In [1]:
```
import numpy as np
%matplotlib inline
```

In [2]:
```
import matplotlib.pyplot as plt
```

In [3]:
```
from PIL import Image # python imaging libarary
```

In [4]:
```
img=Image.open(r'C:\Users\WELCOME\Pictures\doll.jpg')
img
```

Out[4]:

In [5]:
```
type(img)
```

Out[5]:
```
PIL.JpegImagePlugin.JpegImageFile
```

In [6]:
```
img_arr=np.asarray(img)
img_arr
```

Out[6]:
```
array([[[ 56,  46,  19],
        [ 51,  41,  16],
        [ 45,  38,  12],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 36,  27,  12]],

       [[ 57,  47,  20],
        [ 52,  42,  17],
        [ 48,  38,  13],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 37,  28,  13]],

       [[ 60,  48,  22],
        [ 55,  43,  17],
        [ 51,  39,  15],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 37,  28,  13]],

       ...,

       [[ 56,  50,  26],
        [ 56,  50,  26],
        [ 56,  50,  26],
        ...,
        [120, 102,  56],
        [ 92,  75,  31],
        [ 64,  49,   6]],

       [[ 57,  51,  25],
        [ 54,  48,  22],
        [ 55,  49,  23],
        ...,
        [ 45,  37,  24],
        [ 21,  17,   6],
        [ 13,  10,   1]],

       [[ 57,  51,  25],
        [ 54,  48,  22],
        [ 55,  49,  23],
        ...,
        [ 23,  15,   2],
        [ 17,  13,   2],
        [ 20,  17,   8]]], dtype=uint8)
```

In [7]:
```
type(img_arr)
```

Out[7]:
```
numpy.ndarray
```

In [8]:
```
img_arr.shape
```

Out[8]:
```
(354, 236, 3)
```

In [9]:
```
plt.imshow(img_arr)
plt.show()
```

In [10]:
```
img_red=img_arr.copy()
img_red
```

Out[10]:
```
array([[[ 56,  46,  19],
        [ 51,  41,  16],
        [ 45,  38,  12],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 36,  27,  12]],

       [[ 57,  47,  20],
        [ 52,  42,  17],
        [ 48,  38,  13],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 37,  28,  13]],

       [[ 60,  48,  22],
        [ 55,  43,  17],
        [ 51,  39,  15],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 37,  28,  13]],

       ...,

       [[ 56,  50,  26],
        [ 56,  50,  26],
        [ 56,  50,  26],
        ...,
        [120, 102,  56],
        [ 92,  75,  31],
        [ 64,  49,   6]],

       [[ 57,  51,  25],
        [ 54,  48,  22],
        [ 55,  49,  23],
        ...,
        [ 45,  37,  24],
        [ 21,  17,   6],
        [ 13,  10,   1]],

       [[ 57,  51,  25],
        [ 54,  48,  22],
        [ 55,  49,  23],
        ...,
        [ 23,  15,   2],
        [ 17,  13,   2],
        [ 20,  17,   8]]], dtype=uint8)
```

In [11]:
```
img_red=img_arr.copy()
```

In [12]:
```
img_red
```

Out[12]:
```
array([[[ 56,  46,  19],
        [ 51,  41,  16],
        [ 45,  38,  12],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 36,  27,  12]],

       [[ 57,  47,  20],
        [ 52,  42,  17],
        [ 48,  38,  13],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 37,  28,  13]],

       [[ 60,  48,  22],
        [ 55,  43,  17],
        [ 51,  39,  15],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 37,  28,  13]],

       ...,

       [[ 56,  50,  26],
        [ 56,  50,  26],
        [ 56,  50,  26],
        ...,
        [120, 102,  56],
        [ 92,  75,  31],
        [ 64,  49,   6]],

       [[ 57,  51,  25],
        [ 54,  48,  22],
        [ 55,  49,  23],
        ...,
        [ 45,  37,  24],
        [ 21,  17,   6],
        [ 13,  10,   1]],

       [[ 57,  51,  25],
        [ 54,  48,  22],
        [ 55,  49,  23],
        ...,
        [ 23,  15,   2],
        [ 17,  13,   2],
        [ 20,  17,   8]]], dtype=uint8)
```

