Hughes paper:
total 50 questions (1 hour).
Paper is like GAte CS .

section A : compulsory for CS and Comm students.
section B : for CS only
section C : for comm only.

questions :

1. given a digital ckt with nand gates. what is o/p Ans. nor gate
2. given an logical expr. x,y,z. simplify ans. xz
3. It is recommended to use which type of variables in a recursive module.
Ans. static variables.
4. which one of following is not memory management model?

given buddy system, monitors, paging, swapping Ans. monitors
5. what m/c is used to recognize context free grammar ? Ans. pushdown automata
6. Which type of grammar can be recognized by finite state m/c Ans. right linear grammar.

7. proc() {

static i=10;
printf("%d",i);
}

If this proc() is called second time, what is the o/p Ans. 11

8. int arr[] = {1,2,3,4}
int *ptr=arr;

*(arr+3) = *++ptr + *ptr++;

Final contents of arr[] Ans. {1,2,3,4}

9. TCP/IP hdr checksum : what method is used ?
Ans. one's complement of sum of one's complement.

10. CSMA/Cd is used in which lan Ans. ethernet

11. 8085 pgm : LXI sp, 2021,
LXI b, 1234 (??)

push b

contents of stack after pushing ?

12. One question on synchronous transmission :

ans. Timing info is embedded in data itself

13. What for start bit is used in RS232 transmission.

14. One solution for deadlock prevention for dining philosopher' s problem

Ans. Allow one person to take first left stick and then right stick
and remaining persons in reverse order.

15. 4bit seq no in sliding window protocol with selective repeat.
what is the max no. of acks that can be held at transmitter
ans. 8
16. given a height balanced tree. If we add one more node , how
many nodes gets unbalanced ? Ans. 3

17. Given a arbitrary pointer to an element in a singly linked list?
what is the time complexity for its deletion . AnsO(n)
18. what is the diff b/n c and c++

a. dynamic scoping
b. nested switching
c. declaration of variables in any code block
d. separation of compilation and linking

Ans. c (??)
19. which one is false ?

a. 0<x<y, n power x = O(n power y)
b. root of log(n) = O(log logn)
c. O(logn/100) = O(100 logn)
d. 2n not = O(n power k);

Ans. b or a. (??)
20. S->S+S; s->s*s; s->a

how many parse trees possible :a+a*a+a Ans. 5
21. 4-1 demultiplexeris to be implemented using a memory chip.
how many address lines and word length required Ans. 4, 1

22. Vector intr mechanism. in 8085.

Ans. fixed locations in memory when anintr comes.
23. ARP is used for : Ans. IP to MAC addr conversion.
24. given 100 to 999 nos. Probability of picking a no. with out
digit 7. Ans. 18/25.
25. Ten film rolls. 3 defective, prob. of picking up 2 defective
rolls with out replacement Ans. 6/90
26. The purpose of hashing is :
Ans. O(1) complexity

27. Given adjacency matrix for a directed graph with n vertices
and e edges. How much time will it take to find outindegree
of a vertex Ans. O(n)
28. No. of nodes of degree 2 in a binary tree with n leaf nodes.
Ans. n-1