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SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SIXTH SEMESTER B.TECH DEGREE EXAMINATION (S), AUGUST 2023**COMPUTER SCIENCE AND ENGINEERING****(2020 SCHEME)****Course Code : 20CST308****Course Name : Comprehensive Course Work****Max. Marks :50****Duration : 75 Minutes****PART A****(Answer all questions. Each question carries 1 mark)**

- 1 Given below are two statements.
Statement I: Breadth-First Search is optimal when all the step costs are equal whereas uniform-cost search is optimal with any step-cost.
Statement II: When all the step costs are same uniform-cost search use more nodes at depth d than the Breadth-First Search.
In light of the above statements, choose the **correct** answer from the options given below.
- | | |
|---|---|
| A. Both Statement I and Statement II are true | B. Both Statement I and Statement II are false |
| C. Statement I is true but Statement II is false | D. Statement I is false but Statement II is true |
- 2 Who coined the term Sparse Matrix?
- | | |
|---------------------------|-------------------------|
| A. Arthur Cayley | B. Chris Messina |
| C. Harry Markowitz | D. Carl Hamacher |
- 3 What is a hash table?
- | | |
|--|---|
| A. A structure that maps values to keys | B. A structure used for storage |
| C. A structure that maps keys to values | D. A structure used to implement stack and queue |
- 4 If several elements are competing for the same bucket in the hash table, what is it called?
- | | |
|-----------------------|-----------------------|
| A. Diffusion | B. Collision |
| C. Replication | D. Duplication |
- 5 The given array is arr = {1,2,4,3}. Bubble sort is used to sort the array elements. How many iterations will be done to sort the array?
- | | |
|-------------|-------------|
| A. 1 | B. 2 |
| C. 3 | D. 4 |
- 6 What does 'stack underflow' refer to?
- | | |
|--|---|
| A. accessing item from an undefined stack | B. adding items to a full stack |
| C. removing items from an empty stack | D. index out of bounds exception |
- 7 System calls of the operating system provides interface to
- | | |
|--------------------|---------------------|
| A. programs | B. processes |
| C. services | D. Utilities |
- 8 A systematic procedure for providing the CPU to new process is known as
- | | |
|-----------------------------|---------------------------|
| A. Context Switching | B. Synchronization |
| C. Deadlock | D. Semaphore |
- 9 Logical memory is broken into blocks of the same size called
- | | |
|------------------|---------------------------------|
| A. Frames | B. Backing store |
| C. Pages | D. None of the mentioned |

- 10 In the algorithm, the disk arm goes as far as the final request in each direction, then reverses direction immediately without going to the end of the disk.
- A.** LOOK **B.** SCAN
C. C-SCAN **D.** C-LOOK
- 11 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. All of the mentioned **D.** None of the mentioned
- 12 In a timeshare operating system, when the time slot assigned to a process is completed, the process switches from the current state to?
- A.** Ready state **B.** Blocked state
C. Suspended state **D.** Terminated state
- 13 The size of virtual memory depends on the size of the
- A.** data bus **B.** main memory
C. address bus **D.** none of the above
- 14 The memory devices which are similar to EEPROM but differ in the cost effectiveness is
- A.** Flash memory **B.** Blue-ray devices
C. Memory sticks **D.** CMOS
- 15 What does VLIW stands for?
- A.** Very Large Instruction Word **B.** Very Long Instruction Word
C. Very Long Instruction Width **D.** Very Long Instruction Width
- 16 The access time of memory isthe time required for performing any single CPU operation
- A.** Shorter than **B.** Longer than
C. Negligible than **D.** Same as
- 17 Which of the following interrupts are initiated by an instruction?
- A.** External **B.** Internal
C. Hardware **D.** Software
- 18 _____ is the branch logic that provides decision-making capabilities in the control unit:
- A.** Unconditional transfer **B.** Controlled transfer
C. Conditional transfer **D.** None of these
- 19 Which of the following is a procedure for acquiring the necessary locks for a transaction where all necessary locks are acquired before any are released?
- A.** Record controller **B.** Exclusive lock
C. Authorization rule **D.** Two phase lock
- 20 BCNF is not used for cases where a relation has
- A.** Two (or more) candidate keys **B.** Two candidate keys and composite
C. The candidate key overlap **D.** Two mutually exclusive foreign keys
- 21 Relations produced from E - R Model will always be in _____.
- A.** 1 NF **B.** 2 NF
C. 3 NF **D.** 4 NF
- 22 If the attribute of relation schema R is member of some candidate key then this type of attributes are classified as
- A.** atomic attribute **B.** candidate attribute
C. nonprime attribute **D.** prime attribute
- 23 Set of possible data values is called
- A.** attribute **B.** degree
C. tuple **D.** domain
- 24 Functional Dependencies are the types of constraints that are based on_____

