B.Tech First Year 2nd Semester Final Examination 2013

Course Name: Introduction to Computing Code: CS 101

Name: Roll-No:

Full Marks-100 Time: 3 hours

You can use supplementary sheets to answer questions 29-33.

Q.1) 2

What are *stderr, stdin, stdout* ?

Q.2) 2

What does the following declaration mean?

*int (*ptr)[10];*

a) ptr is array of pointers to 10 integers
b) ptr is a pointer to an array of 10 integers
c) ptr is an array of 10 integers
d) ptr is an pointer to array

Q.3) 2

Is the following statement a declaration or definition?

extern int i;

a) Declaration
b) Definition
c) Function
d) Error

Q.4) 2

In which stage the following code

#include <stdio.h>

gets replaced by the contents of the file

a) During editing
b) During linking
c) During execution
d) During preprocessing

Q.5) 2

How will you print \n on the screen?

a) printf("\n");
b) printf('\n');
c) printf("\\n");
d) echo "\\n";

Q.6) Write the outputs of the following program 2

```
#include<stdio.h>

main()
{
char s[ ]="yellow";
int i;
for(i=0;s[ i ];i++)
printf("\n%c%c%c",s[i],*(s+i),*(i+s));
}
```

Q.7) Write the outputs of the following program 2

```
#include<stdio.h>

#define square(x) x*x
main()
{
int i;
i = 125/square(5);
printf("%d",i);
}
```

Q.8) 2

If the two strings are identical, then *strcmp()* function returns

a) -1 b) 1 c) 0 d) Yes

Q.9) 2

What is the similarity between a structure, union and enumeration?

a) All of them let you define new values
b) All of them let you define new data types
c) All of them let you define new pointers
d) All of them let you define new structures

Q.10) Write the outputs of the following program 2

```
#include<stdio.h>

enum colors
{BLACK,YELLOW=5,BLUE,GREEN}

main()
{
printf("%d..%d..%d",BLACK,BLUE,GREEN);
return(1);
}
```

Q.11) 2

In C, if you pass an array as an argument to a function, what actually gets passed?

a) Value of elements in array
b) First element of the array
c) Base address of the array
d) Address of the last element of array

Q.12) 2

Which of the following is not user defined data type?

```
i) struct book
{
   char name[10];
   float price;
   int pages;
};
ii) long int l = 2.35;
iii) enum day {Sun, Mon, Tue, Wed};
```

a)i b) ii c) iii d) both i and ii

Q.13) Write the outputs of the following program 2

```
#include<stdio.h>

main()
{
printf("%x",6<<2);
}
```

Q.14) 2

Identify which of the following are declarations

1 : extern int x;
2 : float square (float x) { ... }
3 : double pow(double, double)

a) 1
b) 2
c) 1 and 3
d) 3

Q.15) 2

Can you combine the following two statements into one?

```
char *p;
p = (char*) malloc(100);
```

a) char p = *malloc(100);
b) char *p = (char) malloc(100);
c) char *p = (char*)malloc(100);
d) char *p = (char *)(malloc*)(100);

Q.16) 2

If a variable is a pointer to a structure, then which of the following operator is used to access data members of the structure through the pointer variable?

a) .
b) &
c) *
d) ->

Q.17) 2

What would be the equivalent pointer expression for referring the array element *a[i][j][k][l]*

a) ((((a+i)+j)+k)+l)
b) *(*(*(*(a+i)+j)+k)+l)
c) (((a+i)+j)+k+l)
d) ((a+i)+j+k+l)

Q.18) 2

The operator used to get value at address stored in a pointer variable is

a) *
b) &
c) &&
d) ||

Q.19) 2

What will be the output of the program?

```
#include<stdio.h>

   struct course
   {
      int courseno;
      char coursename[25];
   };
int main()
{
   struct course c[] =
{ {102, "Java"},
 {103, "PHP"},
 {104, "DotNet"}    };

 printf("%d ", c[1].courseno);
printf("%s\n",(*(c+2)).coursename);
   return 0;
}
```

Q.20) 2

What will be the output of the program?

```
#include<stdio.h>
void fun(int*, int*);
int main()
{
   int i=5, j=2;
   fun(&i, &j);
   printf("%d, %d", i, j);
   return 0;
}
void fun(int *i, int *j)
{
   *i = *i**i;
   *j = *j**j;
}
```

Q.21) 2

What will be the output of the program?

```
#include<stdio.h>

int main()
{
   printf(5+"Good Morning\n");
   return 0;
}
```

Q. 22) 2

What will be the output of the program?

```
#include<stdio.h>

int main()
{
   char *names[] = { "Sriparna",
"Sima", "Sribarna", "Balram",
"Ritam"};
   int i;
   char *t;
   t = names[3];
   names[3] = names[4];
   names[4] = t;
   for(i=0; i<=4; i++)
      printf("%s,", names[i]);
   return 0;
}
```

Q.23) Write the outputs of the following program 2

```
#include<stdio.h>

main()
{
 char *p;
 p="Hello";
printf("%c%c\n",*p,*(p+1));
}
```

Q.24) 2

What is the purpose of *"rb"* in *fopen()* function used below in the code?

```
FILE *fp;
fp = fopen("source.txt", "rb");
```

Q.25) 2

What is the purpose of the following code:

```
#include<stdio.h>

int main()
{
   FILE *fp;
   char ch;
   int i=1;
   fp = fopen("myfile.c", "r");
   while((ch=getc(fp))!=EOF)
   {
      if(ch == '\n')
         i++;
   }
   fclose(fp);
   return 0;
}
```

Q.26) What does *fp* point to in the program? 2

```
#include<stdio.h>

int main()
{
   FILE *fp;
   fp=fopen("trial", "r");
   return 0;
}
```

a) The first character in the file
b) A structure which contains a *char* pointer which points to the first character of a file.
c) The name of the file.
d) The last character in the file.

Q.27) 2

Which of the following operations can be performed on the file "NOTES.TXT" using the below code?

```
FILE *fp;
fp = fopen("NOTES.TXT", "r+");
```

a) Reading
b) Writing
c) Appending
d) Read and Write

Q.28) 2

Offset used in *fseek()* function call can be a negative number.

a) True
b) False

Q.29) What are the main tasks of an Operating systems?
What are the different components of central processing unit (CPU)? 3+3

Q.30) Differentiate between "Call by value" and "Call by reference". 4

Q.31)
a) Define Self-referential Structures.
b) What is linear linked list?
c) Differentiate linked list vs. array.
c) Write a C program using structures to create a linked list of size 2. 2+2+3+3

Q.32) Define a stack. Write down the procedure of checking balanced braces using stack. Write a C program to push an element in the stack and pop an element from the stack

2+5+8

Q33) a) Differentiate uniprograming vs. multiprogramming. 4
b) What is time-multiplexing. 3
c) Define Kernel. 2