	King Saud University College of Computer and Information Sciences Computer Science Department	
Course Code	CSC 227	
Course Title	Operating Systems	
Semester	Winter 2021-22 (II)	
Type of Examination	Midterm Exam	**Duration:** 2hrs
Student Name:		
Student ID:		
Student Section No.		
Instructor Name:		

Instructions:

- This exam has 25 marks.
- This exam has 8 pages.
- **Do not use pencil**
- Write clearly and neatly.
- Copy your answers to questions 1-1 to 1-40 in the table below. **ONLY THIS TABLE WILL BE GRADED**
- **WHEN FILLING THE TABLE, USE CAPITAL LETTERS**

1.	2.	3.	4.	5.	6.	7.	8.
D	**C**	**A**	**B**	D	B	C	B
9.	**10.**	**11.**	**12.**	**13.**	**14.**	**15.**	**16.**
A	**B**	**A**	**D**	**D**	**B**	**C**	**A**
17.	**18.**	**19.**	**20.**	**21.**	**22.**	**23.**	**24.**
A	**B**	**A**	**B**	**D**	**A**	**B**	**C**
25.	**26.**	**27.**	**28.**	**29.**	**30.**	**31.**	**32.**
D	**A**	**D**	**C**	**B**	**A**	**C**	**A**
33.	**34.**	**35.**	**36.**	**37.**	**38.**	**39.**	**40.**
A	**B**	**D**	**B**	**A**	**A**	**B**	**A**

Question 1. Select ONLY ONE ANSWER (the best answer).

1.	An operating system is:
A.	Interface between the hardware and application programs
B.	Collection of programs that manages hardware resources
C.	System service provider to the application programs
D.	All of the mentioned

2.	Bootstrap program is loaded at _____
A.	Power-up
B.	Reboot
C.	Both and A and B
D.	None of the above

3.	When interrupt occurs, control is transferred to _____
A.	Interrupt service routine
B.	Operating system
C.	Hardware that has generated the interrupt
D.	None of the above

4.	Device-status table contains entry for _____
A.	Every application installed on a computer
B.	Each I/O device indicating its type, address, and state
C.	Each user indicating its access level.
D.	All of the above.

5.	Secondary storage is _____
A.	Large
B.	Extension of main memory
C.	Nonvolatile
D.	All of the above

6.	Which one of the following is not true?
A.	Kernel remains in the memory during the entire computer session
B.	Kernel is made of various modules which cannot be loaded in running operating system
C.	Kernel is the first part of the operating system to load into memory during booting
D.	Kernel is the program that constitutes the central core of the operating system

7.	Registers provide cache for _____
A.	Disk storage
B.	Device controllers
C.	Main memory
D.	Vectored interrupt system

8.	Initial program that initializes all aspects of the system, is called
A.	Hardware
B.	Firmware
C.	Software
D.	None of the above

9.	In Asymmetric Multiprocessing each processor is assigned _____
A.	A specific task
B.	Multiple tasks
C.	Both A and B
D.	None of the above

10.	What is true about Clustered system?
A.	Another name for multicore CPU.
B.	Multiple systems working together
C.	Same as a computer with multiple processor.
D.	Multiple systems sharing same memory.

11.	If we increase the size of the RAM to be as big as the hard disk, why we cannot remove the disk?
A.	Disk is non-volatile
B.	Disk is volatile
C.	RAM is non-volatile
D.	A and C

12.	These can cause a trap except
A.	Error
B.	Service Request
C.	Infinite loop
D.	Controller

13.	The operating system is responsible for the following activities in connection with process management
A.	Creating and deleting both user and system processes
B.	Deadlock handling
C.	process synchronization
D.	All of the above

14.	Which of the following is a memory management activity?
A.	Creating and deleting user and system process.
B.	Allocating and deallocating memory space as needed
C.	Creating and deleting file directories
D.	Disk scheduling

15.	The movement of storage in the CPU cache is managed by:
A.	Compiler
B.	Operating system
C.	Hardware
D.	Software

16.	Ensuring that all CPUs in a multiprocessor environment have the most recent value in their cache can be done by
A.	Cache coherency
B.	Caching
C.	Muti-tasking
D.	Parallel processing

