Option A:	Linker
Option B:	Loader
Option C:	Compiler
Option D:	Main memory
4.	_____ section of code update shared variable
Option A:	Entry section
Option B:	Exit section
Option C:	Critical section
Option D:	Remainder section
5.	DOS and RTOS are the examples of _____ advanced operating system
Option A:	High level
Option B:	Architecture driven
Option C:	Application driven
Option D:	Low level
6.	In_____scheduling, shorter duration job has higher priority
Option A:	Earliest deadline first
Option B:	Rate monotonic
Option C:	Cyclic
Option D:	Table driven
7.	_____tasks are done repeatedly
Option A:	Sporadic

Option B:	Periodic
Option C:	Aperiodic
Option D:	Critical
8.	EDF scheduling is an example of _____type of scheduling
Option A:	Table-driven
Option B:	Cyclic
Option C:	Hybrid
Option D:	Event driven
9.	Consider following schedule S with T1, T2, and T3 transaction S: T1: R(x), T2: R(Z), T1: R(Z),T3:R(X), T3:R(Y), T1:W(X). T3:W(Y), T2:R(Y), T2:W(Z), T2:W(Y) Is schedule S is serializable then equivalent serial schedule is
Option A:	T1,T2, T3
Option B:	T2, T1, T3
Option C:	T3, T2, T1
Option D:	T2, T1, T3
10.	___ and ___are the two phases in 2PL.
Option A:	Growing phase and unlocking phase
Option B:	Growing phase and Shrinking phase
Option C:	Locking phase and Shrinking phase
Option D:	Locking phase and release phase
11.	In distributed systems, link and site failure is detected by _____
Option A:	polling
Option B:	handshaking
Option C:	token passing
Option D:	interrupt
12.	What is common problem found in distributed system ?
Option A:	Process Synchronization
Option B:	Communication synchronization
Option C:	Deadlock problem
Option D:	Power failure
13.	If a process is executing in its critical section, _____
Option A:	any other process can also execute in its critical section
Option B:	no other process can execute in its critical section
Option C:	one more process can execute in its critical section
Option D:	two processes can enter critical section parallely
14.	Two clocks are said to be synchronized at a particular instance of time if the difference in time values of the two clocks is less than some specified constant. The difference in time values of two clocks is called _____.
Option A:	Clock Frequency
Option B:	Clock drift
Option C:	Clock Skew

Option D:	Clock ticks
15.	In which algorithm, One process is elected as the coordinator.
Option A:	Distributed mutual exclusion algorithm
Option B:	Centralized mutual exclusion algorithm
Option C:	Token ring algorithm
Option D:	Hybrid mutual exclusion algorithm
16.	When resources have multiple instances _____ is used for deadlock Avoidance.
Option A:	Bankers algorithm
Option B:	Resource Allocation Graph
Option C:	Semaphores
Option D:	Monitors
17.	If an old process wants a resource held by a young process, the old one will preempt the young process wounded and killed, restarts and wait happens in _____
Option A:	Wait-die
Option B:	Wound-wait
Option C:	Wound-wait and Wait-die
Option D:	Wait-for-graph
18.	All fault-tolerant techniques rely on
Option A:	Integrity
Option B:	Dependability
Option C:	Redundancy
Option D:	Interrupt
19.	In a _____ fault, a processor sends fictitious messages to other processors.
Option A:	Crash
Option B:	Omission
Option C:	Stable storage
Option D:	Malicious
20.	For proper synchronization in distributed systems _____
Option A:	prevention from the deadlock is must
Option B:	prevention from the starvation is must
Option C:	prevention from the deadlock & starvation is must
Option D:	Rollback

Q2. **(20 Marks)**	**Solve any Two Questions out of Three** **10 marks each**
A	What are the design approaches in operating system? Why different approaches are used for designing OS? Give advantages and disadvantages of each approach.
B	Explain Non-Two-Phase Locking Algorithm. What are its advantages over two-phase-locking algorithm?
C	Explain Rate Monotonic scheduling algorithm in RTOS.

Q3. **(20 Marks)**	**Solve any Two Questions out of Three** **10 marks each**
A	What are the distributed deadlock handling strategies? Explain in detail.
B	What are the ways of implementing backward error recovery? Explain in detail.
C	With example, explain how Lamport's algorithm provides mutual exclusion. Also explain how this algorithm can be further optimized.