

HCL Sample Test Paper

Section A

1. Which of the following involves context switch,
- (a) system call
 - (b) privileged instruction
 - (c) floating point exception
 - (d) all the above
 - (e) none of the above
- Ans: (a)

2. In OST, terminal emulation is done in
- (a) sessions layer
 - (b) application layer
 - (c) presentation layer
 - (d) transport layer
- Ans: (b)

3. For a 25MHz processor , what is the time taken by the instruction which needs 3 clock cycles,
- (a)120 nano secs
 - (b)120 micro secs
 - (c)75 nano secs
 - (d)75 micro secs

4. For 1 MB memory, the number of address lines required,
- (a)11
 - (b)16
 - (c)22
 - (d) 24
- Ans. (b)

5. Semaphore is used for
- (a) synchronization
 - (b) dead-lock avoidance
 - (c) box
 - (d) none
- Ans. (a)

6. Which holds true for the following statement `class c: public A, public B`
- a) 2 member in class A, B should not have same name
 - b) 2 member in class A, C should not have same name
 - c) both
 - d) none
- Ans. (a)

7. OLE is used in

- a) inter connection in unix
- b) interconnection in WINDOWS
- c) interconnection in WINDOWS NT

8. Convert a given HEX number to OCTAL

9. Macros and function are related in what aspect?

- (a) recursion
- (b) varying no of arguments
- (c) hypochecking
- (d) type declaration

10. Preprocessor.. does not do which one of the following

- (a) macro
- (b) conditional compilation
- (c) in type checking
- (d) including load file

Ans. (c)

11. Piggy backing is a technique for

- a) Flow control
- b) Sequence
- c) Acknowledgement
- d) retransmission

Ans. (c)

12. In signed magnitude notation what is the minimum value that can be represented with 8 bits

- (a) -128
- (b) -255
- (c) -127
- (d) 0

13. There is an employee table with key fields as employee number data in every n'th row are needed for a simple following queries will get required results.

- (a) select A employee number from employee A, where exists from employee B where A employee no. \geq B employee having $(\text{count}(\ast) \bmod n) = 0$
- (b) select employee number from employee A, employee B where A employee number \geq B employee number group by employee number having $(\text{count}(\ast) \bmod n = 0)$
- (c) both (a) & (b)
- (d) none of the above

14. Type duplicates of a row in a table customer with non uniform key field customer number you can see

- a) delete from customer where customer number exists (select distinct customer number from customer having count)
- b) delete customer a where customer number in b rowid
- c) delete customer a where customer number in (select customer number from customer a, customer b)

d) none of the above

Section B

1. Given the following statement `enum day = { jan = 1 ,feb=4, april, may}` What is the value of may?

- (a) 4
- (b) 5
- (c) 6
- (d) 11
- (e) None of the above

2. Find the output for the following C program

```
main()
{int x,j,k;
j=k=6;x=2;
x=j*k;
printf("%d", x);
```

3. Find the output for the following C program

```
fn f(x)
{ if(x<=0)
return;
else f(x-1)+x;
}
```

4. Find the output for the following C program

```
i=20,k=0;
for(j=1;j<i;j=1+4*(i/j))
{k+=j<10?4:3;
}
printf("%d", k);
Ans. k=4
```

5. Find the output for the following C program

```
int i =10
main()
{
int i =20,n;
for(n=0;n<=i;)
{
int i=10;
i++;
}
printf("%d", i);
Ans. i=20
```

6. Find the output for the following C program

```
int x=5;
y= x&y
```

7. Find the output for the following C program

```
Y=10;
if( Y++>9 && Y++!=10 && Y++>10)
{printf("%d", Y);
else
printf("%d", Y);
}
```

Ans. 13

8. Find the output for the following C program

```
f=(x>y)?x:y
a) f points to max of x and y
b) f points to min of x and y
c)error
Ans. (a)
```

9. What is the sizeof(long int)

- (a) 4 bytes
- (b) 2 bytes
- (c) compiler dependent
- (d) 8 bytes

10. Which of the function operator cannot be over loaded

- (a) <=
- (b) ?:
- (c) =
- (d) *

11. Find the output for the following C program

```
main()
{intx=2,y=6,z=6;
x=y==z;
printf("%d",x)
}
```

Section C

Section C (Programming Skills) Answer the questions based on the following program

```
STRUCT DOUBLELIST
{ DOUBLE CLINKED
INT DET; LIST VOID
STRUCT PREVIOUS; (BE GIVEN AND A PROCEDURE TO DELETE)
STRUCT NEW; (AN ELEMENT WILL BE GIVEN)
```

```

}
DELETE(STRUCT NODE)
{NODE-PREV-NEXT NODE-NEXT;
NODE-NEXT-PREV NODE-PREV;
IF(NODE==HEAD)
NODE
}

