

CT PET-2018

Part - B

Phd COMPUTER APPLICATION Sample Question Paper

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

1. Error detection at the data link layer is achieved by?

- [A] Bit stuffing
- [B] Cyclic redundancy codes
- [C] Hamming codes
- [D] Equalization

2. Which data communication method is used to transmit the data over a serial communication link?

- [A] Simplex
- [B] Half-duplex
- [C] Full duplex
- [D] All of above

3. In communication satellite, multiple repeaters are known as?

- [A] Detectors
- [B] Modulators
- [C] Stations
- [D] Transponders

4. Protocols are?

- [A] Agreements on how communication components and DTE's are to communicate
- [B] Logical communication channels for transferring data
- [C] Physical communication channels used for transferring data
- [D] None of above

5. Loss in signal power as light travels down the fiber is called?

- [A] Attenuation
- [B] Propagation
- [C] Scattering
- [D] Interruption

6. The part of machine level instruction, which tells the central processor what has to be done, is

- [A]. Operation code
- [B]. Address
- [C]. Locator
- [D]. Flip-Flop

7. Which of the following refers to the associative memory?

- [A]. the address of the data is generated by the CPU
- [B]. the address of the data is supplied by the users
there is no need for an address i.e. the data is used as an address the data are accessed
- [C]. as an address the data are accessed
- [D]. sequentially

8. To avoid the race condition, the number of processes that may be simultaneously inside their critical section is

- [A]. 8
- [B]. 1
- [C]. 16
- [D]. 0

9. A system program that combines the separately compiled modules of a program into a form suitable for execution

[A]Assembler [B]linking
order

[c]crosscompiler [D] load and
go

10. If x is an array of interger, then the value of &x[i] is same as

- [A]. &x[i-1] + size of (int)
- [B]. x + size of (int) * i
- [C]. x+i
- [D]. none of these

11. If S is an array of 80 characters, then the value assigned to S through the statement scanf("%s",S) with input 1 2 3 4 5 would be

- [A]. "12345"
- [B]. nothing since 12345 is an integer
- [C]. S is an illegal name for string
- [D]. %s cannot be used for reading in values of S

12.Data structure suitable for an application discussed in?

- [A] data design
- [B] architectural design
- [C] procedural design
- [D] interface design

13.Which of the following is minimum error code?

- [A] Octal code
- [B] Grey code
- [C] Binary code
- [D] Excess 3 code

14.Popular application flip-flop are ?

- [A] Counters
- [B] Shift registers
- [C] Transfer registers
- [D] All of above

15.SR Flip flop can be converted to T-type flip-flop if ?

- [A] S is connected to Q
- [B] R is connected to Q
- [C] Both S and R areshortend
- [D] S and R are connected to Q and Q' respectively

16.Register is a ?

- [A] Set of capacitor used to register input instructions in a digital computer
- [B] Set of paper tapes and cards put in a file
- [C] Temporary storage unit within the CPU having dedicated or general purpose use
- [D] Part of the auxiliary memory

17.For which of the following flip-flop the output clearly defined for all combinations of two inputs?

- [A] Q type flip-flop
- [B] R S type flip-flop
- [C] J K flip-flop
- [D] T flip-flop

18.An association of several structure of a data base can be expressed graphically by?

- [A] Tuple
- [B] Record
- [C] Relationship
- [D] Field

19.In an object oriented model, one object can access data of another object by passing?

- [A] Instance variable
- [B] Variable
- [C] Message
- [D] Function

20.The concept of data independence is similar to the concept of ?

- [A] Data Type
- [B] Abstract data type
- [C] Consolidation
- [D] Isolation

21.How is it possible that both programs and data can be stored on the same floppy disk?

- [A] Floppy disks can only store data, not programs
- [B] Programs and data are both software, and both can be stored on any memory device
- [C] A floppy disk has to be formatted for one or for the other
- [D] A floppy disks has two sides, one for data and one for program

22.The initial configuration of the queue is a,b,c,d (a is the front end). To get the configuration d,c,b,a one needs a minimum of ?

- [A] 2 deletions and 3 additions
- [B] 3 additions and 2 deletions
- [C] 3 deletions and 3 additions
- [D] 3 deletions and 4 additions

23.Linked list are not suitable data structure of which one of the following problems ?

