HCL Sample Paper

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1. Piggy backing is a technique for

a) Flow control
b) Sequence
c) Acknowledgement
d) retransmition

Ans. (c)

2. In OSI, terminal emulation is done in

(a) sessions layer
(b) application layer
(c) presentation layer
(d) transport layer

Ans: (b)

3.Bit parity check,when performed on a byte ,can catch

 a)odd number of errors

 b)even number of errors

 c)any number of errors

 d)none of the above

Ans: (a)

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

(a) -128
(b) -255

(c) -127
(d) 0

Ans: (c)

5. For 1 MB memory, the number of address lines required,

(a)11
(b)16
(c)20
(d) 24

Ans. (c)

6.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

Ans: (a)

7. Semaphore is used for

(a) synchronization
(b) dead-lock avoidence
(c) both a and b
(d) none

Ans. (a)

8. Which of the following involves context switch,

(a) system call
(b) priviliged instruction
(c) floating poitnt exception
(d) all the above
(e) none of the above

Ans: (a)

9.Virtual address are translated to physical address by

(a) the process

(b) operating system

(c) MMU

(d) All of the above

(e) None of the above

ans: (c)

10.convert the hexadecimal number 0xFEDB to the octal

(a) 177333

ans: (a)

11. OLE is a mechanism

a)in UNIX for network communication

b)in INTERNET for communication between nodes

c)for communication between processes in a NT system

d)used as a network layer protocol in NT & Windows systems

ans : (d)

12. an internet IP address of a node

a)has to be unique only for the domain of the node

b)has to be unique in the node's sub-network

c)has to be unique in the country in which the node is present

d)none of the above

ans : (b)

13. There is an employee table with key feilds as employer no.data in every n'th row are needed for a sample. Which of the following queries will get required results.

a) select A employe no. from employe A , where exists (select (max (emp_no)))from employe B

where A employe no. >= B employe having (count(*) mod n)=0

  b) select employe no. from employe A, employe B where A.employe no.>=B employ no.group by employe no.having(count(*) mod n)=0)

  c) both a& b

  d)none of the above

ans: (d)

14. Type duplicates of a row in a table customer with non unique key feild customer no. can use

a) delete from costomer where customer no. exists(select distinct customer no. from customer having count)

b) delete customer a where customer no. in (select cust_no from customer b where a.cust_no=b.cust_no) and

 a.rowid>b.rowid

c) delete customer a where custermor no. in (select customer no. from customer a, customer b group by a.cust_no

having (count(*)>1) and a.rowid>b.rowid);

d) none of the above

ans : (d)

15.which of the following is a feature of the ANSI C language and not present in Java?

 a)forward referencing

 b)variable length argument lists

 c)volatile modifier

 d)none of the above

ans: (b)

section 2 – C Programming

1.which of the following about the following two declarations is true

   i) int *F();

   ii)int (*F)();

 a)Both are identical

 b)the first is a correct declaration and second is wrong

 c) the first declaration is a function returning a pointer to an integer and the second is a pointer to a

    function returning int

 d)Both are different ways of declaring pointer to a function

ans : (c)

2.what are the values printed by the following program?

#define dprintf(expr) printf(#expr=%d\n",expr)

main()

{

int x=7;

int y=3;

dprintf(x/y);

}

a)#2=2 b)expr=2   c)x/y=2 d)none

ans (c)

3.which of the following is true of the following program

```
main()
{
char *c;
int *ip;
c=(char *)malloc(100);
ip=(int *)c;
free(ip);
}
```

a)the code functions properly by releasing all the memory allocated

b)results in compilation error as a pointer of various types cannot be equated

c)the program ties to free more memory than allocated and results in run time error

d) works well except when the machine runs low on memory and malloc is unabel to allocate the memory

ans : (d)

4.output

```
main()
{
int I;
char *p;
```

i=0x89;

p=(char *)i;p++;

printf("%x\n"p);

}

a)0x8c   b)0x4566788A c)0x8A d)0x8B e)none

ans : I don't know . it may be (c)

5.which of the following is not an ANSI c language keyword?

 a)volatile   b)function   c)default   d)const e)void

ans; (b)

6.when an array is passed as parameter to a function ,which of the following statement is correct

a)the function can change values in the original array

b)in c parameters are passed by value . the function cannot change the original value in the array

c)it results in compilation error.Array cannot be passed as a parameter to a function

d)results in runtime error when the function tries to access the elements in the array

7.the type of the controlling expression of a switch statement cannot be of the type

 a)int   b)char   c)short d)float e)none

ans (d)

8.value of $(3^6)+(a ^a)=?$

Ans :value=5

9. x= b>8?b<<3:b>4?b>>1:b;

ans: x=3

10.output:

main()

{

int n=2;

printf("%d %d\n"++n,n*n);

}

a)3,6   b)3,4   c)2,4   d)cannot determine

ans :(b)