```

1. In what case the prev was
 - (a) All cases
 - (b) It does not work for the last element
 - (c) It does not for the first element
 - (d) None of these

Answer the questions based on the following program

```

VOID FUNCTION(INT KK)
{KK+=20;
}
VOID FUNCTION (INT K)
INT MM,N=&M
KN = K
KN+ -=10;
}

```

2. What is the output of the following program

```

main()
{ int var=25,varp;
varp=&var;
varp p = 10;
fnc(varp)
printf("%d%d,var,varp);
}

```

- (a) 20,55
- (b) 35,35
- (c) 25,25
- (d)55,55

3. Here is the structure declaration of a doubly linked list

```

struct dlink
{
int nodeid;
struct dlink *next;
struct dlink *prev;
} dlink_t;

```

A pointer of the head of the linked list is maintained as a global variable, whose definition is `dlink_t *head`; The funct `remove_element(dlink_t *rp)`, needs to remove the node pointed to the `rp` and adjust the head. The first node's `prev` and the last node's `next` are `NULL`.

```

remove_element(dlink_t *rp)
{

```

```
rp->prev->next = rp->next;
rp->next->prev = rp->prev;
if( head == rp)
    head = rp->next;
```

} Which of the following statement is true about the fution remove_element

- a) It work when head is the same as rp
- b) It does not work when rp is the last element on the list
- c) It sets the head of the list correctly
- d) It works in all cases

Answer :B) It does...

4. Consider the following function written in c:

```
#define NULL 0
char *
index(sp,c)
register char *sp,c;
{
    do
    {
        if(*sp == c)
            return (sp);
    } while (*sp++);
    return NULL;
}
```

The first argument sp, is a pointer to a C string. The second argument, c, is a character. This function searches for the character c, in the string. If it is found a pointer to that location is returned else NULL is returned. This function works

- a) Always
- b) Always, but fails when the first byte contains the character c
- c) works when c is a non NULL character only
- d) Works only when the character c is found in the string

ans: a

5. What is printed when this program is executed

```
main()
{
    printf ("%d\n",f(7));
}
f(X)
{
    if ( <= 4)
        return x;
    return f(--x);
}
```

- a) 4
- b) 5
- c) 6
- d) 7

ans: a

6. On a machine where pointers are 4 bytes long, what happens when the following code is executed.

```
main()
{
    int x=0,*p=0;
    x++; p++;
    printf ("%d and %d\n",x,p);
}
```

- a) 1 and 1 is printed
 - b) 1 and 4 is printed
 - c) 4 and 4 is printed
 - d) causes an exception
7. Which of the following is the correct code for strcpy, that is used to copy the contents from src to dest?

- a) strcpy (char *dst,char *src)
{
 while (*src)
 *dst++ = *src++;
}
 - b) strcpy (char *dst,char *src)
{
 while(*dst++ = *src++)
}
 - c) strcpy (char *dst,char *src)
{
 while(*src)
 {
 *dst = *src;
 dst++; src++;
 }
}
 - d) strcpy(char *dst, char *src)
{
 while(*++dst = *++src);
}
- ans:b

8. Consider the following program

```
main()
{
    int i=20,*j=&i;
    f1(j);
    *j+=10;
    f2(j);
    printf("%d and %d",i,*j);
}
```

```

f1(k)
int *k;
{
    *k +=15;
}
f2(x)
int *x;
{
    int m=*x,*n=&m;
    *n += 10;
}

```

The values printed by the program will be

- a) 20 and 55
- b) 20 and 45
- c) 45 and 45
- d) 45 and 55
- e) 35 and 35

9.

9. what is printed when the following program is compiled and executed?

```

int
func (int x)
{
    if (x<=0)
    return(1);
    return func(x -1) +x;
}
main()
{
    printf("%d\n",func(5));
}

```

- a) 12
- b) 16
- c) 15
- d) 11

10. Consider the following of c code in two files which will be linked together and executed .

```

a.c:  int i;
      main()
      {
        i = 30;
        f1();
        printf("%d\n",i)
      }
b.c:  static int f1()
      {
        i+=10;
      }

```

- which of the following is true ?
- a) a.c will fail in compilation phase because f1() is not declared

- b) b.c will fail in compilation because the variable i is not declared
 - c) will print 30
 - d) will print 40
 - e) a & b
- ans: e) a & b

11. consider the following program:

```
# include
class x {
    public:
    int a;
    x();
};
x::x() { a=10; cout
class b:public x {
    public:
    b();
};
b::b() { a=20; cout
main ()
{
    b temp;
}
```

what will be the output of this prg?

- a) 10
 - b) 20
 - c) 2010
 - d) 1020
- ans: b