

There are 33 questions (each 3 points + 1 point bonus) 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 mark 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:** _____

1) Given the S1 string declaration. Which one of the given choices must be placed in (1) in order to change the value of S1 to "Hello Earth".

```
int main()
{ char S1[]="Hello World";
  S1[6] -= S1[6];
  _____(1)_____; }
```

- a) char S1[]="Hello Earth";
- b) S1= "Hello Earth";
- c) strcat(S1+6, "Earth");**
- d) S1[-5]= "Earth";
- e) strcpy(S1+5, "Earth");

2) What is the output of the following program?

```
int x=1;
int q2(int x)
{ x = x+1; }
int main()
{ /* int x=3; */
  q2(x);
  printf("%d ", x); }
```

- a) 1**
- b) 2
- c) 3
- d) 4
- e) 5

3) In order to initialize the contents of array A[] with values {0, 1, 2, 3, 4, 5, 6, 7} which of the given expressions must be placed in place of (1)?

```
int main()
{ int A[8];
  for (i=0; i<8; i++)
  _____(1)_____; }
```

- a) A[i]= i;**
- b) A[i+1]= i+1;
- c) A[i]= i+1;
- d) A[i+1]= i;
- e) A[i-1]= i;

4) Given the array definition what is the value printed by A[2][2]?

```
int main()
{ int A[3][3]={0,1,2,3,4,5,6,7,8}; }
```

- a) 2
- b) 4
- c) 5
- d) 8**
- e) 0

5) What is the output of the following program?

```
int main()
{ printf("%.3f", 1234.567); }
```

- a) 123.56
- b) 123.57
- c) 1234.57
- d) 123.567
- e) 1234.567**

6) What is the output of the following program?

```
int main()
{ char s1[]="seven", s2[]="EIGHT", s3[]="9";
  int x, y;
  if (strcmp(s1, s2)<0) x = -1;
  else x=1;
  if (strcmp(s2, s3)<0) y = -1;
  else y=1;
  printf("%d %d", x, y); }
```

- a) -1 -1
- b) -1 1
- c) 1 -1
- d) 1 1**
- e) Compile-time error

7) What is the output of the following program?

```
void f(int x, char s[])
{ int i;
  for (i=0; s[i]; i++) s[i]--;
  x--; }
int main()
{ int a=5;
  char comp[]="ibm";
  f(a, comp);
  printf("%d %s", a, comp); }
```

- a) 5 ibm
- b) 5 hal**
- c) 4 ibm
- d) 4 hal
- e) Compile-time error

8) What is the output of the following program?

```
int main()
{ int i, s=0, arr[9], brr[9];
  for (i=0; i<9; i++) arr[i] = i%2;
  for (i=0; i<9; i++) brr[i] = i/2;
  for (i=0; i<9; i++) s += brr[i]-arr[i];
  printf("%d", s); }
```

- a) 20
- b) 16
- c) 12**
- d) 6
- e) 0

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9) What is the output of the following program?

```
int main()
{ int i, arr[4][3]={1, 2, 3, 4, 5, 6, 7};
  for (i=0; i<4; i++) printf("%d ", arr[i][0]); }
```

- a) 1 4 7 0 b) 1 4 7 10 c) 1 5 0 0
d) 1 5 2 6 e) Compile-time error

10) What is the output of the following program?

```
double m(int a[], int s)
{ int i;
  double sm=0;
  for (i=0; i<s; i++) sm += a[i]*a[i];
  return sm/s; }
int main()
{ int a[5]={1, 2, 3, 4, 5};
  printf("%.2f", m(a, 5)); }
```

- a) 3.00 b) 5.00 c) 7.00 d) 9.00 e) 11.00

11) What is the output of the following program?

```
int main()
{ int x=3, y=5, z=8, a=0;
  if (++x>3 || y++<6)
  { if (z-- < 8) a--; }
  else a++;
  printf("%d %d %d %d", x, y, z, a); }
```

- a) 4 6 7 1 b) 4 6 7 0 c) 4 5 7 1
d) 4 5 7 0 e) 4 6 8 1

12) What is the output of the following program?

```
int main()
{ int i, j, k, s=0;
  for (i=1; i<=5; i++)
    for (j=1; j<=5; j++)
      for (k=1; k<=5; k++)
        { if (i%2 || j%2) continue;
          s++; }
  printf("%d", s); }
```

