C,C++ Questions

1. Base class has some virtual method and derived class has a method with the same name. If we initialize the base class pointer with derived object,. calling of that virtual method will result in which method being called?

a. Base method
b. Derived method..

Ans. b

2. For the following C program

```
#define AREA(x)(3.14*x*x)
main()
{float r1=6.25,r2=2.5,a;
a=AREA(r1);
printf("\n Area of the circle is %f", a);
a=AREA(r2);
printf("\n Area of the circle is %f", a);
}
```

What is the output?

Ans. Area of the circle is 122.656250
Area of the circle is 19.625000

3. What do the following statements indicate. Explain.

- int(*p)[10]
- int*f()
- int(*pf)()
- int*p[10]

Refer to:
-- Kernighan & Ritchie page no. 122
-- Schaum series page no. 323

4.

```
void main()
{
int d=5;
printf("%f",d);
}
```

Ans: Undefined

5.

```
void main()
{
int i;
for(i=1;i<4,i++)
switch(i)
case 1: printf("%d",i);break;
{
case 2:printf("%d",i);break;
case 3:printf("%d",i);break;
}
switch(i) case 4:printf("%d",i);
}
```

Ans: 1,2,3,4

6.

```
void main()
{
char *s="\12345s\n";
printf("%d",sizeof(s));
}
```

Ans: 6

7.

```
void main()
{
unsigned i=1; /* unsigned char k= -1 => k=255; */
signed j=-1; /* char k= -1 => k=65535 */
/* unsigned or signed int k= -1 =>k=65535 */
if(i<j)
printf("less");
else
if(i>j)
printf("greater");
else
if(i==j)
printf("equal");
}
```

Ans: less

8.

```
void main()
{
float j;
j=1000*1000;
printf("%f",j);
}
```

1. 1000000
2. Overflow
3. Error
4. None

Ans: 4

9. How do you declare an array of N pointers to functions returning pointers to functions returning pointers to characters?

Ans: The first part of this question can be answered in at least three ways:

1. char *(*(*a[N])())();

2. Build the declaration up incrementally, using typedefs:

```
typedef char *pc;     /* pointer to char */
typedef pc fpc();     /* function returning pointer to char */
typedef fpc *pfpc;    /* pointer to above */
typedef pfpc fpfpc();     /* function returning... */
typedef fpfpc *pfpfpc;    /* pointer to... */
pfpfpc a[N];          /* array of... */
```

3. Use the cdecl program, which turns English into C and vice versa:

```
cdecl> declare a as array of pointer to function returning
   pointer to function returning pointer to char
char *(*(*a[])())()
```

cdecl can also explain complicated declarations, help with casts, and indicate which set of parentheses the arguments go in (for complicated function definitions, like the one above).
Any good book on C should explain how to read these complicated C declarations "inside out" to understand them ("declaration mimics use").
The pointer-to-function declarations in the examples above have not included parameter type information. When the parameters

have complicated types, declarations can *really* get messy.
(Modern versions of cdecl can help here, too.)

10. A structure pointer is defined of the type time . With 3 fields min,sec hours having pointers to intergers.
Write the way to initialize the 2nd element to 10.

11. In the above question an array of pointers is declared.
Write the statement to initialize the 3rd element of the 2 element to 10;

12.

```
int f()
void main()
{
f(1);
f(1,2);
f(1,2,3);
}
f(int i,int j,int k)
{
printf("%d %d %d",i,j,k);
}
```

What are the number of syntax errors in the above?

Ans: None.

13.

```
void main()
{
int i=7;
printf("%d",i++*i++);
}
```

Ans: 56

14.

```
#define one 0
#ifdef one
printf("one is defined ");
#ifndef one
printf("one is not defined ");
```

Ans: "one is defined"

15.

```
void main()
{
int count=10,*temp,sum=0;
temp=&count;
*temp=20;
temp=&sum;
*temp=count;
printf("%d %d %d ",count,*temp,sum);
}
```

Ans: 20 20 20

16. There was question in c working only on unix machine with pattern matching.

14. what is alloca()

Ans : It allocates and frees memory after use/after getting out of scope

17.

```
main()
{
static i=3;
printf("%d",i--);
return i>0 ? main():0;
}
```

Ans: 321

18.

```
char *foo()
{
char result[100]);
strcpy(result,"anything is good");
return(result);
}
void main()
{
char *j;
j=foo()
printf("%s",j);
}
```

Ans: anything is good.

