Question Bank

Subject: Operating System **Subject Code: BCSE1-411**

Objective Type Questions with Solutions

1. What is operating system?
a) collection of programs that manages hardware resources
b) system service provider to the application programs
c) link to interface the hardware and application programs
d) all of the mentioned

2. To access the services of operating system, the interface is provided by the
a) system calls
b) API
c) library
d) assembly instructions

3. Which one of the following is not true?
a) kernel is the program that constitutes the central core of the operating system
b) kernel is the first part of operating system to load into memory during booting
c) kernel is made of various modules which can not be loaded in running operating system
d) kernel remains in the memory during the entire computer session

4. Which one of the following error will be handle by the operating system?
a) power failure
b) lack of paper in printer
c) connection failure in the network
d) all of the mentioned

5. The main function of the command interpreter is
a) to get and execute the next user-specified command
b) to provide the interface between the API and application program
c) to handle the files in operating system
d) none of the mentioned

6. By operating system, the resource management can be done via
a) time division multiplexing
b) space division multiplexing
c) both (a) and (b)
d) none of the mentioned

7. If a process fails, most operating system write the error information to a
a) log file
b) another running process
c) new file
d) none of the mentioned

8. Which facility dynamically adds probes to a running system, both in user processes and in the kernel?
a) DTrace
b) DLocate
c) DMap
d) DAdd

9. Which one of the following is not a real time operating system?
a) VxWorks
b) Windows CE
c) RTLinux
d) Palm OS

10. The OS X has
a) monolithic kernel
b) hybrid kernel
c) microkernel
d) monolithic kernel with modules

11. What is the reusable resource?
a) that can be used by one process at a time and is not depleted by that use
b) that can be used by more than one process at a time
c) that can be shared between various threads
d) none of the mentioned

12. Which of the following condition is required for deadlock to be possible?
a) mutual exclusion
b) a process may hold allocated resources while awaiting assignment of other resources
c) no resource can be forcibly removed from a process holding it
d) all of the mentioned

13. A system is in the safe state if
a) the system can allocate resources to each process in some order and still avoid a deadlock
b) there exist a safe sequence
c) both (a) and (b)
d) none of the mentioned

14. The circular wait condition can be prevented by
a) defining a linear ordering of resource types
b) using thread
c) using pipes
d) all of the mentioned

15. Which one of the following is the deadlock avoidance algorithm?
a) banker's algorithm
b) round-robin algorithm
c) elevator algorithm
d) karn's algorithm

16. What is the drawback of banker's algorithm?
a) in advance processes rarely know that how much resource they will need
b) the number of processes changes as time progresses
c) resource once available can disappear
d) all of the mentioned

17. For effective operating system, when to check for deadlock?
a) every time a resource request is made
b) at fixed time intervals
c) both (a) and (b)
d) none of the mentioned

18. A problem encountered in multitasking when a process is perpetually denied necessary resources is called
a) deadlock
b) starvation
c) inversion
d) aging

.
19. Which one of the following is a visual (mathematical) way to determine the deadlock occurrence?
a) resource allocation graph
b) starvation graph
c) inversion graph
d) none of the mentioned

20. To avoid deadlock
a) there must be a fixed number of resources to allocate
b) resource allocation must be done only once
c) all deadlocked processes must be aborted
d) inversion technique can be used

21 Earliest deadline first algorithm assigns priorities according to :
a) periods
b) deadlines
c) burst times
d) None of these

22 A process P1 has a period of 50 and a CPU burst of t1 = 25, P2 has a period of 80 and a CPU burst of 35. The total CPU utilization is :
a) 0.90
b) 0.74
c) 0.94
d) 0.80.

23 In the above question, the priorities of P1 and P2 :
a) remain the same throughout
b) keep varying from time to time
c) None of these

24 In Question number 2, can the two processes be scheduled using the EDF algorithm without missing their respective deadlines ?
a) Yes
b) No
c) Maybe

25 Using EDF algorithm practically, it is impossible to achieve 100 percent utilization due to : (choose all that apply)
a) the cost of context switching
b) interrupt handling
c) power consumption
d) All of these

26 T shares of time are allocated among all processes out of N shares in _____ scheduling algorithm.
a) rate monotonic
b) proportional share
c) earliest deadline first
d) None of these

27. If there are a total of T = 100 shares to be divided among three processes, A, B and C. A is assigned 50 shares, B is assigned 15 shares and C is assigned 20 shares.

i) A will have _____ percent of the total processor time.
a) 20
b) 15

c) 50
d) None of these
Answer : c
ii) B will have _____ percent of the total processor time.
a) 20
b) 15
c) 50
d) None of these
Answer : b
iii) C will have _____ percent of the total processor time.
a) 20
b) 15
c) 50
d) None of these
Answer : a
iv) If a new process D requested 30 shares, the admission controller would :
a) allocate 30 shares to it
b) deny entry to D in the system
c) None of these
Answer : b

28. Which of the following page replacement algorithms suffers from Belady's Anomaly?
a) Optimal replacement
b) LRU
c) FIFO
d) Both optimal replacement and FIFO
Answer: c.

