

Filieră teoretică, profil real, specializare științe ale naturii  
 SUBIECTUL I (20 de puncte)

1. c
2. a
3. a
4. b
5. d

SUBIECTUL al II-lea (40 de puncte)

1. a) 4  
 b) 45, 46, 47, 48, 49  
 c)

citește n,k (numere naturale, k număr prim)

- p<-0;
- └ pentru i<-1, n execută
- | x<-i
- | └ cât timp x%k=0 execută
- | | x<-[x/k]; p<-p+1
- | └ ─
- └ ─ scrie p
- d)

```

1  #include <iostream>
2  using namespace std;
3  int n,p,k,i,x;
4  int main()
5  {
6      cin>>n>>k;
7      p=0; i=1;
8      while (i<=n)
9      {
10         x=i;
11         while (x%k==0)
12         {
13             x=x/k;
14             p++;
15         }
16         i++;
17     }
18     cout<<p;
19     return 0;
20 }
21 
```

2. if ((d\_luna<e\_luna) || ((d\_luna==e\_luna)&&(d\_zi<e\_zi))

3. 7, 21 16

SUBIECTUL al III-lea (30 de puncte)

- 1.
- 2.

```

1  #include <iostream>
2  using namespace std;
3  int i,n,v[20],v1[20],v2[20],uc,k,l,aux,c,ok;
4  int main()
5  {
6      cout<<"n="; cin>>n;
7      for (i=1;i<=n;i++)
8      {
9          cout<<"v["<<i<<"]="; cin>>v[i]; }
10     k=0; l=0;
11     for (i=1;i<=n;i++)
12     {
13         aux=v[i]; ok=0;
14         while (aux!=0)
15         {
16             c=aux%10;
17             ok++;
18             aux=aux/10;
19         }
20         if (ok==2)
21         {
22             k++; v1[k]=v[i];
23         }
24         else
25         {
26             l++; v2[l]=v[i];
27         }
28     }
29     for (i=1;i<=l;i++)
30     cout<<v2[i]<<" "; cout<<endl;
31     for (i=1;i<=k;i++)
32     cout<<v1[i]<<" ";
33     return 0;
34 }

```

```

1  #include <iostream>
2  using namespace std;
3  int n, aux, uc, cl, ok;
4  int main()
5  {
6      cin>>n;
7      aux=n;
8      while (aux!=0)
9      {
10         uc=aux%10;
11         if (uc%2!=0)
12             cl=uc;
13         aux=aux/10;
14     }
15     ok=1;
16     while (n!=0)
17     {
18         uc=n%10;
19         if ((uc%2!=0)&&(uc!=cl))
20             ok=0;
21         n=n/10;
22     }
23     cout<<ok;
24     return 0;
25 }
26 
```

- 3.

```

1  #include <iostream>
2  #include <fstream>
3  using namespace std;
4  ofstream g("bag.txt");
5  int f0,f1,f2,f3,k,n,x;
6  int main()
7  {
8      cout<<"n="; cin>>n;
9      cout<<"x="; cin>>x;
10     f0=0;
11     f1=x;
12     f2=2*x-1;
13     k=3;
14     g<<f0<<" "<<f1<<" "<<f2<<" ";
15     while (k<n)
16     {
17         f3=f2+f1-f0;
18         g<<f3<<" ";
19         k++;
20         f0=f1;
21         f1=f2;
22         f2=f3;
23     }
24     return 0;
25 }
26 
```