

There are 40 questions (each 2.5 points) for a total of 100 points.

Exam Type: A

All questions are multiple choice, **no points will be lost for wrong answers.**

Do not forget to code your student ID and exam type correctly to the answer sheet. Otherwise, your answers will not be graded.

Assume that all necessary libraries were added properly (by using "include" statements).

Default return type of the "main" function is "int". Assume that the statement "return 0;" is added to programs if necessary.

Name:

Student ID:

Section:

Signature:

AA

AA

1) What is the output of the following program?

```
main()
{ int x=1, y=5, z=11;
  x += y++ + --z / 2 * 4;
  printf("%d", x);
}
```

- a) 7 b) 25 **c) 26** d) 27 e) 29

2) What is the output of the following program?

```
main()
{ double x;
  x = 10 / 3 * 2;
  printf("%.1f", x);
}
```

- a) 1.0 b) 1.67 **c) 6.0** d) 6.67 e) 7.0

3) What is the output of the following program?

```
main()
{ int a=3, b=4, c=5;
  a = -a+(c+b*(c+a)/c-b/a)*a-b/2;
  printf("%d", a);
}
```

- a) 17 b) 67 c) 40 d) 19 **e) 25**

4) Which of the following is not a built-in C type?

- a) void **b) string** c) char d) float e) long

5) What would be the output of the following program?

```
main()
{ float x,y;
  x=5/3;
  y=(float)(5/3);
  printf("%.3f %.3f",x,y);
}
```

- a) 1.000 1.000** b) 1.000 1.667 c) 1.667 1.667
d) 2.000 1.667 e) 1.000 2.000

6) What would be the output of the following program?

```
main()
{ if (2>3)
  { printf("A");
    if (5>3) printf("B");
  }
  else printf("C");
  printf("D");
}
```

- a) B b) BD c) AB d) ABD **e) CD**

7) Variables a, b, c have different values. Which value is output among these values?

```
if (a>b) { if (b>c) printf("%d",b); }
else if (c>b) printf("%d",b);
else if (a>c) printf("%d",a);
else printf("%d",c);
```

- a) the smallest b) the biggest **c) the middle** d) value of b, always
e) the smallest or the biggest, depending on values of a and c

8) What is the output?

```
main()
{ int i=0,n=5;
  if (!n>5 && 1>=++i) ++n;
  printf("%d %d",i,n);
}
```

- a) 0 0 **b) 0 5** c) 1 5 d) 0 6 e) 1 6

9) What would be the output of the following program?

```
int h(int a,int b)
{ if (a>b) {a=-a; return b;}
  else {b=-b; return a;}
}
```

```
main()
{ printf("%d",h(h(4,h(3,6)),h(h(5,1),2))); }
```

- a) -1 **b) 1** c) -5 d) -6 e) 6

10) What will the following program print?

```
main()
{ int i=5, j=10, k=15, m=0;
  while (i<=10)
    while (j>=9)
      while (k>10)
        { i+=2; j--; k--; m++; }
  printf("%d\n",m);
}
```

- a) 4 **b) 5** c) 6 d) 7 e) 8

11) What is the output of the below program?

```
main()
{ int year=2012;
  if ((year%4==0)&&(year%100!=0||year%400==0))
    printf("%d is a leap year.\n",year);
  else
    printf("%d is not a leap year.\n",year);
}
```

- a) is a leap year. b) is not a leap year.
c) 2012 is a leap year. d) 2012 is not a leap year.
e) Compile-time error

12) What is the output of the below program?

```
main()
{ int i=0, j=1, k=3, l=4, m=5;
  if (k--j&&(m=l-k))
    printf("m=%d k=%d", m, k);
  else
    printf("m=%d k=%d", m, k);
}
```

- a) m=1 k=1 b) m=1 k=0 c) m=5 k=3
d) m=5 k=1 **e) m=5 k=0**

13) Which of the following loops should be substituted in place of **---(1)---** in order to display "*" 4 times?

(The output should be: ****)

```
main()
{ int i=1, j=6;
  ---(1)---
}
```

- a) for (;i<=j;i+=2) printf("*");
b) for (i=3;i<=j;i+=1) printf("*");
c) for (;i<=j;i+=1) printf("****");
d) for (;i<=j;i+=0) printf("****");
e) for (;i<=j;i++) printf("****");

14) What would be the output of the following program?

```
main()
{ int x=4,y=3;
  switch (x%y--)
  { case 0: printf("%d ",x);
    case 1: printf("%d ",y);
    default: printf("%d ",x-y); } }
```

- a) 4 2 2 b) 3 2 c) 2 1 **d) 2 2** e) 4 3 2

15) Which one of the following declarations is wrong and causes a compile-time error?

