《程序设计 I》期中考试试题

考试形式：闭卷　考试时间：2 小时

年级：　专业：　　姓名：＿＿＿＿＿＿＿学号：＿＿＿＿＿＿＿成绩：＿＿＿＿＿＿

1. Single choice selection (80 points, 2 each)

Only one choice in each question is correct, no point will be given if more than one choice is selected.

1. ＿＿＿＿＿ is the physical aspect of the computer that can be seen.
   A. Hardware
   B. Software
   C. Operating system
   D. Application program
   answer:A

2. Why do computers use zeros and ones?
   A. because combinations of zeros and ones can represent any numbers and characters.
   B. because digital devices have two stable states and it is natural to use one state for 0 and the other for 1.
   C. because binary numbers are simplest.
   D. because binary numbers are the bases upon which all other number systems are built.
   answer:B

3. One byte has ＿＿＿＿＿ bits.
   A. 4
   B. 8
   C. 12
   D. 16
   answer:B

4. Computer can execute the code in ＿＿＿＿＿＿.
   A. machine language
   B. assembly language
   C. high-level language
   D. none of the above
   answer:A

5. ＿＿＿＿＿＿ translates high-level language program into machine language program.
   A. An assembler

B. A compiler

C. CPU

D. The operating system

answer:B

6. _____ is an operating system.

A. Java

B. C++

C. Windows 8

D. Visual Basic

E. Ada

answer:c

7. Which of the following statements is correct?

A. Every line in a program must end with a semicolon（分号）.

B. Every statement in a program must end with a semicolon.

C. Every comment line must end with a semicolon;

D. Every function must end with a semicolon;

E. Every preprocessor directive must end with a semicolon;

answer:B

8. C compiler translates C source code into _____.

A. Java code

B. machine code

C. C code

D. another high-level language code

answer:B

9. The extension name of a C object file on Windows is

A. .java

B. .obj

C. .class

D. .exe

answer:b

10.   Which of the following is not a valid C variable name?

a) int number;

b) float _rate;

c) int variable_;

d) int 3_main;

Answer: **d**

11.   Comment on the output of this C code?

```
1.    #include <stdio.h>
2.    int main()
3.    {
4.        float f1 = 0.1;
5.        if (f1 == 0.1)
6.            printf("equal\n");
7.        else
8.            printf("not equal\n");
9.    }
```

a) equal
b) not equal
c) Output depends on compiler
d) None of the mentioned

answer:B

12.   What will be the value of d in the following program?

```
10.    #include <stdio.h>
11.    int main()
12.    {
13.        int a = 10, b = 5, c = 5;
14.        int d;
15.        d = b + c == a;
16.        printf("%d", d);
17.        return 0;
18.    }
```

a) Syntax error
b) 1
c) 5
d) 10

Answer: **b**

13.   What is the output of this C code?

```
1.    #include <stdio.h>
2.    int main()
3.    {
4.        float f1 = 0.1;
5.        if (f1 == 0.1)
6.            printf("equal\n");
7.        else
8.            printf("not equal\n");
9.        return 0;
10.   }
```

a) equal
b) not equal
c) Output depends on compiler
d) None of the mentioned

Answer: **b**

14.   What is the output of this C code?

```
1.    #include <stdio.h>
2.    int main()
3.    {
4.        int var = 011;
5.        printf("%d", var);
6.        return 0;
7.    }
```

a) 3
b) 9
c) 11
d) 17

Answer: **b**

15.   What is the output of this C code?

```
1.    #include <stdio.h>
2.    int main()
3.    {
4.        int k = 4;
5.        float k = 4;
6.        printf("%d", k);
7.        return 0;
8.    }
```

a) Compile time error
b) 4
c) 4.0000000
d) 4.4

Answer: **a**

16.   What is the output of this C code?

```
1.    #include <stdio.h>
2.    int main()
3.    {
4.        int var = 011;
5.        printf("%d", var);
6.    }
```

a) 3

b) 9

c) 11

d) 17

Answer: **b**

17.   What is the output of this C code?

```
1.    #include <stdio.h>
2.    int main()
3.    {
4.        const int p = 4;
5.        printf("p is %d", p++);
6.        return 0;
7.    }
```