- [A] Insertion sort
- [B] Binary search
- [C] Radix sort
- [D] Polynomial manipulation

24.Which of the following statement is true ?

- [A] Optimal binary search tree construction can be performed efficiently using dynamic programming.
- [B] Breath first search cannot be used to find converted components of a graph.
- [C] Given the prefix and post fix walks over a binary tree.The binary tree cannot be uniquely constructe
- [D] Depth first search can be used to find connected components of a graph.

25.Given two sorted lists of size m and n respectively.The number of comparisons needed in the worst case by the merge sort algorithm will be?

- [A] mn
- [B] max(m,n)
- [C] min(m,n)
- [D] m+n-1

26.Merge sort uses ?

- [A] Divide and conquer strategy
- [B] Backtracking approach
- [C] Heuristic search
- [D] Greedy approach

27.A vertex of degree one is called

- [A] pudent
- [B] isolated vertex
- [C] null vertex
- [D] colored vertex

28.Which of the following is useful in traversing a given graph by breadth first search?

- [A] Stack
- [B] Set
- [C] List
- [D] Queue

29. Which of the following derivation a top-down parser use while parsing an input string? The input is assumed to be scanned in left to right order ?

- [A] Leftmost derivation
- [B] Leftmost derivation traced out in reverse
- [C] Rightmost derivation
- [D] Rightmost derivation traced out in reverse

30. Macro processor is an inbuilt function of ?

- [A] Loader
- [B] Editor
- [C] Linker
- [D] Assembler

31. Forward reference table(FRT) is arranged like ?

- [A] Stack
- [B] Queue
- [C] Linked list
- [D] Double linked list

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33. The phenomenon of having a continuous glow of beam on the screen even after it is removed is called ?

- [A] Fluorescence
- [B] Persistence
- [C] Phosphorescence
- [D] Incandescence

34. The perspective anomaly in which the object behind the center of projection is projected upside down and backward onto the view plane is called ?

- [A] Perspective foreshortening
- [B] Vanishing view
- [C] View Confusion
- [D] Topological distortion

35. A queue is implemented using an array such that ENQUEUE and DEQUEUE operations are performed efficiently. Which one of the following statements is CORRECT (n refers to the number of items in the queue)?

- [A] Both operations can be performed in $O(1)$ time
- [B] At most one operation can be performed in $O(1)$ time but the worst case time for the other operation will be $\Omega(n)$
- [C] The worst case time complexity for both operations will be $\Omega(n)$
- [D] Worst case time complexity for both operations will be $\Omega(\log n)$

36. Let G be a weighted connected undirected graph with distinct positive edge weights. If every edge weight is increased by the same value, then which of the following statements is/are TRUE?

P: Minimum spanning tree of G does not change

Q: Shortest path between any pair of vertices does not change

- [A] P only
- [B] Q only
- [C] Neither P nor Q
- [D] Both P and Q

37. Which of the following languages is generated by the given grammar?

$S \rightarrow aS \mid bS \mid \epsilon$

[A] $\{a^n b^m \mid n, m \geq 0\}$

[B] $\{w \in \{a, b\}^* \mid \text{whasequal number of a's and b's}\}$

[C] $\{a^n \mid n \geq 0\} \cup \{b^n \mid n \geq 0\} \cup \{a^n b^n \mid n \geq 0\}$

[D] $\{a, b\}^*$

38. Which of the following is NOT a superkey in a relational schema with attributes V, W, X, Y, Z and primary key VY ?

[A] $VXYZ$

[B] $VWXXZ$

[C] $VWXY$

[D] $VWXYZ$

39. Which of the following is/are example(s) of stateful application layer protocols?

(i) HTTP

(ii) FTP

(iii) TCP

(iv) POP3

[A] (i) and (ii) only

[B] (ii) and (iii) only

[C] (ii) and (iv) only

[D] (iv) only

40. What will be the output of the following C program?

```
void count(int n) { static int d=1;
printf("%d ", n);
printf("%d ", d); d++;
if(n>1) count(n-1);
printf("%d ", d);
}
```

```
void main() {
```

```
count(3);
```

```
}
```

[A] 3 1 2 2 1 3 4 4 4

[B] 3 1 2 1 1 1 2 2 2

[C] 3 1 2 2 1 3 4

[D] 3 1 2 1 1 1 2