

OPERATING SYSTEM BASED QUESTIONS -----

19. A qn to find the physical address from a given virtual address, virtual to physical address table was provided

20 Scheduling Preemptive

21) Virtual to physical address mapping
page table given

22) which one of following is not memory management model? given buddy system, monitors, paging, swapping Ans. Monitors

23) 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.

24) given page table, page size and offset find the corresponding physical address ?
ans : a $(3 * 1024 + 576)$ (pageno * pagesize + offset)

25) In scheduling algorithms which are logically executed but suspended
a) preemptive
b) SJF
c) non preemptive
d) all the above
Ans : a

26 process states ? which is the correct order
a) timeout: ready -> running
b) blocked : ready -> running
c)
d)
ans: a

27) for converting infix expression to postfix what do we require
a) operand stack
b) operator stack
c)

28) once context switching occurs then ----- will take place
a) saving register
b) saving stack

- c)....
- d).....

29) what is not necessary condition in dead lock

30) machestor code does not improves

- A. clock recovery
- b. bandwidth efficiency
- c.

ANS: B

31) in demand paging overhead of context switching is more due to

- a. copy processes from disk to memory
- b. viceversa
- c. to get associative table
- d. swapping to the disk

32) what will be the result of the following program ?

```
char *gxxx()
{
    static char xxx[1024];
    return xxx;
}

main()
{
    char *g="string";
    strcpy(gxxx(),g);
    g = gxxx();
    strcpy(g,"oldstring");
    printf("The string is : %s",gxxx());
}
```

- a) The string is : string
- b) The string is :Oldstring
- c) Run time error/Core dump
- d) Syntax error during compilation
- e) None of these

Ans) b

33) What will be result of the following program?

```
void myalloc(char *x, int n)
{
    x= (char *)malloc(n*sizeof(char));
    memset(x,\0,n*sizeof(char));
}

main()
```

```

{
    char *g="String";
    myalloc(g,20);
    strcpy(g,"Oldstring");
    printf("The string is %s",g);
}

```

- a) The string is : String
- b) Run time error/Core dump
- c) The string is : Oldstring
- d) Syntax error during compilation
- e) None of these

Ans) c (check it)

MICROPROCESSOR BASED- - -

4. Using which pin it's possible to address 16 bit addresses even though there are only 8 address bits in 8085? Ans: ALE
5. resistance increases with temperature in a) Metal b) semiconductor
What is the O/P voltage wen i/p is 1 volt
6. Quality factor indicates a) Quality of inductor b) quality of capacitor
c) both
7. Security functionality is provided by which layer of OSI
8. Frequency spectrums for AM, FM and PM (figure given, u'veto tell which Kind of modulation it belongs to)
9. Among AM and FM which is better and why?
SR to JK flip flop conversion. Ans: S=JQ', R=KQ
10. LSB of a shift register is connected to its MSB, what is formed: Ans: RING Counter
11. 2-3 Qns based on Demorgan's laws (identities: $(A+b)' = A'b'$, etc)
12. 2 qns on Logic gates (O/p of logic gates)
- 13 Qn on pipeline architecture
14. Main memory cache direct mapping
Ans : 64
15. Address lines and data lines for 4K x 16

Ans : Addr 12, Data 16

16. Difference between synchronous and asynchronous transmission

17. Vector intr mechanism. in 8085.

Ans. fixed locations in memory when an intr comes.

18. qn. on karnaugh map for simplifying boolean expressions

- 1 1 -

1 - - 1

1 - - 1

- 1 1 -

karnaugh map

19 pc is incremented while executing ----- instruction

ans:fetch instruction

20 this is gates (NAND)problem

It means some gate figure has given with all NAND gate we have write equivalent gate

ans:OR gate

21) no.of flipflops for mod 11 counter

a.four

b.five

c.

22). no of comparators required for 4 bit parallel A/D comparator

a. 4

b. 16

c. 15

d. none

23) CPU have one interrupt pin and on to connect with external devices with some priority?

which type of the following is used?

a. parallel priority interrupt

b. daisy chain

c. RS flipflop

d.

24) in 32 bit representation, the range of numbers in 2's complement form

ans :-2 to the power of 31 to 2 to the power of 31 minus 1

DATASTRUCTURES BASED QUESTIONS -----

8) No. of nodes of degree 2 in a binary tree with n leaf nodes.

Ans. $n-1$

9. To sorting array of 10 elements which sorting is best

a)selection

b)bubble

c)tree sort

d)...

ans:a

10 To saving space point of view which sort is best

a)selection

b)insertion

c)both a & b

d)...

11 Which statement is wrong on heap

a)Any two childs should not same

b)..

c)..

d)...

ans:a

12) cyclometric complexity..

13) how many null pointer are there in N number binary tree

ans: $N+1$

14) Two sorted list of size n what are the maximum comparison in merge

ANS: $2n-1$

15) two sorted lists of n elements will take at least

find the order of complexity?

a. $2n$

b. $n/2$

c. $\text{square}(n)$

16)if there are n nodes in a binary tree, how many null pointers are there

ans: $n+1$;

17). if heap sort contains n elements, no of comparisons required are

- a. $\log(n)$
- b. height of heap sort
- c.
- d.