In [14]:
```
img_red ==img
```

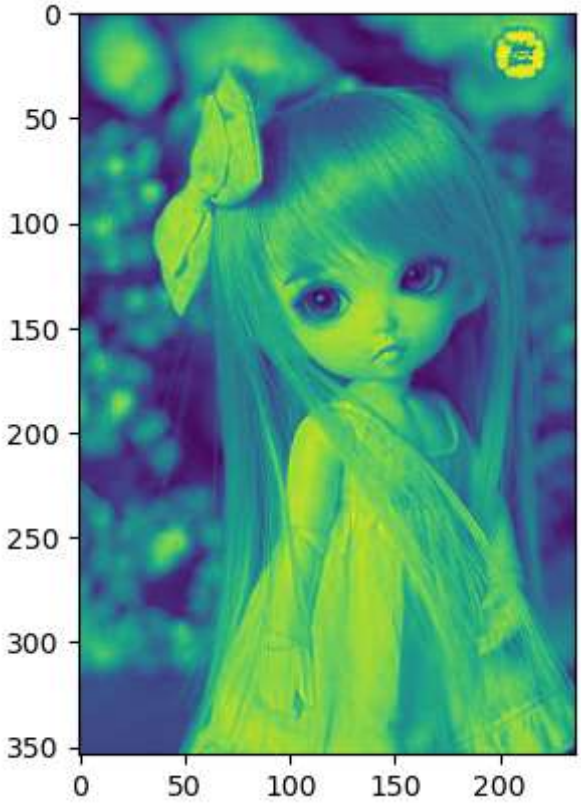
Out[14]:
```
array([[[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       ...,

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]],

       [[ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True],
        ...,
        [ True,  True,  True],
        [ True,  True,  True],
        [ True,  True,  True]]])
```

In [16]:
```
plt.imshow(img_red)
plt.show()
```

In [18]:
```
img_red.shape
```

Out[18]: (354, 236, 3)

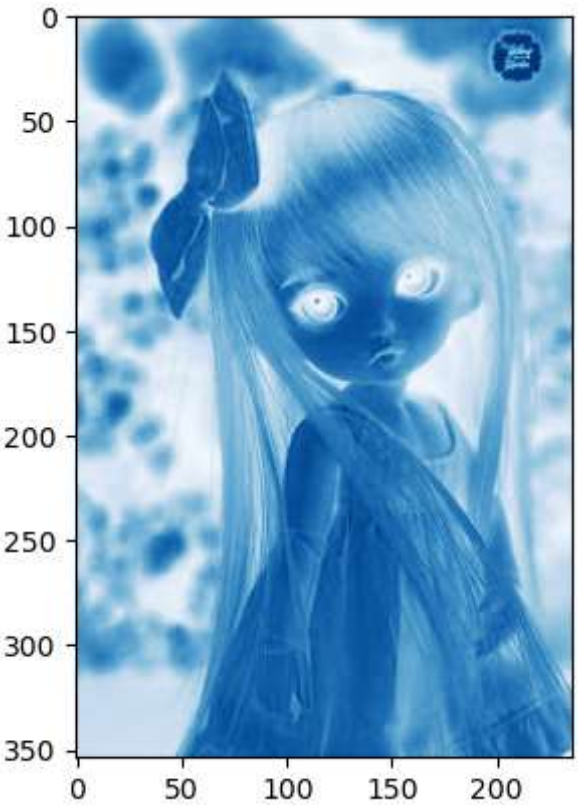
In [19]:
```
plt.imshow(img_red[:,:,0])
plt.show()
```