a) p is 4

b) Compile time error

c) Run time error

d) p is followed by a garbage value

Answer: **b**

18.   What is the output of this C code?

```
1.    #include <stdio.h>
2.    int main()
3.    {
4.        j = 10;
5.        printf("%d\n", j++);
6.        return 0;
7.    }
```

a) 10

b) 11

c) Compile time error

d) 0

Answer: **c**

19.   What is the value of x in this C code?

```
1.    #include <stdio.h>
2.    int main()
3.    {
4.        int x = 12 / 5 * 3 + 1;
5.        return 0;
```

```
6.     }
```
a) 8.2

b) 1

c) 7

d) Depends on compiler

Answer: **c**

20.   What is the output of this C code?

```
1.    #include <stdio.h>
2.    int main()
3.    {
4.        int y = 0, z = 5;
5.        int a = (y && z++);
6.        printf("%d", z);
7.        return 0;
8.    }
```
a) 6

b) 5

c) 0

d) Varies

Answer: **b**

21.   What is the output of the below code considering size of short int is 2, char is 1 and int is 4 bytes?

```
1.    #include <stdio.h>
2.    int main()
3.    {
4.        short int i = 20;
5.        char c = 97;
6.        printf("%d, %d, %d\n", sizeof(i), sizeof(c), sizeof(c + 20));
7.        return 0;
8.    }
```
a) 2, 1, 2

b) 2, 1, 1

c) 2, 1, 4

d) 2, 2, 8

Answer: **c**

22.   What is the output of this C code?

```
1.    #include <stdio.h>
```

```
2.      int main()
3.      {
4.          int a = 1, b = 1, c;
5.          c = a++ + b;
6.          printf("a=%d, c=%d", a, c);
7.          return 0;
8.      }
```

a) a = 1, c = 2
b) a = 1, c = 3
c) a = 2, c = 2
d) a = 2, c = 3
Answer: c

23.   What is the output of this C code?

```
1.      #include <stdio.h>
2.      int main()
3.      {
4.          int a = 1, b = 2;
5.          a += b -= a;
6.          printf("%d %d", a, b);
7.          return 0;
8.      }
```

a) 1 1
b) 1 2
c) 2 1
d) 2 2
Answer: c

24.   What is the output of this C code considering the ASCII value of character A is 65?

```
1.      #include <stdio.h>
2.      int main()
3.      {
4.          char a = 'A';
5.          char b = 'B';
6.          int c = a + b % 3 - 3 * 2;
7.          printf("%d\n", c);
8.          return 0;
9.      }
```

a) 65
b) 58
c) 64

d) 59

Answer: **d**

25.   What is the output of this C code?

```c
1.  #include <stdio.h>
2.  int main()
3.  {
4.     int x =0;
5.     if(x++)
6.        printf("true\n");
7.     else if(x ==1)
8.            printf("false\n");
9.     return 0;
10. }
```

a) true

b) false

c) Compile time error

d) Undefined behaviour

answer:b

26.   What is the output of this C code?

```c
1.  #include <stdio.h>
2.  int main()
3.  {
4.     int x =0;
5.     if(x ==1)
6.        if(x ==0)
7.           printf("inside if\n");
8.        else
9.           printf("inside else if\n");
10.    else
11.       printf("inside else\n");
12.    return 0;
13. }
```

a) inside if

b) inside else if

c) inside else

d) Compile time error

answer:c

27.   What is the output of this C code?

```c
1.  #include <stdio.h>
2.  int main()
3.  {
4.     int a =1;
```

```c
5.      switch(a)
6.      {
7.          case  a:
8.              printf("Case  A  ");
9.          default:
10.             printf("Default");
11.     }
12.     return  0;
13. }
```

a) Case A

b) Default

c) Case A Default

d) Compile time error

answer:d

28.   What is the output of this C code?

```c
1.  #include <stdio.h>
2.  int  main()
3.  {
4.      int  i =0;
5.      while(i <10)
6.      {
7.        i++;
8.        printf("hi\n");
9.        while(i <8)
10.       {
11.          i++;
12.          printf("hello\n");
13.       }
14.     }
15.     return  0;
16. }
```