19.

```
void main()
{
char *s[]={ "dharma","hewlett-packard","siemens","ibm"};
char **p;
p=s;
printf("%s",++*p);
printf("%s",*p++);
printf("%s",++*p);
}
```

Ans: "harma" (p->add(dharma) && (*p)->harma)
"harma" (after printing, p->add(hewlett-packard) &&(*p)->harma)
"ewlett-packard"

20. Output of the following program is

```
main()
{int i=0;
for(i=0;i<20;i++)
{switch(i)
case 0:i+=5;
case 1:i+=2;
case 5:i+=5;
default i+=4;
break;}
printf("%d,",i);
}
}
```

a) 0,5,9,13,17
b) 5,9,13,17
c) 12,17,22
d) 16,21
e) Syntax error

Ans. (d)

21. What is the ouptut in the following program

```
main()
{char c=-64;
int i=-32
unsigned int u =-16;
if(c>i)
{printf("pass1,");
if(c<u)
printf("pass2");
else
printf("Fail2");
}
else
```

```
printf("Fail1);
if(i<u)
printf("pass2");
else
printf("Fail2")
}
```

a) Pass1,Pass2
b) Pass1,Fail2
c) Fail1,Pass2
d) Fail1,Fail2
e) None of these

Ans. (c)

22. What will the following program do?

```
void main()
{
int i;
char a[]="String";
char *p="New Sring";
char *Temp;
Temp=a;
a=malloc(strlen(p) + 1);
strcpy(a,p); //Line number:9//
p = malloc(strlen(Temp) + 1);
strcpy(p,Temp);
printf("(%s, %s)",a,p);
free(p);
free(a);
} //Line number 15//
```

a) Swap contents of p & a and print:(New string, string)
b) Generate compilation error in line number 8
c) Generate compilation error in line number 5
d) Generate compilation error in line number 7
e) Generate compilation error in line number 1

Ans. (b)

23. In the following code segment what will be the result of the function,

```
value of x , value of y
{unsigned int x=-1;
int y;
y = ~0;
if(x == y)
printf("same");
else
printf("not same");
}
```

a) same, MAXINT, -1
b) not same, MAXINT, -MAXINT
c) same , MAXUNIT, -1
d) same, MAXUNIT, MAXUNIT
e) not same, MAXINT, MAXUNIT

Ans. (a)

24. 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)

25. Find the output for the following C program

```
main()
{
char *p1="Name";
char *p2;
p2=(char *)malloc(20);
while(*p2++=*p1++);
printf("%s\n",p2);
}
```

Ans. An empty string

26. Find the output for the following C program

```
main()
{
int x=20,y=35;
x = y++ + x++;
y = ++y + ++x;
```

```
printf("%d %d\n",x,y);
}
```

Ans. 57 94

27. Find the output for the following C program

```
main()
{
int x=5;
printf("%d %d %d\n",x,x<<2,x>>2);
}
```

Ans. 5 20 1

28 Find the output for the following C program

```
#define swap1(a,b) a=a+b;b=a-b;a=a-b;
main()
{
int x=5,y=10;
swap1(x,y);
printf("%d %d\n",x,y);
swap2(x,y);
printf("%d %d\n",x,y);
}
int swap2(int a,int b)
{
int temp;
temp=a;
b=a;
a=temp;
return;
}
```

Ans. 10 5

29 Find the output for the following C program

```
main()
{
char *ptr = "Ramco Systems";
(*ptr)++;
printf("%s\n",ptr);
ptr++;
printf("%s\n",ptr);
}
```

Ans. Samco Systems

30 Find the output for the following C program

```
#include<stdio.h>
main()
{
char s1[]="Ramco";
char s2[]="Systems";
s1=s2;
printf("%s",s1);
}
```

Ans. Compilation error giving it cannot be an modifiable 'lvalue'

31 Find the output for the following C program

```
#include<stdio.h>
main()
{
char *p1;
char *p2;
p1=(char *) malloc(25);
p2=(char *) malloc(25);
strcpy(p1,"Ramco");
strcpy(p2,"Systems");
strcat(p1,p2);
printf("%s",p1);
}
```

Ans. RamcoSystems

32. Find the output for the following C program given that
[1]. The following variable is available in file1.c
static int average_float;

Ans. All the functions in the file1.c can access the variable

33. Find the output for the following C program

```
# define TRUE 0
some code
while(TRUE)
{
some code
}
```

Ans. This won't go into the loop as TRUE is defined as 0

34.
```
struct list{
 int x;
struct list *next;
}*head;
```

the struct head.x =100

Is the above assignment to pointer is correct or wrong ?

Ans. Wrong

35.What is the output of the following ?

```
int i;
i=1;
i=i+2*i++;
printf(%d,i);
```

Ans. 4

36.
```
FILE *fp1,*fp2;

fp1=fopen("one","w")
fp2=fopen("one","w")
fputc('A',fp1)
fputc('B',fp2)
fclose(fp1)
fclose(fp2)
}
```

Find the Error, If Any?

Ans. no error. But It will over writes on same file.

37. What are the output(s) for the following ?

38.
```
#include<malloc.h>
char *f()
{char *s=malloc(8);
  strcpy(s,"goodbye");
}

main()
{
char *f();
printf("%c",*f()='A');     }
```

39.
```
#define MAN(x,y) (x)>(y)?(x):(y)
    {int i=10;
    j=5;
    k=0;
    k=MAX(i++,++j);
    printf(%d %d %d %d,i,j,k);
    }
```

Ans. 10 5 0

40.
```
void main()
{
int i=7;
printf("%d",i++*i++);
}
```

Ans: 56