EECS-22: Advanced C Programming Quiz 1 (40 Minutes)

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1. **What's the effect of `#include <stdio.h>` in a C program?**
   - (a) Header file
   - (b) Preprocessor directive
   - (c) Function
   - (d) None

2. **Which is a valid keyword?**
   - (a) integer
   - (b) char
   - (c) Float
   - (d) double

3. **Which of the following are valid data types in C? (Select all that apply)**
   - (a) int
   - (b) float
   - (c) string
   - (d) double

4. **What is the size of `int` in a 32-bit compiler?**
   - (a) 2 bytes
   - (b) 4 bytes
   - (c) 8 bytes
   - (d) 16 bytes

5. **Which of the following are valid storage classes in C? (Select all that apply)**
   - (a) auto
   - (b) register
   - (c) extern
   - (d) string

6. **What is the output of `printf("%d", 5+5*2-3);`?**
   - (a) 12
   - (b) 7
   - (c) 14
   - (d) 10

7. **Which of the following are logical operators in C? (Select all that apply)**
   - (a) &&
   - (b) &
   - (c) ——
   - (d) !

8. **What is the purpose of the break statement in a switch case?**
   - (a) Exit program
   - (b) Exit loop
   - (c) Exit switch case
   - (d) Continue execution

9. **Which of the following are valid loop constructs in C? (Select all that apply)**
   - (a) for
   - (b) while
   - (c) do-while
   - (d) repeat-until

10. **What is the output of the following code?**

```c
#include <stdio.h>
int main() {
  int a = 5, b = 10;
  int result = (a > b) ? a : b;
  printf("%d", result);
  return 0;
}
```

   - (a) 5
   - (b) 10
   - (c) Error
   - (d) None

11. **Which of the following are valid ways to initialize an array in C? (Select all that apply)**
    - (a) int arr[] = 1, 2, 3;
    - (b) int arr[3] = 1, 2, 3;
    - (c) int arr[3] = 1;
    - (d) int arr[3] = 1, 2, 3, 4;

12. **What is the output of the following code?**

```c
#include <stdio.h>
int main() {
  int i = 0;
  for (; i < 5; i++)
  {
    if (i == 3) break;
  }
  printf("%d", i);
  return 0;
}
```

   - (a) 3
   - (b) 4
   - (c) 5
   - (d) 6

13. **Which of the following are valid ways to define a macro in C? (Select all that apply)**
    - (a) #define PI 3.14
    - (b) #define SQUARE(x) (x * x)
    - (c) #define MAX(a, b) ((a > b) ? a : b)
    - (d) #define int INTEGER

14. **What is the output of the following code?**

```c
#include <stdio.h>
int main() {
  int x = 10;
  if (x = 0) printf("T");
  else printf("F");
  return 0;
}
```

(a) T

(b) F

(c) Error

(d) None

15. **Which of the following are valid ways to declare a function in C? (Select all that apply)**

    (a) void func();

    (b) void func(int a, int b);

    (c) int func();

    (d) func() void;

16. **What is the output of the following code?**

```c
#include <stdio.h>
int main() {
   int i = 10;
   do {
   printf("%d ", i);
   i--;
   } while (i > 5);
   return 0;
}
```

    (a) 10 9 8 7 6

    (b) 10 9 8 7 6 5

    (c) 9 8 7 6 5

    (d) Infinite loop

17. **What is the output of the following code?**

```c
#include <stdio.h>
int main() {
   int i = 0;
   while (i < 3) {
    printf("%d ", i);
    i++;
   }
   return 0;
}
```

    (a) 0 1 2

    (b) 0 1 2 3

    (c) 1 2 3

    (d) Infinite loop

18. **What is the output of the following code?**

```c
#include <stdio.h>
int main() {
  int a = 5, b = 10;
  if (a > b) printf("A");
  else printf("B");
  return 0;
}
```

    (a) A

    (b) B

    (c) Error

    (d) None

19. **What is the output of the following code?**

```c
#include <stdio.h>
int main() {
  int x = 10;
  printf("%d", x << 1);
  return 0;
}
```

    (a) 10

    (b) 20

    (c) 5

    (d) Error

20. **What is the output of the following code?**

```c
#include <stdio.h>
int main() {
  int i;
  for (i = 0; i < 3; i++)
  {
   static int x = 0;
   x++;
   printf("%d ", x);
  }
  return 0;
}
```

    (a) 0 1 2

    (b) 1 2 3

    (c) 1 1 1

    (d) Error