17.	Buffering means:
A.	Storing data temporarily while it is being transferred
B.	Storing parts of data in faster storage for performance
C.	The overlapping of output of one job with input of other jobs
D.	Storing data in memory while it is being copied

18.	A user can get more rights by _____
A.	Hashing
B.	Privilege escalation
C.	Authentication
D.	Authorization

19.	Each IO device attached to a computer will have a software that makes the computer uses the device properly. It is called
A.	Device driver
B.	Device enabler
C.	Device operator
D.	None of the above

20.	Information associated with each process is stored in
A.	Process Storage
B.	PCB
C.	Process State
D.	Heap

21.	_____ allows selection of kernel from multiple disks, versions, kernel options.
A.	ROM
B.	BOOTSTRAP
C.	SYSGEN
D.	GRUB

22.	Programming interface to the services provided by the OS and cannot be directly accessed by programs
A.	System calls
B.	APIs
C.	System programs
D.	None of the above

23.	The monolithic structure used in UNIX
A.	Was easy to implement and maintain.
B.	Was difficult to implement and maintain
C.	Removed all nonessential components from the kernel
D.	Is divided into several layers where a layer doesn't need to know how operations at a lower layer are implemented

24.	Operating system service(s) that are helpful to the **user**:
A.	Resource allocation
B.	Protection and security
C.	Program execution
D.	All of above

25.	Which statement applies to MS-DOS?
A.	Single-tasking
B.	Single memory space
C.	Loads program into memory, overwriting all but the kernel
D.	All of the above

26.	Operating system service(s) that are for system **itself**
A.	Resource allocation
B.	User interface
C.	File manipulation
D.	All of above

27.	System calls can be mostly accessed through
A.	User-defined scripts
B.	System program
C.	IPC
D.	APIs

28.	Which of the following considered disadvantage when using microkernel?
A.	Difficult to port to new architectures
B.	Difficult to extend
C.	Performance overhead of user-kernel communication
D.	All of above

29.	Accounting services provided by the OS to
A.	allocate resources to each job concurrently
B.	keep track of which users use how much and what kinds of computer resources
C.	load a program into memory and to run that program
D.	to be constantly aware of possible errors

30.	The methods used for passing parameters to the OS are
A.	Registers, block (table) and stack
B.	Registers, block (table) and queue
C.	Registers, PCB and stack
D.	Registers, PCB and queue

31.	The state transition from waiting to running happens when a process
A.	Is interrupted
B.	Performs an I/O or event handling
C.	This is impossible transition
D.	Completes an I/O or event handling

32.	What is the ready state of a process?
A.	When process is waiting to be assigned to a processor
B.	When process is waiting for some event to occur
C.	When process is using the CPU
D.	None of the mentioned

33.	_____ controls the degree of multiprogramming
A.	Long-term scheduler
B.	Short-term scheduler
C.	Medium-term scheduler
D.	Dispatcher

34.	What is inter-process communication?
A.	Communication within the process
B.	Communication between two processes
C.	Communication between two threads of same process
D.	None of the mentioned

35.	The Purpose of Co-operating Process is _____.
A.	Information Sharing
B.	Convenience
C.	Computation Speed-Up
D.	All of the above

36.	In UNIX, a new process is created by _____ system call. This system call returns a process ID which is generally the process id of the child process created
A.	new()
B.	fork()
C.	create()
D.	None of the mentioned

37.	Which system call can be used by a parent process to determine the termination of child process?
A.	wait()
B.	exit()
C.	fork()
D.	get()

38.	Why may two processes prefer to communicate via shared memory rather than massage passing?
A.	Shared memory can be faster
B.	Shared memory is easier to implement
C.	Shared memory is useful for smaller amount of data
D.	All of the above

39.	The address of the next instruction to be executed by the current process is provided by the _____
A.	CPU registers
B.	Program counter
C.	Process stack
D.	Pipe

40.	What is the output of the following code segment?
	`if (fork()== 0)`
	`printf ("p");`
	`else`
	`{ wait(); printf ("c"); }`

A.	pc
B.	cp
C.	p
D.	c