

CT PET-2018

Part - B

PhD COMPUTER SCIENCE AND ENGINEERING Sample Paper

Note: All Questions are compulsory. Each question carry one mark.

1. Infrared signals can be used for short range communication in a closed area using _____ propagation.

- (A) ground (B) sky
(C) line of sight (D) space

2. A bridge has access to _____ address in the same network.

- (A) Physical (B) Network
(C) Datalink (D) Application

3. The bit rate of a signal is 3000 bps. If each signal unit carries 6 bits, the baud rate of the signal is _____.

- (A) 500 baud/sec (B) 1000 baud/sec
(C) 3000 baud/sec (D) 18000 baud/sec.

4. Which of the following suffices to convert an arbitrary CFG to an LL(1) grammar ?

- (A) Removing left recursion alone
(B) Removing the grammar alone
(C) Removing left recursion and factoring the grammar
(D) None of the above

5. A shift reduce parser suffers from

- (A) shift reduce conflict only
(B) reduce reduce conflict only
(C) both shift reduce conflict and reduce reduce conflict
(D) shift handle and reduce handle conflicts

6. Regression testing is primarily related to

- (A) Functional testing (B) Development testing
(C) Data flow testing (D) Maintenance testing

7. How many different truth tables of the compound propositions are there that involve the propositions p & q ?

- (A) 2 (B) 4
(C) 8 (D) 16

8. KPA in CMM stands for

- (A) Key Process Area (B) Key Product Area
(C) Key Principal Area (D) Key Performance Area

9. _____ of a system is the structure or structures of the system which comprise software elements, the externally visible properties of these elements and the relationship amongst them.

- (A) Software construction (B) Software evolution
(C) Software architecture (D) Software reuse

10. Consider a complete bipartite graph $k_{m,n}$. For which values of m and n does this, complete graph have a Hamilton circuit

- (A) $m = 3, n = 2$ (B) $m = 2, n = 3$ (C) $m = n > 2$
(D) $m = n > 3$

11. Object Request Broker (ORB) is

- I. A software program that runs on the client as well as on the application server
II. A software program that runs on the client side only.
III. A software program that runs on the application server, where most of the components reside.
(A) I, II & III (B) I & II
(C) II & III (D) I only

12. In a paged memory management algorithm, the hit ratio is 70%. If it takes 30 nanoseconds to search Translation Look-aside Buffer (TLB) and 100 nanoseconds (ns) to access memory, the effective memory access time is

- (A) 91 ns (B) 69 ns
(C) 200 ns (D) 160 ns

13. When we pass an array as an argument to a function, what actually gets passed?

- (A) Address of the array
(B) Values of the elements of the array
(C) Base address of the array
(D) Number of elements of the array

14. A clustering index is created when _____.

- (A) Primary key is declared and ordered
(B) no key ordered
(C) Foreign key ordered
(D) there is no key and no order

15. Let $R = \{A, B, C, D, E, F\}$ be a relation schema with the following dependencies $C \rightarrow F, E \rightarrow A, EC \rightarrow D, A \rightarrow B$ which of the following is a key for R ?

- (A) CD (B) EC
(C) AE (D) AC

16. Manager's salary details are hidden from the employee. This is called as

- (A) Conceptual level data hiding
(B) Physical level data hiding
(C) External level data hiding
(D) Local level data hiding

17. Data Integrity control uses _____

- (A) Upper and lower limits on numeric data.
(B) Passwords to prohibit unauthorized access to files.
(C) Data dictionary to keep the data
(D) Data dictionary to find last access of data

18. GO BOTTOM and SKIP-3 commands are given one after another in a database file of 30 records. It shifts the control to

- (A) 28th record (B) 27th record
(C) 3rd record (D) 4th record

19. Which of the following operators can not be overloaded in C++ ?

- (A) * (B) +=
(C) == (D) ::

20. The correct way to round off a floating number x to an integer value is

- (A) $y = (\text{int})(x + 0.5)$ (B) $y = \text{int}(x + 0.5)$
(C) $y = (\text{int})x + 0.5$ (D) $y = (\text{int})((\text{int})x + 0.5)$

21. _____ is often used to prove the correctness of a recursive function.

- (A) Diagonalization
(B) Commutativity
(C) Mathematical Induction
(D) Matrix Multiplication

22. Big - O estimate for $f(x) = (x + 1) \log(x^2 + 1) + 3x^2$ is given as

- (A) $O(x \log x)$ (B) $O(x^2)$
(C) $O(x^3)$ (D) $O(x^2 \log x)$

23. How many edges are there in a forest of t -trees containing a total of n vertices?

- (A) $n + t$ (B) $n - t$
(C) $n * t$ (D) n^t

24. Active X controls are Pentium binary programs that can be embedded in _____

- (A) Word pages (B) URL pages
(C) Script pages (D) Web pages

25. Which of the following is widely used inside the telephone system for long-haul data traffic ?

- (A) ISDN (B) ATM
(C) Frame Relay (D) ISTN

