KAZAKH KBTU BRITISH
T E C H N I C A L
U N I V E R S I T Y

Kazakh-British Technical University
Faculty of Information technologies
Course: **Programming Principles I**   Date: **14/12/2019**
Variant: 4

Full name:

Answers section
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.

Questions section

1. **Which of the data types can not store "123,678" value?**

   (a) string   (b) float   (c) int   (d) double

2. **What will be the output of this code:**

```cpp
#include <iostream>
using namespace std;
int main(){
    int n = 135;
    int k =  n%10;
    if(n%2==1 && n%k==0)
        cout << "yes";
    else
        cout << "no";
    return 0;
}
```

   (a) yes   (b) no   (c) nan   (d) none of the above

3. **What will be the output of this code:**

```cpp
#include <iostream>
using namespace std;
int main()
{
    int a[5] = {1,2,3,4,5};
    for (int i=4;i>=0;i--)
    {
        cout<<a[i]<<" ";
    }
}
```

(a) **1 2 3 4 5**   (b) **5 4 3 2 1**   (c) **4 3 2 1**   (d) **4 3 2 1 5**

4. **What will be the output of this code:**

```cpp
#include <iostream>
using namespace std;
int main(){
    string s;
    cin >> s;
    cout << s << endl;
    return 0;
}
```

(a) Hello   (b) Hello world   (c) world   (d) none of the above

5. **What is wrong in the following code:**

```cpp
#include <iostream>
using namespace std;
int main()
{
    int n = 3;
    double score[n];
    for(int i=0;i<=n;i++)
    {
        cout<<"Enter score\n";
        cin>>score[i];
    }
    return 0;
}
```

(a) Array must be 'int' type   (b) It should be 'cin' for score[n];   (c) 'i' must be strictly less than 'n'   (d) Everything is right

6. **What is return type of function with no return value**

(a) int   (b) char   (c) long long   (d) void

7. **What is the output of the following code**

```cpp
#include <iostream>
#include <vector>
using namespace std;
int main()
{
    vector<int> v;
    v.push_back(10);
    v.push_back(20);
    v.push_back(30);
    v.push_back(40);
    v.push_back(50);
    int erase = 3;
    v.erase(v.begin()+erase-1);
```

```
vector<int>::iterator it;
for(it = v.begin();it!=v.end();it++)
{
    cout<<*it<<" ";
}
return 0;
}
```

(a) 10 20   (b) 10 20 30 50   (c) 10 20 40 50   (d) none of the above

8. **How set will look if we add this array elements to it?**

```
string arr[] = {"Programming", "KBTU",
"kbtu", "19BD", "Calculus", "KBTU"};
```

(a) Programming, KBTU, kbtu, 19BD, Calculus, KBTU

(b) 19BD, Calculus, KBTU, Programming, kbtu

(c) 19BD, Calculus, KBTU, Programming

(d) Calculus, KBTU, Programming, kbtu, 19BD

9. **You have map with these values:**

```
map.insert(pair<string, int>("one", 10));
map.insert(pair<string, int>("two", 20));
map.insert(pair<string, int>("three", 60));
map.insert(pair<string, int>("four", 40));
map.insert(pair<string, int>("five", 80));
map.insert(pair<string, int>("six", 10));
map.insert(pair<string, int>("seven", 60));
```

What code

```
cout<<map["three"]<<endl;
```

will do ?

(a) output "three"

(b) output "60"

(c) output "three 60"

(d) nothing, we can not cout map without iterator

10. **Calculate the following expression (true AND false) XOR (true OR false)**

(a) true

(b) false

(c) impossible to calculate

(d) 1.3

11. **What is the output of following program?**

```cpp
#include <iostream>
using namespace std;
int main()
{
    int arr[10] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};
        for(int i = 1 ; i <= 10; i++)
        {
            if(arr[i] % 2 != 0 and i % 2 == 0)
                cout << i << " ";
        }

    return 0;
}
```

(a) **2 4 6 8**

(b) **3 5 7 9**

(c) **2 4 6 7**

(d) **1 3 5 7**

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

```cpp
#include <iostream>
using namespace std;
int main()
{
    string s1 = "Ali";
    string s2 = "Alik";
    string s3 = s1+ s2;

        for(int i = 1 ; i < s3.length() ; i++)
        {
            if(i % 2 == 0)
            {
                cout << s3[i] << "-";
            }
        }

    return 0;
}
```