11.output:

int x=0x65;

main()

{

char x;

printf("%d\n",x);

]

a)compilation error   b)'A'   c)65   d)undefined

12.output
main()
{

int a=10;
int b=6;
if(a=3)
b++;

```
printf("%d %d",a,b++);
}
```
a)10,6   b)10,7   c)3,6   d)3,7   e)none

```
13.main()
{

enum months {jan=1,feb,mar,apr};
months x=jan;
if(x==1)
printf("jan is the first month");
}
```
a)does not print anything
b)prints : jan is the first month
c)generates compilation error
d)results in runtime error

ans : (c)

14.what is the output of the following program?
```
Main()
{
char *src="hello world";
char dst{100];
strcpy(src,dst);
printf("%s",dst);
}
strcpy(char *dst,char *src)
{
while (*src) *dst++=*src++;
}
```
a)"hello world"   b)"hello"   c)"world"   d)NULL   e)undefined

ans: (e)

```
15.main()
{
int i=6;
switch(i)
{
default: i+=2;
case 4;i=4;
case 5:i++;
break;
}
printf("%d",i);
}
```

a)8   b)6   c)5   d)4   e)none

16.main()
```
{
int x=20;
itn y=10;
swap(x,y);
printf("%d %d",y,x+2);
}
swap(int x,int y)
{
int temp;
temp=x;
x=y;
y=temp;
}
```
a)10,20   b)20,12   c)22,10   d)10,22
        e)none

17.#define INC(x)   x++
```
main()
{
int x=4;
printf("%d",INC(x++));

}
```
a)4   b)5   c)6   d)compilation error   e)runtime error

ans : (d)

18.struct node{
```
            char *word;
            int count;
            struct node left;
            struct node right;
            };
```
a)incorrect definiton
b)structures cannot refer to other structrues
c)structures can refer to themselves.Hence the statement is ok
d)structures can refer to maximum of one other structure

19.what is the size of the following union
```
union tag{
            int a;
            float b;
            char c;
```

```
};
```
a)2   b)4   c)1   d)7
ans :(b)

20. main()
```
{
char s[]="hello  world";
printf("%15.10s",s);
}
```
a)hello,.world…
b)…..hello world
c)heloo,.wor…..
d)none of the above
ans: (b)

section C – analysing program segements

1)struct dlink{
```
                int nodeid;
                struct dlink *next;
                struct dline *prev;
} dlink_t;
```
A pointer to the head of tha linked list is maintained as a global variable whose definition is
dlink_t *head;

The function remove_element(dlink_t*rp), needs to remove the node pointed to by rp and adjust
the head

The first node's prev and the last node's text 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 function remove_element
a)it works when head is the same as rp;
b)it does not work whe rp is the last element on the list
c)it sets the head of the list correctly
d)it works in all cases

ans:(b)

2.#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 array
d)works only when the character c is found in the string

ans : I don't know.i answered randomly at last.

3.main()
{
printf("%d\n",f(7));
}
f(x)
{
        if(x<=4)
                return x;
        return f(--x);
}
a)4
b)5
c)6
d)7

ans : (4)

4.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",p);
}
```
   a)   1 and 1 is printed
   b)   1 and 4
   c)   4 and 4
   d)   causes an exception
   ans : this question was not asked.instead a different question is asked.

5.which is correct?

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 : I don't know the answer. I answered randomly at last.

6. 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)55 and 55
e)35 and 35
ans : (c)

7.int
```
func(int x)
{
if(x<=0)
            return (1);
    return func(x-1)+x;
}
main()
{
printf("%d",func(5));
}
```
a)12   b)16   c)15   d)11

8.consider the following fragments of c code in two files which will be linked together and executed
a.c
```
int i;
main()
{
i=30;
f1();
printf("%d",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
d)a & b

9. void
funca(int *k)
{
*k+=20;
}
void
funcb(int *k)
{
int m=*x,*n=&m;
*n+=10;
}
main()
{
  int var=25,;
*varp=&var;
  funca(varp)
*varp+=10;
funcb(varp);
  printf("%d%d,var,*varp);
}
  (a)   20,55(b) 35,35(c) 25,25(d)55,55
ans : (d)

9. #include <stream.h>
        class x{
        public :
        int a;
        x();
        };
        x::x() { a=10;cout<< a ;}
        class b:public x {
        public :
        b(); x();
        };
        b::b() { a=20;cout<<a;}
        main()
        {
        b temp;
        }
    what will be the output of the following program?
        a)10   b)20   c)20   10   d)10   20

ans : this question is not asked.

section 4 – General Aptitude Section

1. In a murder case there are four suspects P,Q,R,S. Each of them makes a
    statement . They are
    P : I had gone to the theatre with S at the time of the murder
    Q: I was playing cards with P at the time of the murder
    R: Q did not commit the murder
    S: R is not the murdere