a) Hi is printed 8 times, hello 7 times and then hi 2 times

b) Hi is printed 10 times, hello 7 times

c) Hi is printed once, hello 7 times

d) Hi is printed once, hello 7 times and then hi 2 times

answer:d

29.   What is the output of this C code?

```c
1.  #include <stdio.h>
2.  int  main()
3.  {
4.      int  i =0, j =0;
```

```
5.      while(i <5, j <10)
6.      {
7.          i++;
8.          j++;
9.      }
10.     printf("%d, %d\n", i, j);
11.     return 0;
12. }
```

a) 5, 5
b) 5, 10
c) 10, 10
d) Syntax error

answer:c

30.   How many times i value is checked in the below code?

```
1.   #include <stdio.h>
2.   int main()
3.   {
4.      int i =0;
5.      do
6.      {
7.          i++;
8.          printf("in while loop\n");
9.      }while(i <3);
10.     return 0;
11. }
```

a) 1
b) 2
c) 3
d) 4

answer:c

31.   What is the output of this C code?

```
1.   #include <stdio.h>
2.   int main()
3.   {
4.      int i =0;
5.      do
6.      {
7.          i++;
8.          if(i ==2)
9.              continue;
10.         printf("In while loop ");
```

```
11.     }while(i <2);
12.     printf("%d\n", i);
13.     return 0;
14. }
```

a) In while loop 2

b) In while loop in while loop 3

c) In while loop 3

d) Infinite loop

answer:a

32.   What is the output of this C code?

```
1.   #include <stdio.h>
2.   int main()
3.   {
4.     int i =0;
5.     while(i <2)
6.     {
7.        if(i ==1)
8.           break;
9.        i++;
10.       if(i ==1)
11.          continue;
12.       printf("In while loop\n");
13.     }
14.     printf("After loop\n");
15.     return 0;
16. }
```

a) In while loop
   After loop

b) After loop

c) In while loop
   In while loop
   After loop

d) In while loop

answer:b

33.   What is the output of this C code?

```
1.   #include <stdio.h>
2.   int main()
3.   {
4.     int a =1;
5.     if(a--)
6.        printf("True");
```

```c
7.      if(a++)
8.        printf("False");
9.      return 0;
10. }
```

a) True

b) False

c) True False

d) No Output

answer:a

34.   What is the output of this C code?

```c
1.   #include <stdio.h>
2.   int main()
3.   {
4.     int x =0;
5.     if(x ==1)
6.       if(x >=0)
7.         printf("true\n");
8.     else
9.       printf("false\n");
10.    return 0;
11. }
```

a) true

b) false

c) Depends on the compiler

d) No output

answer:d

35.   What is the output of this C code?

```c
1.   #include <stdio.h>
2.   int main()
3.   {
4.     int k;
5.     for(k = -3; k < -5; k++)
6.       printf("Hello");
7.     return 0;
8.   }
```

a) Hello

b) Infinite hello

c) Run time error

d) Nothing

answer:d

36.   What is the output of this C code?

```c
1.  #include <stdio.h>
2.  int main()
3.  {
4.    int i =0;
5.    while(i =0)
6.        printf("True\n");
7.        printf("False\n");
8.    return 0;
9.  }
```

a) No output

b) True

  False

c) False

d) Compile-time error

    answer:c

37.   What is the output of this C code?

```c
1.  #include <stdio.h>
2.  int main()
3.  {
4.    int i =0;
5.    while(++i)
6.    {
7.        printf("H");
8.    }
9.    return 0;
10. }
```

a) H

b) H is printed infinite times

c) Compile time error

d) Varies

    answer:b

38.   How many times the statement of printf("In while loop\n") is executed in the below code?

```c
1.  #include <stdio.h>
2.  int main()
3.  {
4.    int i =0;
```

```
5.      while(i <3)
6.          i++;
7.          printf("In while loop\n");
8.      return 0;
9.  }
```

    a) 3

    b) 2

    c) 4

    d)1

       answer:d

  39.   What is the output of this C code?

```
1.  #include <stdio.h>
2.  int main()
3.  {
4.      int i = 0, j = 0;
5.      for(i; i < 2; i++){
6.          for(j = 0; j < 3; j++){
7.              printf("1\n");
8.              break;
9.          }
10.         printf("2\n");
11.     }
12.     printf("after loop\n");
13.     return 0;
14. }
```