(a) i-l-k

(b) A-l-i-k-

(c) i-l-k-

(d) i-i-l-k-

13. **What is the output of following program?**

```cpp
#include <iostream>
using namespace std;
string check(int a)
{
    if(a % 2 != 0)
        return "yes";
```

```cpp
        else
            return "No";
}
int main()
{
    int arr[8] = {122,32,41,43,56,53,67,77};

    for(int i = 0 ; i <=7 ;  i++)
        cout << check(arr[i]) << " ";

    return 0;
}
```

(a) no no yes yes no yes yes yes

(b) No No yes yes No yes yes yes

(c) No No yes yes No yes No yes

(d) No No yes yes yes yes yes yes

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

```cpp
#include <iostream>
#include <vector>
using namespace std;
int main()
{
    vector<int> v;
    vector<int> v1;
    v.push_back(1);
    v1.push_back(3);
    v1.push_back(5);
    v.push_back(01);
    v.pop_back();
    v1.push_back(2);
    v.push_back(4);
    v1.push_back(2);
    v1.pop_back();
    v.pop_back();
    cout << v1.front() << " " << v.back() << " " << v.front();
    return 0;
}
```

(a) 3 1 1

(b) 3 01 1

(c) 1 1 3

(d) 3 2 1

15. **What is the output of following program?**

```cpp
#include <iostream>
#include <iostream>
#include <map>
using namespace std;
int main()
{
```

```cpp
    int a[10] = {1, 3, 4, 2, 1, 7, 4, 5, 6, 7};
    map<int, int> m;
    for(int i = 3 ; i < 10 ; i++){
        if(i % 2 == 0)
        m[i] += a[i];
        else m[i+1] -= a[i];
    }
    map<int,int>::iterator it;

    for( it = m.begin() ; it!=m.end() ; it++)
        cout << (*it).first << " " << (*it).second << " ";

    return 0;
}
```

(a) 4 -1 6 -3 8 1 10 2

(b) -1 6 -3 8 1 10 3

(c) 4 -1 6 -3 8 1 10 -7

(d) -1 6 -3 8 1 10 -7

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

```cpp
#include <iostream>
#include <set>
using namespace std;
int main()
{
    int a[10] = {1, 1, 2, 3, 4, 5, 3, 2, 13, 3};
    set <int> s;
    for(int i = 3 ; i < 10 ; ++i)
    {
        s.insert(a[i]);
    }

    set <int>::iterator it;

    for(it = s.begin() ; it != s.end() ; it++)
        cout << *it << " ";
    return 0;
}
```

(a) 2 3 4 5 13

(b) 1 2 3 4 5 13

(c) 2 3 4 5 13

(d) 3 4 5 13 14

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

```cpp
#include <iostream>
using namespace std;
int f(int a,int b)
{
    return a|b;
}
```

```cpp
int main()
{
    int a[4] = {1,2,3,4};

        for(int i = 0 ; i < 4 ; i=i+2)
            cout<<f(a[i],a[i+1])<<" ";

    return 0;
}
```

(a) 3 8

(b) 3 7

(c) 2 7

(d) 1 6

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

```cpp
#include <iostream>
#include <cmath>
using namespace std;
bool check(int n)
{
    for(int i = 2 ; i <= sqrt(n) ; i++)
    {
        if(n % i == 0)
            return 0;
    }

    return 1;
}
int main()
{
    int n = 765423;
    int res = 0;
        while(n > 0)
        {
            int x = n % 10;
            if(check(x)) res += x;
            else res -= x;
            n /= 10;
        }
        cout << res;
    return 0;
}
```

(a) 5

(b) 7

(c) 1

(d) 0

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

```cpp
#include <iostream>

using namespace std;

int main() {
    int n = 10;
    while(n > 0) {
        if (n & 1)
            cout << n << " ";
        n--;
    }
    return 0;
}
```

(a) 10 9 8 7 6 5 4 3 2 1

(b) 9 7 5 3 1

(c) 10 8 6 4 2

(d) No output

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

```cpp
#include <iostream>
using namespace std;
int main() {
    int cnt = 1;
    for (int i = 0; i < 5; i++) {
        int k = 0;
        for (int j = 0; j < 2; j++) {
            k++;
        }
        cnt*=k;
    }
    cout << cnt;
    return 0;
}
```

(a) 16

(b) 32

(c) 64

(d) 10

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