- a) int s=0/3; b) int x+=y+++3; **c) float c=5,3;**
 d) long integer=5; e) double e=3+5.1;

16) What would be the output of the following program?

```
main()
{ int x=-2, y=4, z;
  z = 3*(++x!=-2)+5*((y---3==0)|| (x<y)&&(x>=2));
  printf("%d", z); }
```

- a) 3** b) 5 c) 8 d) 0 e) -2

17) What would be the output of the following program?

```
main()
{ double TicketPrice;
  char block,row;
  block='C';
  row='B';
  TicketPrice = 5.00;
  if (block=='A')
    if (row=='B')
      TicketPrice = 10.00;
  else
    TicketPrice = 20.00;
  printf("%5.2f", TicketPrice); }
```

- a) 5.00** b) 10.00 c) 10 d) 20.00 e) 25.00

18) What would be the output of the following program?

```
main()
{ int x=1,y=1;
  if(x==y) printf("M");
  if(-1) printf("E");
  if(3.99) printf("T");
  if(0) printf("U");
  if('0') printf("CENG\n"); }
```

- a) METUCENG **b) ETCENG** c) METCENG d) MET e) METU

19) What would be the output of the following program?

```
main()
{ int i=0, j, counter1=0, counter2=0;
  do
  { while(++i<=5)
    counter1++;
    counter2++;
  }while(i++<8);

  printf("%d %d", counter1, counter2); }
```

- a) 5 0 b) 10 2 c) 5 1 **d) 5 2** e) 10 1

20) How many lines of output shown ?

```
main()
{ int i,j;
  i=0;
  j=8;
  while((j>4) && (i=0))
  { printf("%f",i);
    if(j%2==0)
      printf("\n");
    j--; } }
```

- a) 0** b) 2 c) 4 d) 5 e) 10

21) What is the output of the following program?

```
main()
{ int n=1;
  switch (++n)
  { case 0: n *= 1;
    case 1: n /= 2; break;
    case 2: n += 3;
    case 3: n += 2;
    default: printf("***"); }
  printf("%d", n); }
```

- a) **7** b) 7 c) 0 d) ** e) **5

22) What would be the output of the following program?

```
main ()
{ float x=0.12378e+3;
  printf("%.1f",x); }
```

- a) 12.3 b) 123.7 **c) 123.8** d) 12.4 e) 123.78

23) What would be the output of the following program?

```
main()
{ printf("%d\n", (8%3*3/5&&2*4-1)-5*2-3); }
```

- a) -10 b) -11 **c) -12** d) -13 e) -14

24) Which of the following data types are wrong?

- I. integer
- II. double
- III. real
- IV. string
- V. char

- a) I, II, V b) II, IV **c) I, III, IV**
 d) Only IV e) III, IV

25) What would be the output of the following program?

```
main()
{ int k,l,m=10;
  double a,g=0;
  for (k=0;k<=m;k++)
  { do
    { a=1;
      for (l=1;l<=k;l++)
      { a+=a*l;
        g=g+(k+(m-k)/a); }
      (a--)+(++g);
      g++;
    } while(a<0);
  }
  printf("%.2f", g); }
```

- a) 453.68
- b) 414.86
- c) 425.86
- d) 436.86**
- e) Infinite loop

26) What would be the output of the following program?

```
main()
{ int i=1, b=-2, c=3, e=0, t=0;
  if (i%5!=0)
  if (!(b>0)||!(b*(c--))<=i)
  {
    t=1;
    if (!c)
      i=t+(++i);
    else
      b=t/(b--); }
  else
    c=i+(--e);
  printf("%d %d %d", i, b, c); }
```

- a) 5 2 0
- b) 1 -1 3**
- c) 1 0 2
- d) -2 3 -3
- e) None of them

27) What would be the output of the following program?

```
int var;
int func(int x)
{ var+=x;
  return var; }
main()
{ int y;
  y=3;
  y=func(y);
  printf("%d", func(y)); }
```

- a) 3
- b) 6**
- c) 9
- d) 0
- e) 12

28) What would be the output of the following program?

```
#define A x+10
#define B y+5
main()
{ int x=10,y=5;
  printf("%d ", ++A/2);
  printf("%d", --B*2); }
```

- a) 16 14**
- b) 11 19
- c) 10 18
- d) 11 18
- e) 10 19

29) What would be the output of the following program?

```
main()
{ int x=8,y=1;
  switch(x)
  { default:
    case 3: x/=3;
    case 2: x-=2;
    case 1: y++;break;
    case 0: x--; y++; }
  printf("%d %d", x,y); }
```

- a) 8 1
- b) 1 3
- c) 0 2**
- d) -1 3
- e) 1 2

30) What would be the output of the following program?

```
main()
{ int a,b=0,c=5,d=5,i;
  a=b;
  c=d;
  d=b;
  do
  { for (i=1;i<=c;i++)
    { c+=5;
      if (c>=29) break;
      printf("**"); }
    while (a<=9)
    { a=a+4;printf("+"); b=a; ++c; }
  }while(a=b); }
```

- a) *****++
- b) *****++
- c) *++++****
- d) *++++**++
- e) Infinite Loop

31) Given the expression in English:

"if x and y are both not equal to z then t=7, otherwise t=5"

Which of the following is the equivalent C statement to the expression above?

- a) if (x!=z&&y!=z) t=7; else t=5;**
- b) if ((x&&y)!=z) t=7; else t=5;
- c) if (!(x=z)&&(y = z)) then t=7; otherwise t=5;
- d) if (!(x==z)%!(y==z)) t=7; t=5;
- e) if ((x&&y)!==z) t=7; else t=5;

32) What is the output?

```
main()
{ int y=3,a=5;
  y=a==3;
  printf("%d %d",a,y); }
```

- a) 3 3
- b) 5 1
- c) 5 3
- d) 0 5
- e) 5 0**

33) What is the output?

```
int f1 (int x)
{ int y=2; printf("%d%d",x,y);
  return x++; return ++y; }
main()
{ int y=5, x=5;
  printf("%d%d\n", f1(y),y); }
```

- a) 5255**
- b) 25424
- c) 5555
- d) 5256
- e) 5552