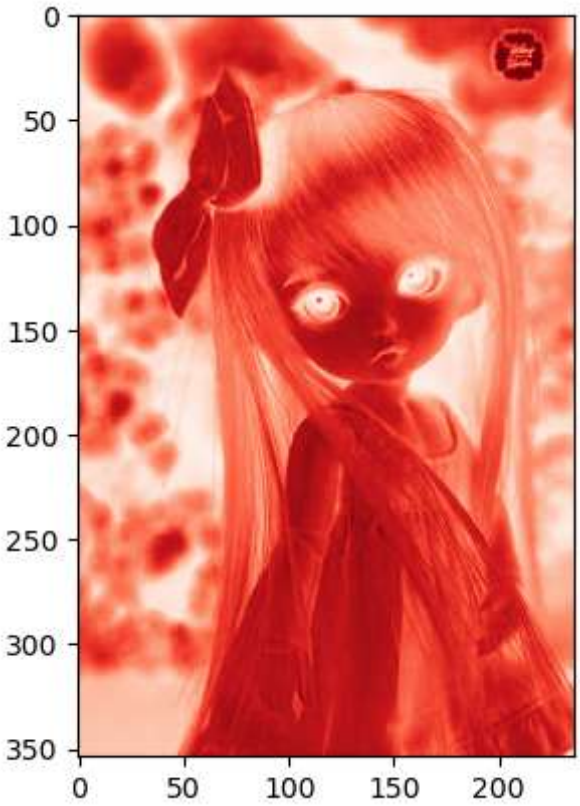
In [20]:
```
img_red[:,:,0]
```

Out[20]:
```
array([[ 56,  51,  45, ...,  62,  43,  36],
       [ 57,  52,  48, ...,  62,  43,  37],
       [ 60,  55,  51, ...,  62,  43,  37],
       ...,
       [ 56,  56,  56, ..., 120,  92,  64],
       [ 57,  54,  55, ...,  45,  21,  13],
       [ 57,  54,  55, ...,  23,  17,  20]], dtype=uint8)
```

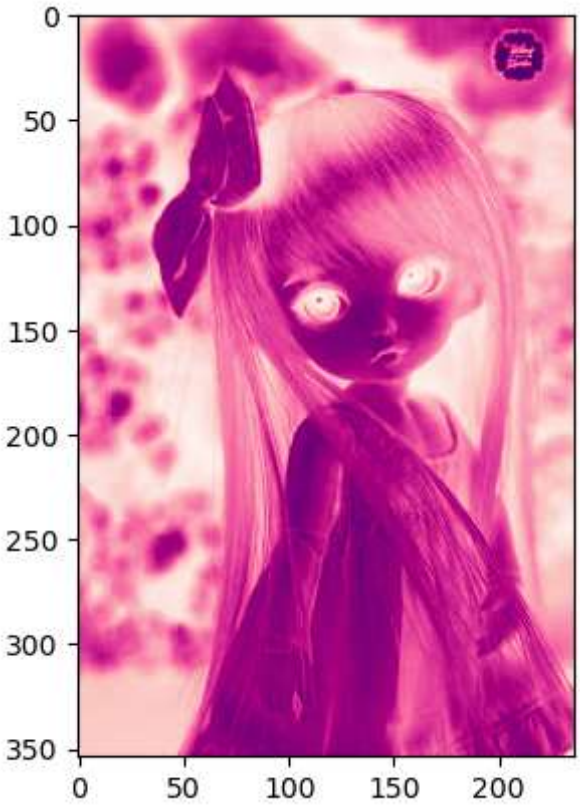
In [22]:
```
plt.imshow(img_red[:,:,0],cmap='Blues')
plt.show()
```