29. A process refers to 5 pages, A, B, C, D, E in the order : A, B, C, D, A, B, E, A, B, C, D, E. If the page replacement algorithm is FIFO, the number of page transfers with an empty internal store of 3 frames is :
a) 8
b) 10
c) 9
d) 7
Answer: c

30 In question 29, if the number of page frames is increased to 4, then the number of page transfers :
a) decreases
b) increases
c) remains the same
d) None of these

31 A memory page containing a heavily used variable that was initialized very early and is in constant use is removed, then the page replacement algorithm used is :
a) LRU
b) LFU

c) FIFO
d) None of these
Answer: c

32 A virtual memory system uses First In First Out (FIFO) page replacement policy and allocates a fixed number of frames to a process. Consider the following statements :
P : Increasing the number of page frames allocated to a process sometimes increases the page fault rate
Q : Some programs do not exhibit locality of reference
Which of the following is TRUE?
a) Both P and Q are true, and Q is the reason for P
b) Both P and Q are true, but Q is not the reason for P
c) P is false but Q is true
d) Both P and Q are false
Answer: c

33. Users _____ that their processes are running on a paged system.
a) are aware
b) are unaware
c) None of these
Answer: b

34 If no frames are free, _____ page transfer(s) is/are required.
a) one
b) two
c) three
d) four
Answer: b

35. When a page is selected for replacement, and its modify bit is set :
a) the page is clean
b) the page has been modified since it was read in from the disk
c) the page is dirty
d) a and b
Answer: b and c

36. The aim of creating page replacement algorithms is to :
a) replace pages faster
b) increase the page fault rate
c) decrease the page fault rate
d) to allocate multiple pages to processes
Answer: c

37. A FIFO replacement algorithm associates with each page the _____
a) time it was brought into memory
b) size of the page in memory
c) page after and before it
d) All of these
Answer: a
38. Optimal page – replacement algorithm is :
a) Replace the page that has not been used for a long time
b) Replace the page that has been used for a long time
c) Replace the page that will not be used for a long time
d) None of these
Answer: c

39/ Optimal page – replacement algorithm is difficult to implement, because :
a) it requires a lot of information
b) it requires future knowledge of the reference string
c) it is too complex
d) it is extremely expensive

Answer: b

40. LRU page – replacement algorithm associates with each page the _____
a) time it was brought into memory
b) the time of that page's last use
c) page after and before it
d) All of these
Answer: b

41. For 3 page frames, the following is the reference string :
7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1
i) How many page faults does the LRU page replacement algorithm produce ?
a) 10
b) 15
c) 11
d) 12
Answer: d

ii) How many page faults does the FIFO page replacement algorithm produce ?
a) 10
b) 15
c) 11
d) 12
Answer: b

42. The two methods how LRU page replacement policy can be implemented in hardware are : (choose two)

a) Counters
b) RAM
c) Stack
d) Registers
Answer: a and c

44. Which principle states that programs, users and even the systems be given just enough privileges to perform their task?
a) principle of operating system
b) principle of least privilege
c) principle of process scheduling
d) none of the mentioned
Answer:b

45. _____ is an approach to restricting system access to authorized users.
a) Role-based access control
b) Process-based access control
c) Job-based access control
d) none of the mentioned
Answer:a

46. For system protection, a process should access
a) all the resources
b) only those resources for which it has authorization
c) few resources but authorization is not required
d) all of the mentioned
Answer:b

47. The protection domain of a process contains
a) object name
b) rights-set
c) both (a) and (b)
d) none of the mentioned
Answer:c

48. If the set of resources available to the process is fixed throughout the process's lifetime then its domain is
a) static
b) dynamic
c) neither static nor dynamic
d) none of the mentioned
Answer:a

49. Access matrix model for user authentication contains
a) a list of objects

b) a list of domains
c) a function which returns an object’s type
d) all of the mentioned
Answer:d

50. Global table implementation of matrix table contains
a) domain
b) object
c) right-set
d) all of the mentioned
Answer:d