Course Code: CAT308

Course name: COMPREHENSIVE COURSE WORK

ax. Marks: 50

Duration: 1Hour

tructions:
(1) Each question carries one mark. No negative marks for wrong answers
(2) Total number of questions: 50
(3) All questions are to be answered. Each question will be followed by 4 possible answers of which only ONE is correct.
(4) If more than one option is chosen, it will not be considered for valuation.

2, 3, 25, 34.

The instruction cycle includes which of the following?

a) Instruction Decode b) Instruction Fetch c) Instruction Execute d) All of the above

In cache memory, what does the "hit ratio" represent?

a) Percentage of cache used b) Access speed of RAM c) Fraction of memory accesses satisfied by cache d) Number of CPU cycles saved

The advantage of ..... is that it can reference memory without paying the price of having a full memory address in the instruction.

a) Direct addressing b) Indexed addressing c) Register addressing d) Register Indirect addressing

The central processing unit and memory are located on the

a) Expansion board b) Motherboard c) Storage device d) None of these

RISC stands for

a) Reduce Instruction Set Computer b) Risk Instruction Sequential Compilation c) Risk Instruction Source Compiler d) None of the above

Which of the following is an example of a volatile memory?

a) ROM b) Flash c) Hard disk d) RAM

The minimum time delay between two successive memory read operations is ____

a) Cycle time b) Latency c) Delay d) None of the mentioned

8. Which register is used to store the memory location to be accessed next?

a) MAR B) MDR C) PC D) IR

9. The memory blocks are mapped on to the cache with the help of _____

a) Hash functions b) Vectors c) Mapping functions d) None of the mentioned

10. The CPU responds to the interrupt signal by storing the _____ address from the program counter.

a) Stack b) Memory c) Return d) I/O

11. The asymptotic time complexity to find an element in a linked list is:

a) O(1) b) O(n) c) O(n^2) d) O(n^4)

12. Which tree traversal performed on a binary search tree, results in ascending order listing of the keys?

a) Pre-order b) In-order c) Post-order d) Level-order

13. Which of the following is not the application of stack?

a) Data Transfer between two asynchronous process b) Compiler Syntax Analyzer c) Tracking of local variables at run time d) A parentheses balancing program

14. The number of elements in the adjacency matrix of a graph having 7 vertices is

a) 7 b) 14 c) 49 d) None of these

15. What is the value of the postfix expression 6 3 2 4 + – *?

a) 74 b) -18 c) 22 d) 40

16. Which data structure is used to implement priority queues?

a) Stack b) Queue c) Binary Search Tree d) Heap

17. In a stack, if a user tries to remove an element from an empty stack, it is called as -----?

a) Empty Collection b) Overflow c) Garbage Collection d) Underflow

18. Which data structure is suitable for implementing recursive algorithms?

a) Queue b) Stack c) Linked List d) Tree

19. Which of the following properties are obeyed by all three tree – traversals?

a) Left subtrees are visited b) Right subtrees are visited before left subtrees c) Root node is visited before left subtree d) Root node is visited before right subtree

before right subtrees

20 Which of the following application makes use of a circular linked list?

a) Recursive function calls
b) Undo operation in a text editor
c) Implement Hash Tables
d) Allocating CPU to resources

21 Which is the initial program that runs when a computer is power up or rebooted

a) Bootstrap program
b) Operating system
c) Device Driver
d) All of the above

22 In priority scheduling algorithm _____

a) CPU is allocated to the process with highest priority
b) CPU is allocated to the process with lowest priority
c) Equal priority processes cannot be scheduled
d) None of the mentioned

23 In a deadlock avoidance algorithm, Resource allocation state ids defined by.....

a) The number of available resources
b) The number of allocated resources
c) The maximum demands of the processes
d) All of the above

24 In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of _____

a) All process
b) Currently running process
c) Parent process
d) Init process

25 Calculate the internal fragmentation if page size is 4KB and process size is 103KB.

a) 3KB
b) 4KB
c) 1KB
d) 2KB

26 In multilevel feedback scheduling algorithm _____

a) A process can move to a different classified ready queue
b) Classification of ready queue is permanent
c) Processes are not classified into groups
d) None of the mentioned

27 What are the two steps of a process execution?

a) I/O & OS Burst
b) CPU & I/O Burst
c) Memory & I/O Burst
d) OS & Memory Burst

28 Which of the following is true with regard to Round Robin scheduling technique?

a) Responds poorly to short process with small time quantum.
b) Works like SJF for larger time quantum
c) Does not use a prior knowledge of burst times of processes.
d) Ensure that the ready queue is always of the same size.

29 The process of swapping data between memory and disk when memory is full is called:

a) Fragmentation b) Segmentation c) Paging d) Thrashing

30 A minimum of _____ variable(s) is/are required to be shared between processes to solve the critical section problem.

a) One b) Two c) Three d) Four

31 The component of an Expert system is_____.

a) Knowledge Base b) Inference Engine c) User Interface d) All of the above

32 What is used in determining the nature of the learning problem?

a) Environment A. b) Feedback c) Problem d) All of the mentioned

33 A technique that was developed to determine whether a machine could or could not demonstrate the artificial intelligence known as the___

a) Boolean Algebra b) Turing Test c) Logarithm d) Algorithm

34 Which is used for utility functions in game playing algorithm?

a) Linear polynomial b) Weighted polynomial c) Polynomial d) Linear weighted polynomial

35 In the context of AI, what does NLP stand for?

a) Neural Language Processing b) Natural Language Processing c) Non-linear Processing d) None of the Above

36 The external actions of the agent is selected by _____

a) Perceive b) Performance c) Learning d) Actuator

37 The performance of an agent can be improved by _____

a) Learning b) Observing c) Perceiving d) None of the mentioned

38 Which is used to provide the feedback to the learning element?

a) Critic b) Actuators c) Sensor d) None of the mentioned

39 The Face Recognition system is based on?

a) Strong Artificial Intelligence approach b) Weak Artificial Intelligence approach c) Cognitive Artificial Intelligence approach d) Applied Artificial Intelligence approach

40 What kind of observing environments are present in artificial intelligence?

a) Partial b) Fully c) Learning d) Both Partial & Fully

41 Which of the following is NOT a type of database model?

a) Relational b) Hierarchical c) Network d) Sequential

42 Rows of a relation are known as the _____.

a) Degree b) Tuples c) Entity d) All of the above

43 Which one of the following commands is used for removing (or deleting) a relation forms the SQL database?

a) Delete b) Drop c) Remove d) All of the above

44 In order to undo the work of transaction after last commit which one should be used ?

a) View b) Commit c) Rollback d) Flashback

45 What is the purpose of normalization in database design?

a) To reduce data redundancy b) To increase data security c) To improve query performance d) To encrypt data

46 When transaction Ti requests a data item currently held by Tj , Ti is allowed to wait only if it has a timestamp larger than that of Tj (that is, Ti is younger than Tj). Otherwise, Tj is rolled back (Tj is wounded by Ti). This is

a) Wait-die b) Wait-wound c) Wound-wait d) (Wait

47 Which refers to a property of computer to run several operations simultaneously and possible as computers await response of each other

a) Concurrency b) Deadlock c) Backup d) Recovery

48 A _____ is a special kind of a store procedure that executes in response to certain action on the table like insertion, deletion or updation of data.

a) Procedures b) Triggers c) Functions d) None of the mentioned

49 The SQL command used to delete all records from a table but keep the structure intact is----?

a) Delete b) Truncate c) Drop d) Remove

50 Which database handles full text data, image, audio and video?

a) Multimedia database b) Video on demand database c) Graphics database d) Transaction database

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