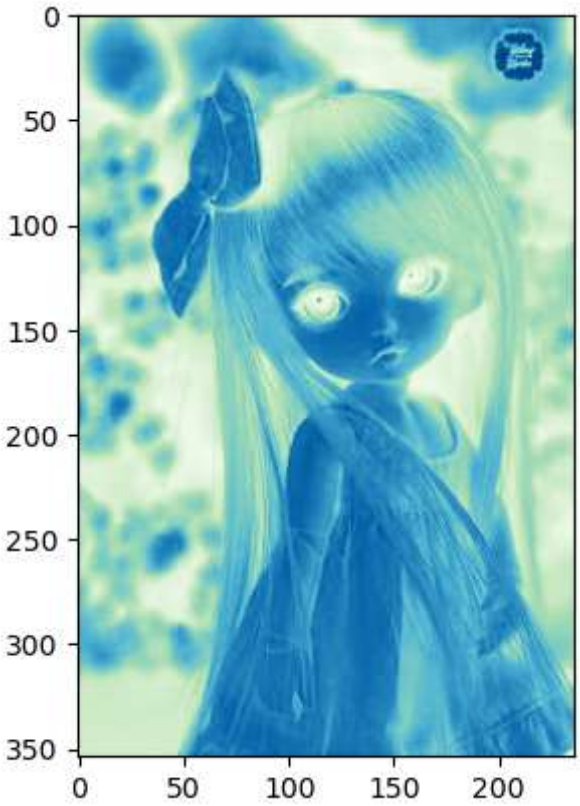
In [23]:
```
plt.imshow(img_red[:,:,0],cmap='Reds')
plt.show()
```



In [24]:
```
plt.imshow(img_red[:,:,0],cmap='RdPu')
plt.show()
```



In [25]:
```
plt.imshow(img_red[:,:,0],cmap='GnBu')
plt.show()
```



In [27]:
```
plt.imshow(img_red[:,:,0],cmap='gray')
plt.show()
```

In [28]:
```
img_red[:,:,1]
```

Out[28]:
```
array([[ 46,  41,  38, ...,  46,  31,  27],
       [ 47,  42,  38, ...,  46,  31,  28],
       [ 48,  43,  39, ...,  46,  31,  28],
       ...,
       [ 50,  50,  50, ..., 102,  75,  49],
       [ 51,  48,  49, ...,  37,  17,  10],
       [ 51,  48,  49, ...,  15,  13,  17]], dtype=uint8)
```

In [29]:
```
img_red[:,:,2]
```

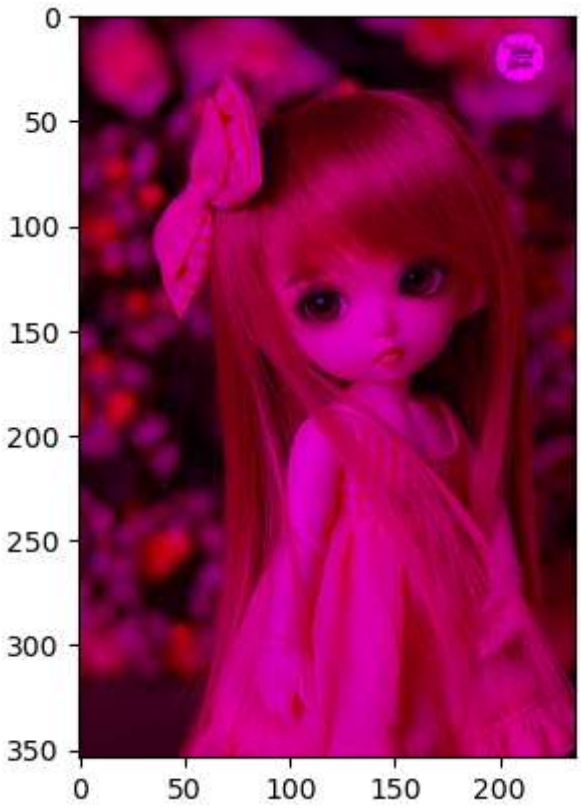
Out[29]:
```
array([[19, 16, 12, ..., 33, 17, 12],
       [20, 17, 13, ..., 33, 17, 13],
       [22, 17, 15, ..., 33, 17, 13],
       ...,
       [26, 26, 26, ..., 56, 31,  6],
       [25, 22, 23, ..., 24,  6,  1],
       [25, 22, 23, ...,  2,  2,  8]], dtype=uint8)
```