- a) 125 b) 50 c) 25 d) 20 e) Overflow error

13) What is the output of the following program?

```
int main()
{ int c[5]={1,2}, i, j;
  for (i=2; i<5; i++) c[i] = c[i-1] * c[i-2];
  for (j=0; j<5; j++) printf("%d ", c[j]); }
```

- a) 1 0 0 0 0 b) 1 3 3 9 27 c) 1 2 2 4 8
d) 1 1 1 1 8 e) 1 2 1 4 4

14) What is the output of the following program?

```
int compute(int a, int b, int c)
{ if (b = c+2*a) printf("%d", b/5);
  else if (a = b+c) printf("%d", a/3);
  else printf("0"); }
int main()
{ int x=10;
  compute(x-12, x-5, x-6); }
```

- a) 0 b) 1 c) 2 d) *** e) Compile-time error

15) What is the output of the following program?

```
int main()
{ char mystr[11]={"MIDDLE", "EAST", "TECHNICAL",
  "UNIVERSITY"};
  printf("%s", (int)mystr[1][4] ? "TO BE " : "NOT
  TO BE "); }
```

- a) "0" b) TO BE c) NOT TO BE
d) NOT TO e) Error – %s is not valid format placeholder

16) What is the output of the following program?

```
int main()
{ char name[5];
  int len;
  strcpy(name, "PERI");
  len = strlen(name);
  do
  { if (name[len]) name[len] += ('a' - 'A'); }
  while (len--);
  printf("%s", name); }
```

- a) PERI b) 0000 c) peri d) Peri e) Nothing

17) What is the output of the following program?

```
int main()
{ char fName[50]="Mary";
  char fLastName[50]="Doe";
  char sName[50]="Jane";
  char sLastName[50]="Doe Junior";
  int relative;
  relative = strcmp(fLastName, sLastName);
  if (!relative)
    printf("%s and %s are sisters", fName, sName);
  else
    printf("%s and %s are not sisters", fName,
    sName); }
```

- a) They are relatives
b) Mary Doe and Jane Doe are relatives
c) Mary and Jane are not relatives
d) Mary and Jane are not sisters
e) Jane is Junior of Mary

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18) What is the output of the following program?

```
int main()
{ char name[]="tombi";
  int i;
  for (i=0; i++ <= strlen(name); i++){
    switch (name[i])
    { case 'o': printf("O"); break;
      case 'm': printf("M"); break;
      case 't': printf("T"); break;
      case 'b': printf("B"); break;
      default: printf("*"); } } }
```

a) TOMB I b) TOMB I* **c) OB*** d) *TOMB I* e) *OB*

19) What is the output of the following program?

```
int main()
{ int i, j=0;
  for (i = -10; i<10; i++)
    if (i/10) j++;
  printf("%d", j); }
```

a) 0 **b) 1** c) 10 d) 20 e) 2

20) What is the output of the following program?

```
char myName[100]={'A','l','e','x'};
char hisName[100]={'A','l','e','x','\0'};
int main()
{ int i, j;
  if (strcmp(myName, hisName) == 0)
    printf("strcmp");
  else if (myName == hisName)
    printf(" and double equal sign");
  printf(" is OK"); }
```

a) strcmp is OK
b) strcmp and double equal sign is OK
c) double equal sign is OK
d) and double equal sign is OK
e) == sign can not be used for string comparison

21) What is the output of the following program?

```
int main()
{ int i, j, val=1, s=0;
  int arr[4][4], brr[4][4];
  for (i=0; i<4; i++)
    for (j=0; j<4; j++, val++)
      { arr[i][j] = val;
        brr[j][i] = val; }
  for (i=0; i<3; i++)
    for (j=0; j<4; j++)
      s += arr[i][j]-brr[i][j];
  printf("%d", s); }
```

a) -36 **b) -18** c) 0 d) 18 e) Compile-time error

22) What is the output of the following program?

```
int main()
{ int array[5][3]={ {1,1}, {1,2}, {2,4}, {3,6}, {4,8} };
  int i, j, result=1;
  for (i=0; i<5; i++)
    for (j=0; j<3; j++)
      result *= array[i][j];
  printf("%d", result); }
```

