



Texas Instruments Technical Test Paper Questions

Q1. How does the C compiler interpret the following two statements?

p=p+x;

q=q+y;

- a) p=p+x; q=q+y
- b) p=p+xq=q+y
- c) p=p+xq; q=q+y
- d) p=p+x/q=q+y

Q2. Which is not an advantage of using subroutines?

- a) Easier maintenance
- b) Runtime reduces
- c) Storage space reduces
- d) Modularity

Q3. Read the function conv() given below

```
conv(int t){ int u; u=5/9 * (t-32); return(u); }
```

What is returned?

- a) 15
- b) 0
- c) 16.1
- d) 29

Q4. What does the following function print?

```
func(int i)
{ if(i%2)return 0;
  else return 1;}
main()
```



```
{ int =3; i=func(i); i=func(i); printf("%d,i); }
```

- a) 3
- b) 1
- c) 0
- d) 2

Q5. A 1D - array A whose size is N is given and is divided into P partitions and an element x is to be searched in the array. Each partition is given to one processor. The elements are searched within the partition using a binary search. What is the time complexity of the algorithm?

- a) $O(N/P)$
- b) $O(P)$
- c) $O(\log(N/P))$
- d) $O(\log(N/P)) + O(P \log P)$

Q6. If the following code segment is to count the number of zeros in the given integer x in its binary representation, what is to be replaced by CONDITION?

```
int i, count, x;  
for(i=0, count=0; i<16; i++)  
if(CONDITION)  
count++;
```

- a) $(x \& (1 \ll i))$
- b) $! (x \& (1 \ll i))$
- c) $! (x \&\& (1 \ll i))$
- d) None of these

Q7. Given a matrix A. What is the minimum number of multiplications do you need to compute A^{10} ?

- a) 9
- b) 5



- c) 4
- d) 6

Q8. Given the piece of code

```
int a[50];  
int *pa;  
pa=a;
```

To access the 6th element of the array which of the following is incorrect?

- a) $*(a+5)$
- b) $a[5]$
- c) $pa[5]$
- d) $*(*pa + 5)$

Q9. The C language terminator is

- a) semicolon
- b) colon
- c) period
- d) exclamation mark

Q10. Which of the following is a semantic error?

- a) Division by zero
- b) Missing of a semicolon at the end of a statement
- c) Assigning a single precision real value to a long integer
- d) All the above

Q11. What is false about the following -- A compound statement is

- a) A set of simple statements
- b) Demarcated on either side by curly brackets



- c) Can be used in place of simple statement
- d) A C function is not a compound statement.

Q12. Write one statement equivalent to the following two statements:

```
x=sqr(a);  
return(x);
```

Choose from one of the alternatives

- a) `return(sqr(a));`
- b) `printf(sqr(a));`
- c) `return(a*a*a);`
- d) `printf(%d,sqr(a));`

Q13. A k-diagonal matrix is a $n \times n$ square matrix in which the elements on the principal diagonal and k diagonals above the principal diagonal and k diagonals below the principal diagonal only have non zero elements. Other elements are zeros. In order to save the space, the non zero elements are stored in a one dimensional array. The number of locations in this array are:

- a) $n*(n-k-1)/2$
- b) $n*(n-1)/(n-k)(n-k-2)$
- c) $n*(n-1)/(n-k)(n-k-2)$
- d) $n*n/(n-k-1)$

Q14. Write the code segment to insert an element p into the linked list after an element q? Make necessary pointer adjustments?

ANS:

```
p.next = q.next;  
q.next = p;
```

Q15. What is true about the following C functions?



- a) Need not return any value
- b) Should always return an integer
- c) Should always return a float
- d) Should always return more than one value

Q16. A memory of 20 bytes is allocated to a string declared as char *s then the following two statements are executed:

```
s=Entrance  
l=strlen(s);
```

What is the value of l ?

- a) 20
- b) 8
- c) 9
- d) 21

Q17. Main must be written as

- a) The first function in the program
- b) Second function in the program
- c) Last function in the program
- d) Anywhere in the program

Q18. Which of the following is not an infinite loop?

- a) `while(1){}`
- b) `for(;;)`
- c) `x=0;`
`do{ /*x unaltered within the loop*/ }`
`while(x == 0);`
- d) `# define TRUE 0 while(TRUE){ ...}`



Q19. Which of the following about the C comments is incorrect?

- a) Comments can go over multiple lines
- b) Comments can start anywhere in the line
- c) A line can contain comments without any language statements
- d) Comments can occur within comments

Q20. Which of the following about automatic variables within a function is correct?

- a) Its type must be declared before using the variable
- b) They are local
- c) They are not initialized to zero
- d) They are global