



KAZAKH-BRITISH TECHNICAL UNIVERSITY  
FACULTY OF INFORMATION TECHNOLOGIES  
**Course:** Programming Principles I      **Date:** 14/12/2019  
**Variant:** 1

If you have multiple answers for one question write them all

- |    |    |     |     |     |
|----|----|-----|-----|-----|
| 1. | 5. | 9.  | 13. | 17. |
| 2. | 6. | 10. | 14. | 18. |
| 3. | 7. | 11. | 15. | 19. |
| 4. | 8. | 12. | 16. | 20. |

---

1. Which of the following data types takes 1 byte of memory?

- (a) int                      (b) long long                      (c) char                      (d) double

2. Logical operator XOR is denoted by:

- (a) %                      (b) #                      (c) ^                      (d) —

3. What is the output of following program?

---

```
#include <iostream>
using namespace std;
int main(){
    int x = 15, y = 20;
    x = 23;
    y++;
    cout << x % y;
    return 0;
}
```

---

- (a) 19                      (b) 17+                      (c) 3                      (d) None of them

4. What is the output of following program?

---

```
#include <iostream>
using namespace std;
int main(){
    int x = 7, y = 2, cnt = -1;
    while(x > y){
        if(x % y == 0){
            cnt++;
        }
        x--;
    }
    cout << cnt;
    return 0;
}
```

---

- (a) 2+                      (b) 1                      (c) 3                      (d) None of them

5. What is the output of following program?

---

```
#include <iostream>
using namespace std;
int main(){
    int n = 14;
    for(int i = 1; i < n; i *= 3){
        cout << 2 * i << " ";
    }
    return 0;
}
```

---

- (a) 2 4 6 8 10 12 14 16 18 20 22 24 26  
(b) 2 6 18  
(c) 4 12  
(d) None of them

6. What is the output of following program?

---

```
#include <iostream>
using namespace std;
int main(){
    int a[6] = {4, 0, 2, -5, -3, 7};
    int cnt = 0;
    for(int i = 0; i < 6; i++){
        if(a[i] >= 0){
            cnt++;
        }
    }
    cout << cnt;
    return 0;
}
```

---

- (a) 3                      (b) 4                      (c) 2                      (d) None of them

7. What is the output of following program?

---

```
#include <iostream>
#include <string>
using namespace std;
int main(){
    string str = "ENJOY FINALS";
    string sub = str.substr(4, 5);
    cout << sub;
    return 0;
}
```

---

- (a) OY FIN                      (b) OY FI                      (c) FINAL                      (d) Y FIN

8. What is the output of following program?

---

```

#include <iostream>
using namespace std;
bool isRealFit(string faculty, double gpa){
    return (faculty == "fit" && gpa >= 3.5);
}
int main(){
    string f1 = "fitti", f2 = "fit";
    double gpa1 = 3.45, gpa2 = 3.52;
    if(isRealFit(f1, gpa1) && isRealFit(f2, gpa2)){
        cout <<"GOOD";
    }else cout <<":(";
    return 0;
}

```

---

(a) GOOD

(b) :(

(c) Error in the code

(d) GPA is not important

9. What is the output of following program?

---

```

#include <iostream>
#include <vector>
using namespace std;
int main(){
    vector<int> v;
    int arr[5] = {3, 4, 5, 6, 7};
    for(int i = 0; i < 5; i++){
        if(v.size() <= 3 || arr[i] % 2 == 0)
            v.push_back(arr[i]);
    }
    for(int i = 0; i < v.size(); i++){
        cout << v[i] <<" ";
    }
    return 0;
}

```

---

(a) 3 4 5

(b) 4 6

(c) 3 4 5 6

(d) None of them

10. What is the output of following program?

---

```

#include <iostream>
using namespace std;
int main(){
    set<int> myset;
    int arr[5] = {3, 4, 5, 6, 7};
    for(int i = 0; i < 5; i++){
        if(arr[i] % 2 == 1){
            myset.insert(arr[i]);
        }
    }
    cout <<myset.size();
}

```

---

- (a) 2                                      (b) 4                                      (c) 2                                      (d) Error in code

11. What is the output of following program?

---

```
#include <iostream>
#include <map>
using namespace std;
int main(){
    map<string , int> mymap;
    string [5] phrases = {"hello", "welcome", "ready",
                          "luck", "positive"};
    for (int i = 0; i < 5; i++){
        mymap[phrases[i]] = i + 1;
    }
    map<string , int> :: iterator it;
    for (it = mymap.begin(); it != mymap.end(); it++){
        cout << it->first << " ";
    }
    return 0;
}
```

---

- (a) hello welcome ready luck positive  
(b) 1 2 3 4 5  
(c) hello luck positive ready welcome  
(d) None of them

12. What is the output of following program?

---

```
#include <iostream>
using namespace std;
int main(){
    int a = 5, b = 9;
    int a1 = b << 1;
    int b1 = a >> 1;
    cout << a1 << " " << b1;
    return 0;
}
```

---

- (a) 2 18                                      (b) 18 2                                      (c) 10 4                                      (d) 4 10

13. Evaluate the next expression:  $((\text{false} \text{ --- } \text{true}) \wedge \text{false}) \&\& \text{true}$

- (a) true                                      (b) false                                      (c) I don't know                                      (d) true false

14. Which one is **not a correct** variable type in C++?

- (a) string                                      (b) float                                      (c) luck                                      (d) double

15. Pick out the correct statement about **maps**.

- (a) map has unique values  
(b) map has unique keys  
(c) map is a static

- (d) None of them
16. Pick out the correct statement about **sets**.
- (a) sets store distinct elements
  - (b) sets can store any elements
  - (c) set of sets is not possible
  - (d) None of them
17. Which statement returns **true**?
- (a) `a == b`
  - (b) `(65%4) ≥ (34%3)`
  - (c) `true ^ true`
  - (d) None of them
18. Which container doesn't exist in C++?
- (a) `multimap`
  - (b) `stack`
  - (c) `queue`
  - (d) None of them
19. What is the output of following program?

---

```
#include <iostream>
using namespace std;
int main() {
    int r, x = 3;
    float y = 5;
    r = y % x;
    cout << r;
    return 0;
}
```

---

- (a) 1
  - (b) 2
  - (c) 3
  - (d) Compile error
20. What is the output of following program?

---

```
#include <iostream>
#include <string>
using namespace std;
int main(){
    string s = "abaacabaca";
    string t = "ba";
    s.erase(1, 2);
    cout << s.find(t);
    return 0;
}
```

---

- (a) 1
- (b) 6
- (c) 4
- (d) None of them

**Minutes #2 of Faculty of Information Technology meeting November 11, 2019**

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