In [30]:
```
img_red[:,:,1]=0
```

In [31]:
```
img_red[:,:,1]
```

Out[31]:
```
array([[0, 0, 0, ..., 0, 0, 0],
       [0, 0, 0, ..., 0, 0, 0],
       [0, 0, 0, ..., 0, 0, 0],
       ...,
       [0, 0, 0, ..., 0, 0, 0],
       [0, 0, 0, ..., 0, 0, 0],
       [0, 0, 0, ..., 0, 0, 0]], dtype=uint8)
```

In [32]:
```
plt.imshow(img_red)
plt.show()
```

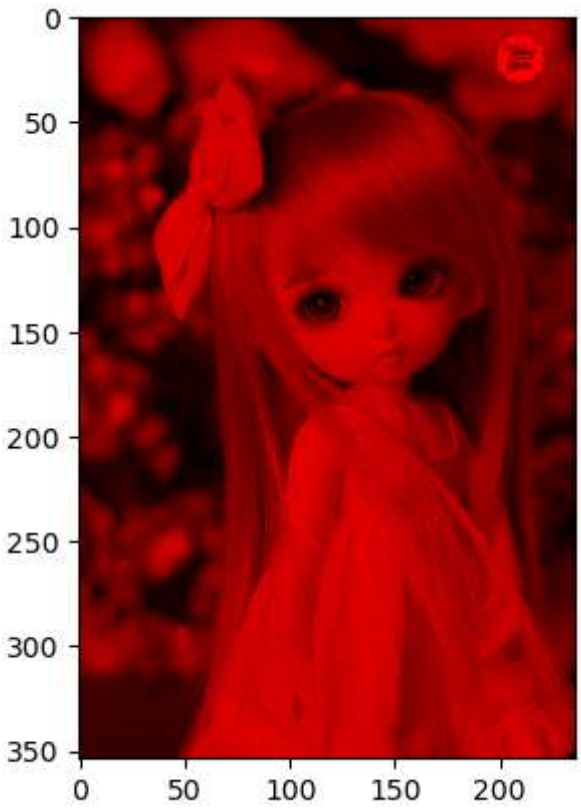


In [34]:
```
img_red[:,:,2]
```

Out[34]:
```
array([[19, 16, 12, ..., 33, 17, 12],
       [20, 17, 13, ..., 33, 17, 13],
       [22, 17, 15, ..., 33, 17, 13],
       ...,
       [26, 26, 26, ..., 56, 31,  6],
       [25, 22, 23, ..., 24,  6,  1],
       [25, 22, 23, ...,  2,  2,  8]], dtype=uint8)
```

In [35]:
```
img_red[:,:,2]=0
```

In [37]:
```
plt.imshow(img_red)
plt.show()
```



In [38]:
```
img_red
```

Out[38]:
```
array([[[ 56,   0,   0],
        [ 51,   0,   0],
        [ 45,   0,   0],
        ...,
        [ 62,   0,   0],
        [ 43,   0,   0],
        [ 36,   0,   0]],

       [[ 57,   0,   0],
        [ 52,   0,   0],
        [ 48,   0,   0],
        ...,
        [ 62,   0,   0],
        [ 43,   0,   0],
        [ 37,   0,   0]],

       [[ 60,   0,   0],
        [ 55,   0,   0],
        [ 51,   0,   0],
        ...,
        [ 62,   0,   0],
        [ 43,   0,   0],
        [ 37,   0,   0]],

       ...,

       [[ 56,   0,   0],
        [ 56,   0,   0],
        [ 56,   0,   0],
        ...,
        [120,   0,   0],
        [ 92,   0,   0],
        [ 64,   0,   0]],

       [[ 57,   0,   0],
        [ 54,   0,   0],
        [ 55,   0,   0],
        ...,
        [ 45,   0,   0],
        [ 21,   0,   0],
        [ 13,   0,   0]],

       [[ 57,   0,   0],
        [ 54,   0,   0],
        [ 55,   0,   0],
        ...,
        [ 23,   0,   0],
        [ 17,   0,   0],
        [ 20,   0,   0]]], dtype=uint8)
```

