

Hughes Technical Paper 3

section A 30m (Compulsary)

section B or C 20 m(changed)m

Attempt either B or C sec B contains CST C E&C

Better to attempt Electronics paper (Those who are having electronics background)

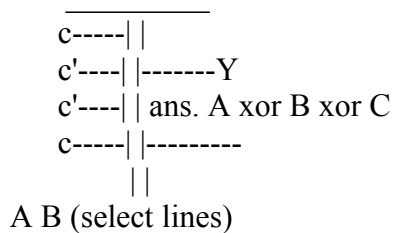
Section A

1. Which of the following is not correct

- a. $(x+y)'=x'.y'$ b. $(x'+y')'=x.y$
 c. $(x'.y')'=x+y$ d. $(x'+y')'=x'.y'$ [d]

2. Question on logic ckt. U have to find the output ans. $AB'+CD'+EF'$

3. Output of MUX



4. If X and Y are two sets. |X| and |Y| are corresponding coordinates and exact no.of functions from X to Y is

- 97 then
 a. $|X|=97 |Y|=1$ b. $|X|=1 |Y|=97$
 c. $|X|=97 |Y|=97$ d.

5. If two dies are thrown simultaneously what is the prob. of one of the dice getting face 6 ?
 a. 11/36 b. 1/3 c. 12/35 d. 1/36 [a]

6. The relation \leq on reals is a. a partial order because of symmetric and reflexive
 b. ... antisymmetric and
 c. not asymmetric and non reflexive
 d. not anti-symm and non reflexive

7. In C language the parameters are passed by a. values b. name c.reference d....

8. Advantage of SRAM over DRAM ans. faster

9. Dياس chaining related question (refer Z80)
 a. uniform interrupt priority
 b.non
 c.interfacing slower peripherals
 d.....

10. RAM chips arranged in 4X6 array and of 8kX4bit capacity each. How many address lines reqd. to access each byte
a. 12 b. 16 c. 15 d. 17

11. Question related to AVL trees regarding how many no. of nodes to be changed to become balanced after addition of a leaf node to a particular node. ans . 3

12. When following sequence is inserted in the binary search tree no. of nodes in left and right subtrees 52 86 64 20
3 25 14 9 85

13. Method used for Disk searching.. a. linked list b. AVL c. B-tree d. binary tree

14. Which of the following is correct statement.
a. 1's complement can have two zero representations
b. 2's represent an extra neg. number
c. 2's & 1's have no difference in representing 16-bit no.
d.

15. $AX=B$ where A is $m \times n$, b & X are column matrices of order m a. if $m < n$, X has infinite solutions
b. if $m=n$, rank of A $< n$ then X has trivial solutions c. d.

16. The option available in C++, not C:
a. dynamic scoping
b. declaration in the middle of code block
c. separate compiled and linked units
d.

17. `int a[4]={1,2,3,4};
int *ptr;
ptr=a;
(a+3)=(++ptr)+(*ptr++);`
A part of code is shown. The elements in A after the execution of this code.
a. 1 2 3 4 b. 1 2 3 6
c. compilation error d. 1 2 2 4 [a]

18. Critical section program segment is
a. enclosed by semaphores with P & V operations
b. deadlock avoidance
c. where shared resources are accessed
d. ...

19. when head is moving back and forth, the disk scheduling algorithm is _____
a) scan b) sstf c) fcfs d)....

20. how many times the loop will execute

```
LOOP LXI B,1526H
```

```
DCX B
```

```
JNZ LOOP
```

a) 1526H times b) 31 c) 21 d) 38

21. the addressing mode in which the address of the operand is expressed explicitly within the instruction

a) index addressing b) absolute c) indirect d) immediate

22. $(A - B) \cup (B - A) \cup (A \cap B) = ?$ where A, B are two sets A', B' are compliments of A and B

a) $A \cup B$ b) $A \cap B$ c).... d)....

23. The network that does not use virtual circuit

a) IP b) X.25 c).... d)..

24. source routing bridge

a) source will route the frame

b) frame will be routed with info in header

c).... d)..

25. cache access time 100 msec. main memory access time 800 msec if the hit ratio is 95% , what is mean access

time ...

26. The module that should be always reside in main memory is

a) loader b) link module c)... d)....

.... and some questions related to

1. addressing mode 2. assembler passes 3. linking and loading

4. file directory search 5. turning machine

6. finite state machine 7. daisy wheel

27. The order of algorithm to merge the two sorted lists of lengths m and n is

a. $O(m)$ b. $O(n)$ c. $O(m+n)$ d. $O(\log(m)+\log(n))$

28. A chocolate block is of 4 X 4 size. How many cuts are needed to make 1 X 1 size blocks. No simultaneous

vert. & horz. cuts.

29. Which among the following is not correct

a. $O(n) > O(\log n)$.. likewise

Section C

1. One question of Set Theory Like there Are two sets A and B and $(A-B) \cup (B-A) \cup (A \cap B)$

is equivalent to Ans. $A \cup B$

2. Union and intersection are in there sign conventions.
3. One question of probability Like between 100 and 999 how many no have the prob that they does not contain 7
Ans. 16/25 (not sure u can check by own)
4. Of Newton Rapson method...
5. Of power set A set contains $\{(f_i), a, \{a, b\}\}$ what is the powerset of it Ans. 8
6. A question of logic gates Ans. U can got the answer very easily
7. A question on the Booths algo Ans. The sequence is 1010101010101010
8. Relative addressing mode is used for Ans. Dont know.
9. For how many numbers there is no difference between little endian and big endian
Ans. 256
10. For the multiplication of two 8 bit numbers how much ROM will be used
Ans. 64k*16 ROM(Check it)
11. Why direct mapping is not good for the mapping of Cache Memory.
Ans. Dont know
12. What is the main property of Desiy I/O Sytem Ans.
13. A question on the nyquist theorem
Ans. 18000 bps
14. What is the shannon theorem...
Ans. Refer to data communication(Stalling) book
15. CSMA/CD protocol is used in
Ans. Ethernet
16. What is the limitation of the Pulse Code Modulation
Ans. Refer to data communication book
17. In CSMA/CD
Ans. The Access to the channel is probabilistic.
18. For an IP Router how many IP addresses
Ans. Check it i think Answer is Only One.
19. Which protocol u used when you want to know the IP address corresponding to a MAC Address
Ans. RARP

20. Which part of the IP header is used for the time limit of the packet.

Ans. TTL

21. Which Page Replacement algo will give the best result

Ans. By replacing that page which has the next reference after a long time. (optimal algo)

22. What the code will be said when it is called by another part and it is not completed yet

Ans. Reentrant Code.

23. three questions on the simple programs

24. There is a sequence of no and prepare a binary tree and tell how many nodes are in the left and right sub tree.

Ans. Check it Ans (4,7)

25. What is the rank of the graph

Ans. $e-n+k$

26. One question on the multithreading

27. Which traversal of the tree gives the node in the ascending order.

Ans. Inorder

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Ans. Inorder

29. What is garbage collector.