18) which of the following is efficient in terms of space

- a. insertion sort
- b. quick sort
- c. selection
- d. both a and c

19) in sorted table contains elements , which of the searching is false

- a. hash table
- b. binary searching

20) in associated memory for fast accessing which one is used

- a. single linked list
- b. double "
- c. hash table

21) for hashing which is best on terms of buckets

a)100 b)50 c)21 d)32 ans 32

22) max and avg. height of sorted binary tree

- a. $\log n$
- b $n \log n$

23) implementation of priority queue

- a. tree
- b linked list
- c doubly linked list

24) For a binary tree with n nodes, How many nodes are there which has got both a parent and a child?

25) Bubble sort : Given sequence of numbers what will be order of sequences after two iterations.

Ans: very trivial, but you should know what bubble sort does.

26)Bubble sort : how many swap operations has been done in the above process?

27)What data structures you should use for dictionary searching and it

should be capable of doing spell check also ?

Ans: Hashing

28) Which is the best scheduling algo. (given five of them)

Ans.: Shortest Job First with Pre-emption

29) Bubble sort is given., No of times it executes

ans. $n(n-1)/2$

30) The approximate ratio for no of internal nodes to total no

31) precedence order from high to low (() ++ /)

32) preorder of $A*(B+C)/D-G$ (*+ABC/-DG)

33) B-tree (failure nodes at same level)

of nodes in k-ary tree of depth n.

ans. $1/k$

34) merge sort time complexity ($O(n \log n)$)

35) while following sorting algorithm has average sorting behavior (heap sort)

36) in binary search tree which traversal is used for getting ascending order values (inorder)

37) fun(n)

```
{
  if(n<=2)
    return (1);
  else
    return ((fun(n-1)*fun(n-2)));
}
```

find the order of complexity of the programme.

possible answer ---- $N(2^n)$

38). average and worst time complexity in a sorted binary tree is

39) a tree is given and ask to find its meaning (parse-tree)

(expression tree)

ans. $((a+b)-(c*d))$ (not confirmed)

40) Compute the complexity of Binary search.

Ans : $O(\lg n)$ (Answer in detail. This is not a multiple choice question.

It carries more marks.)

41) A search procedure which associates an address with a key value and provides a mechanism for dealing with two or more values assigned to the same address to the same address is called.

- a) linear search
- b) binary search
- * c) hash coded search
- d) radix search

42) which data structure is needed to convert infix notations to postfix notations?

- a. linear list
- b. queue
- c. tree
- d. stack ans:d

43) recursive procedures are implemented by

- a. queues
- b. stacks
- c. linked lists
- d. strings

44) A linear list of elements in which deletion can be done from one end (front) and insertion can take place only at the other end (rear) is known as

- * a) queues
- b) stacks
- c) trees
- d) deque

45) A linear list in which elements can be added or removed at either end but not in the middle is known as

- a) queue
- * b) deque
- c) stack
- d) tree

46) which of the following sorting procedure is slowest

- a) quick sort
- b) heap sort
- c) shell sort
- * d) bubble sort

47) The complexity of bubble sort is $O(n^2)$, then n equals
ans: 2

48) given a height balanced tree. If we add one more node, how

many nodes gets unbalanced ? Ans. 3

49) Given a arbitrary pointer to an element in a singly linked list?
what is the time complexity for its deletion . Ans. $O(n)$

50) $S \rightarrow S+S$; $s \rightarrow s*s$; $s \rightarrow a$
how many parse trees possible : $a+a*a+a$ Ans. 5

51) order of Hashing time

52) A chocolate of size $n \times n$ is given and is to be made into pieces of size 1×1 . At a time both horizontal and a vertical cut is done. Find the order of complexity

- a) $O(n^2)$
- b) $O(n \log n)$
- c) $O(\log n)$

Ans : a

53) comparison between hashtable and binary tree

C & C++ BASED -----

21) It is recommended to use which type of variables in a recursive module.
Ans. static variables.

22) `proc() {`

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

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

23. `int arr[] = {1,2,3,4}`
`int *ptr=arr;`
`*(arr+3) = *++ptr + *ptr++;`
Final contents of `arr[]` Ans. {1,2,3,4}

24. c programs

```
func() {
static int i = 10;
printf("%d",i);
i++;
}
```

what is the value of `i` if the function is called twice ?

Ans : 11

25) f(char *p)

```
{  
  p[0]? f(++p):1;  
  printf("%c",*p);  
}
```

if call that fuction with f(Aabcd) what is the output??

ans:dcbaA (Just reversing the string)

26) f(char *p)

```
{  
  p=(char *)malloc(sizeof(6));  
  strcpy(p,"HELLO");  
}
```

main()

```
{  
  char *p="BYE";  
  f(p)  
  printf("%s",p);  
}
```

what is the o/p???

ans:HELLO

27)Strings in Java

a)Mutable

b)variable length string

c)...

d)....

28)If "AaBbCc" is passed to the char

char x(*a)

```
{  
  a[0]?x(a+1):1;  
  printf("%c",a[0]);  
  return 1;  
}
```

what will be the output?