    Assuming that only one of the above statement is false and that one of them is
    the murderer,who is the murderer?
    a)p   b)Q   c)R   d)cannot be concluded   e)S

    2.Mohan earned twice as much and deep.Yogesh earned Rs.3/- more than half
    as much as deep.If the amounts earned by mohan,deep and yogesh are M,D and
    y respectively which of the following is the correct ordering of these amounts?
    a)M<D<Y
    B)M<Y<D
    C)D<M<Y
    D)it cannot be determined from the information given
    e)D<Y<M

    ans : (d)

    3.Statistics indicate that men drivers are involved in more accidents than women
    drivers.Hence it may be concluded that
        a)sufficient information is not there to conclude anything
        b)men are actually better drivers but drive more frequently
        c)woment certainly drive more cautiously than men
        d)men chauvinists are wrong about women's abilities
        e)statistics sometimes present a wrong picture of things

        ans : (a)
        4.convert hex number 0xE78 to radix 7
        ans : 13541

        5.given that A,B,C,D,E represent one of the digits between 1 and 9 and that the
        following multiplication holds

        ABCDE X4=EDCBA
        Which digit does E represent?
        a)4   b)6   c)8   d)7   e)insufficient
        data provided

        6.HCL photocopying machine can make 10 copies every 4 seconds.

At this rate,how may copies can the machine make in 6 minutes?
a)900
b)600
c)360
d)240
e)150
ans : (a)

7. if a=2 , b=4 ,c=5 then
(a+b)/c – c/(a+b)=?
Ans : 11/30

8.10^2 (10 ^8 +10 ^8)/ 10^4=?
Ans : 2(10^6)

9.worker W produces n units in 5 hours.Workers V and W,working independently
but at the same time produce n units in 2 hours. How long would it take V alone
to produce n units?
Ans : 3 hr 20 min

10 . If q#0 and k=(rq/2) – s ,then what is r in terms of k,q ans s?
ans : 2(k+s)/q

Note : question nos 11 to 20 were not asked in order.They shuffled the order.so don't
study as e,a,b,c,b . study the answer.

1.A causes B or C ,but not both
2.F occurs only if B occurs
3. D occurs if B or C occurs
4.E occurs only if C occurs
5.J occurs only if E or F occurs
6.D causes G,H or both
7.H occurs if E occurs
8.G occurs if F occurs

11) if A occurs which of the following may occur?
            I . F and G
            II. E and H
            III.D
    a)I only
    b)II only
    c)III only
    d) I & II & III
    e)I & II or II & III but not both

ans : (e)

12. If B occurs which must occur?
        a)D
        b)D and G
        c)G and H
        d)F and G
        e)J
ans : (a)

13. if J occurs ,which must have occurred?
   a)E
   b) Either B or C
   c)both E & f
   d)B
   e) Both B & C

ans : (b)

14. which may occur as a result of a cause not mentioned?
   I.D
   II.A
   III.F
a) I only
b) II only
c) I & II
d) II & III
e) I , II & III
Ans : (c)

15. If E occurs which one cannot occur?
a)A
b)F
c)D
d)C
e)J
ans ; (b)

Qestions 16-20
Six knights – P,Q,R,S,T and U – assemble for a long journey in two travelling parties. For security, each travelling party consists of at least two knights .The two parties travel by separate routs,northern and southern .After one month ,the routes of the northern and southern groups converge for a brief time and at that point the knights can if they wish ,rearrange their travelling parties before continuing, again in two parties along separate northern and southern routes. Throughout the entire trip , the composition of travelling parties must be in accord with the following conditions:

P and R are deadly enemies and although they may meet briefly can never
travel together.
P must travel in the same party with S
Q cannot travel by the southern route
U cannot change routes

16. If one of the two parties of knights consists of P and U and two other knights and travels by
the southern route, the other memebers of this party besides P and U must be
a)Q and S
b)Q and T
c)R and S
d)R and T
e)S and T

17.if each of the two parties of knights consists of exactly three members,which of the following
is not a possible travelling pary and route?
a)P,S,U by the northern route
b)P,S,T by the northern route
c)P,S,T by the southern route
d)P,S,U by the southern route
e)Q,R,T by the northern route
18.if one of the two parties of knights consisits of U and two other knights and travels by the
northern route,the other members of this party besides U must be
a)P and S
b)P and T
c)Q and R
d)Q and T
e)R and T

19.if each of the two parties of knights consists of exactly three members ,S and U are
members of different parties and R travels by the northern route then T must travel by the
a)southern route with P and S
b)southern route with Q and R
c)southern route with R and U
d)northern route with Q and R
e)northern route with R and U

20. if when the two parties of knights encounter one another after a month exactly one knight
changes from one travelling party to the other travelling party ,that knight must be
a)P
b)Q
c)R
d)S
e)T