    a) 1

      2

   after loop

    b) 1

   after loop

    c) 1

      2

      1

      2

   after loop

    d) 1

      1

      2

   after loop

       answer:c

```
40.    What is the output of this C code?
```

```c
1.  #include <stdio.h>
2.  int main()
3.  {
4.    int i =0;
5.    char c ='a';
6.    while(i <2){
7.      i++;
8.      switch(c){
9.        case 'a':
10.          printf("%c ", c);
11.      break;
12.      }
13.    }
14.    printf("after loop\n");
15.    return 0;
16. }
```

a) a after loop
b) a a after loop
c) after loop
d) None of the mentioned

```
answer:b
```

2. Output analysis (6 points, 2 each)

What is the *output* of the following three programs?

```
41.
```

```c
1.  #include <stdio.h>
2.
3.  int main(){
4.    int x = 21;
5.    double y = 6;
6.    double z = 14;
7.    y = x / z;
8.    x = 5.5 * y;
9.    printf("%d",x);
10.   return 0;
11. }
```

Answer: 8

```
42.
```

```
1.  #include <stdio.h>
2.
3.  int main() {
4.    int i;
5.    for (i=0;i<3;i++){
6.       switch(i) {
7.            case 0: printf("%d ",i);
8.            case 2: printf("%d ",i);
9.            default:printf("%d ",i);
10.       }
11.  }
12.  return 0;
13.  }
```

Answer: 0 0 0 1 2 2

43.

```
1.  #include <stdio.h>
2.  int main() {
3.    int count = 50;
4.    while (count > 0) {
5.       count += 3;
6.       count /= 5;
7.       printf("%d ",count);
8.    }
9.  return 0;
10.  }
```

Answer: 10 2 1 0

3. Filling the blanks in the following programs. (14 points, 2 each)

(1)Description:

input is a positive integer, output is also a positive integer. It removes the odd numbers from the input integer's decimal bits and outputs a new integer with the remained even numbers.

Sample input:

27638496

Sample output:

26846

Source Code:

```
1.  #include <stdio.h>
2.  int main() {
3.    long long oldNum, newNum;
4.    int i, t;
5.  scanf("%lld", &oldNum);
6.
```

```
7.   newNum = 0;
8.   i=1;
9.   while(oldNum) {
10.  t = oldNum % 10;
11.  if(t%2 == 0) {
12.  newNum=newNum+t*i;
13.  i=(44);    (44 answer: i*10)
14.  }
15.  oldNum = (45);    (45 answer: oldNum /10)
16.  }
17.  printf("\n%lld\n",newNum);
18.  return 0;
19.  }
```

(2)Description

In the following program, it sums the input positive integers but ignores the input negative number, when the summation is over 200, the program output the summation and ends.

Sample input:

10 -20 30 -40 -50 60 -70 80 -90 100

Sample output:

280

Source Code:

```
1.   int main()
2.   {
3.      int num;
4.      int sum=0;
5.      while(46)    (46 answer: sum <= 200)
6.      {
7.              scanf("%d",&num);
8.              if(num <0)
9.                      (47)                    (47 answer: continue;)
10.             else
11.                sum +=num;
12.
13.      }
14.      printf("%d\n",sum);
15.       return 0;
16.   }
```

(3)Description:

Display the first 5 prime numbers greater than an input integer

Sample input:

2

Sample output:

3
5
7
11
13

```
1.   #include <stdio.h>
2.
3.   int main(){
4.      int count =0;
5.   long long numSrt, numTest;
6.      int isPrime ;
7.      int divisor;
8.      int test;
9.
10.  scanf("%lld",&numSrt);
11.  numTest = numSrt;
12.
13.     while(count < 5) {
14.      numTest++;
15.
16.      isPrime = 1;
17.       for(divisor = 2; divisor <= numTest/2; divisor++)
18.          if(numTest%divisor==0) {
19.             isPrime = 0;
20.                (48)      (48 answer: break;)
21.
22.        }
23.
24.      if( 49) {                              (49 answer: isPrime==1)
25.         (50)                                (50 answer:   count++;)
26.         printf("%lld\n",numTest );
27.      }
28.    }
29.    return 0;
30.  }
31.
```