29. f(*p)

```
{  
  p=(char *)malloc(6);  
  p="hello";  
  return;  
}
```

main()

```
{  
  char *p="bye";
```

```
f(p);  
printf("%s",p);  
}
```

what is the o/p?

ans:bye

30) which is related to thread

a. separate switching reg

b. " stack

c. " address space

31) in global static variable , declartion in a file

a. localization of scope

b. persistance of the value through out the file

32) about subroutine, precondition is false. what about post condition

a. post condition is not defined

b. post condition is always true

33) in product of x and y,

```
if(x=0|y=0)
```

```
    y=1;
```

```
else
```

```
    y=0;
```

```
(not cleared)
```

what is cyclometric complexity?

a. 3

b. 2

c. 1

d. 0

35)global variables in different files are

a:at compiletime

b) loading time

c) linking time

d)execution time

36)size of(int)

a) always 2 bytes

b) depends on compiler that is being used

c) always 32 bits

d) can't tell

37)which one will over flow given two programs

2

prog 1:

prog2:

main()

main()

```

{
int fact;
long int x;
fact=factorial(x);
}

{
int fact=0
for(i=1;i<=n;i++)
fact=fact*i;
}

```

```

int factorial(long int x)
{
if(x>1) return(x*factorial(x-1));
}

```

- a) program 1;
- b) program 2;
- c) both 1 & 2
- d) none

}

37) variables of function call are allocated in

- a) registers and stack
- b) registers and heap
- c) stack and heap
- d)

```

38) main(){
char str[5]="hello";
if(str==NULL) printf("string null");
else printf("string not null");
}

```

what is output of the program?

- a) string is null
- b) string is not null
- c) error in program
- d) it executes but prints nothing

```

39) void f(int value){
for (i=0;i<16;i++){
if(value &0x8000>>1) printf("1")
else printf("0");
}
}

```

what is printed?

- a) binary value of argument
- b) bcd value
- c) hex value
- d) octal value

40)

```
void f(int *p){
static val=100;
val=&p;
}
main(){
int a=10;
printf("%d ",a);
f(&a);
printf("%d ",a);
}
what will be out put?
a)10,10
```

41)

```
struct a{
int x;
float y;
char c[10];
}
union b{
int x;
float y;
char c[10];
}
which is true?
a) size of(a)!=sizeof(b);
b)
c)
d)
```

42)

```
# define f(a,b) a+b
#defiune g(c,d) c*d
```

find valueof f(4,g(5,6))
a)26 b)51 c) d)34

43)

```
main()
{
char a[10]="hello";
strcpy(a,"\0");
printf("%s",a);
}
out put of the program?
a) string is null b) string is not null c) program error d)nothing
```

44) char a[5][15];
int b[5][15];
address of a is 0x1000 and b is 0x2000 find address of a[3][4] and b[3][4]
assume char is 8 bits and int is 32 bits

a) b) c) d)

45) main()

```
{  
    fork();  
fork();  
fork();  
printf("\n hello");  
}
```

How many times print command is executed?

46)main()

```
{  
    int i,*j;  
    i=5;  
    j=&i;  
    printf("\ni= %d",i);  
    f(j);
```

```
printf("\n i= %d",i);  
}
```

void f(int*j)

```
{  
    int k=10;  
    j= &k;  
}
```

output is

a 5 10

b 10 5

c 5 5

d none

47) main()

```
{  
    int *s = "\0";
```

```
    if(strcmp(s,NULL)== 0)  
        printf("\n s is null")p
```

```

else
    printf("\n s is not null");
}

```

- 48) size of integer is
- 2 bytes
 - 4 bytes
 - machine dependant
 - compiler dependent.

- 49) int a[5][4]
 int is 2 bytes base address for array is 4000(Hexa)
 what will be addr for a[3][4]?
 int is 4 bytes same question.

DBMS BASED QUESTIONS -----

1)Q. type duplicates of a row in a table customer with non uniform key feild
 customer no. you can see

- delete from costomer where customer no. exists
 (select distinct customer no. from customer having count)
- delete customer a where customer no. in
 (select customer b where custermer no. equal to b custemor no.) and a rowid >
 b rowid
- delete customer a where custermor no. in
 (select customer no. from customer a, customer b)
- none of the above

2)Which is not specified in CODD's rules

3) Futional dependency $x \rightarrow y$ is shows that

a)if $x_1 = x_2$ then $y_1 = y_2$

b)...c)...d)...

ans:a

4) RDBMS-----

1.What is RDBMS...Def

5)Two tables are given.In 1st table 2 columns are there.one

isEmployee no,second is salary.In second table 3 columns are there,one is employee no,second is date,3rd is salary.

Select employee no,from table1,table 2.

How many records it will contain?.(This is somewhat difficult).

6)What is transaction?

- 7) The 4NF is for
- a) related to Multi-Value Dependency
 - b) related to transitive dependency
 - c) " function dependency
 - d) non trivial function or multi value dependency
- 8) What is indexing in databases?
- 9) What is atomicity?