In [40]:
```
arr1=np.asarray(img)
arr1
```

Out[40]:
```
array([[[ 56,  46,  19],
        [ 51,  41,  16],
        [ 45,  38,  12],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 36,  27,  12]],

       [[ 57,  47,  20],
        [ 52,  42,  17],
        [ 48,  38,  13],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 37,  28,  13]],

       [[ 60,  48,  22],
        [ 55,  43,  17],
        [ 51,  39,  15],
        ...,
        [ 62,  46,  33],
        [ 43,  31,  17],
        [ 37,  28,  13]],

       ...,

       [[ 56,  50,  26],
        [ 56,  50,  26],
        [ 56,  50,  26],
        ...,
        [120, 102,  56],
        [ 92,  75,  31],
        [ 64,  49,   6]],

       [[ 57,  51,  25],
        [ 54,  48,  22],
        [ 55,  49,  23],
        ...,
        [ 45,  37,  24],
        [ 21,  17,   6],
        [ 13,  10,   1]],

       [[ 57,  51,  25],
        [ 54,  48,  22],
        [ 55,  49,  23],
        ...,
        [ 23,  15,   2],
        [ 17,  13,   2],
        [ 20,  17,   8]]], dtype=uint8)
```

In [41]:
```
type(arr1)
```

Out[41]:
```
numpy.ndarray
```

In [42]:
```
plt.imshow(arr1)
plt.show()
```

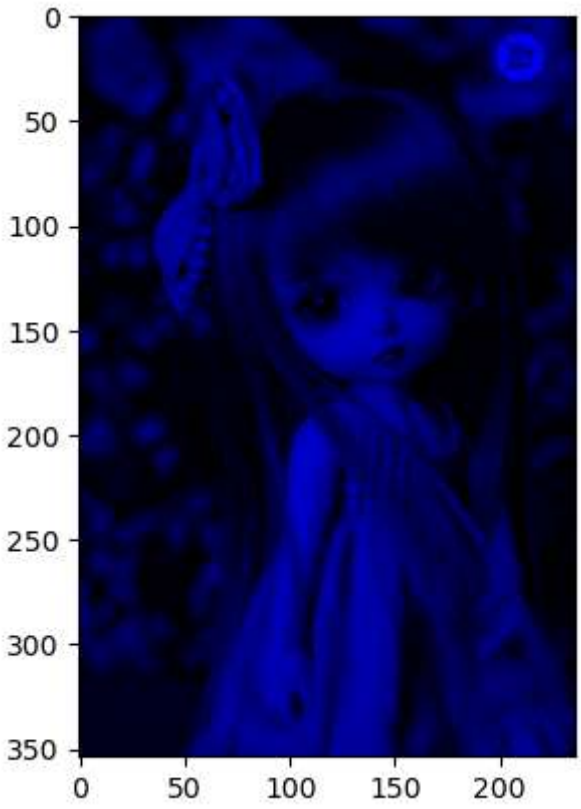
In [43]:
```
img1=arr1.copy()
```

In [44]:
```
img1[:,:,0]=0
```

In [45]:
```
plt.imshow(img1)
plt.show()
```

In [46]:
```
img1[:,:,1]=0
```

In [47]:
```
plt.imshow(img1)
plt.show()
```



In [ ]:
```

```