a) 1 **b) 0** c) 9216
d) 10 e) Type mismatch error message

23) What is the output of the following program?

```
int main()
{ int i, j, t;
  int A[3][3]={ {2,4,6}, {1,3,5}, {7,8,9} };
  for (i=0; i<3; i++)
    for (j=0; j<3; j++)
      { if (i == j) A[i][j] = i;
        else if (i > j) A[i][j] = i-1;
        else A[i][j] = j-1; }
  for (i=0; i<3; i++)
    for (j=0; j<3; j++)
      { printf("%d ", A[i][j]); } }
```

a) 0 0 1 0 1 1 1 1 2
b) 0 -1 -1 -1 1 0 -1 0 2
c) 1 1 2 1 2 2 2 2 3
d) 0 1 1 0 0 1 1 2 2
e) 2 4 6 1 3 5 7 8 9

24) What is the output of the following program?

```
double f(unsigned int a,char b)
{ ++a;
  return ((float)4*(int)a/(long)b*(double)5); }
int main()
{ unsigned int i=1;
  char c=-2;
  if (i>c) printf("%.2f", f(2, 2));
  else printf("%.2f", f(i, c)); }
```

a) 20.00 b) 40.00 c) -40.00 **d) -20.00** e) 30.00

25) What is the output of the following program?

```
int main()
{ int f=10, b=8, i=1;
  switch ((f || b++) && i++)
  { case 1: f++; i--;
    case 2: f--; b++;
    case 0: f=i*2; b=1; break;
    default: b++; }
  printf("%d %d %d", f, b, i); }
```

a) 1 1 1 **b) 2 1 1** c) 11 8 1 d) 10 9 1 e) 2 2 1

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26) What does following function do?

```
int func(char str[])
{ int len, i=0;
  len = strlen(str);
  for (; i<len; i++)
    if (str[i] != str[len-i-1])
      return 0;
  return 1; }
```

- a) It checks if a string contains two successively repetitive strings
- b) It checks if a string contains different characters
- c) It checks if a string is a palindrome
(left to right and right to left is the same string)
- d) It checks if all characters of a string are the same
- e) None of the above

27) What is the output of the following program?

```
int main()
{ int i;
  int A[3]={0,0,0};
  int B[3]={1,2,1};
  for (i=0; i<3; i++) A[(B[i]++)-1]++;
  for (i=0; i<3; i++) printf("%d ", A[i]+B[i]); }
```

- a) 3 3 1 b) 2 5 3 c) 1 4 2 d) 4 4 2 e) 1 2 1

28) What is the output of the following program?

```
void func(int a[],int b)
{ a[1]++;
  b--;
  printf("%d %d\n", a[1], b); }
int main()
{ int a=2;
  int b[3]={1,2,3};
  func(b, a);
  printf("%d %d", a, b[1]); }
```

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

29) What is the output of the following program?

```
void fun(int ar1[], int ar2[])
{ int i;
  for (i=0; i<4; i++)
    ar1[i] = ar1[i] - ar2[i]%10; }
int main()
{ int i;
  int ar1[]={14,23,36,42}, ar2[]={23,11,25,40};
  fun(ar1, ar2);
  for (i=0; i<4; i++)
    printf("%d", ar1[i]); }
```

- a) 4132632 b) 14233642 c) 10203040
d) 11223142 e) 14203042

30) Which declares a two-dimensional array?

- a) array a[2][2]; b) int a[2][2]; c) int a[2];
d) int a(2)(2); e) int a[2,2];

31) What is the output of the following program?

```
int main()
{ int k, c, m=5;
  double a, g=0;
  for (k=0; k<=m; k++)
    do
      { a=1;
        for (c=1; c<=k; c++)
          { a += a*c;
            g = g + (k + (m+c) / ++a); }
        g++; }
  while (a<0);
  printf("%.2f", g); }
```

- a) 100.64 b) 75.48 c) 99.64 d) 74.48 e) Infinite loop

32) What is the output of the following program?

```
int func(int i, int j)
{ return (i++ * --j); }
int main()
{ int i;
  i = func(2, 3) + func(3, 5);
  printf("%d ", --i); }
```

- a) 25 b) 15 c) 28 d) 22 e) 20

33) What is the output of the following program?

```
f()
{ int x=1;
  static int y=1;
  printf("%d%d", x++, y++); }
int main()
{ f();
  f(); }
```

- a) 1111 b) 1212 c) 1112
d) 1122 e) Compile-time error