18) Implement image cropping, copying and pasting to select a region of interest (ROI) from the source image using Open CV.

CODE:

```
import cv2  # Import OpenCV library


# Step 1: Load the source image
image_path = r"C:\Users\harik\Downloads\CV LAB\MOUNTAIN.jpeg"  # Replace with your image path
image = cv2.imread(image_path)


if image is None:
    print("Error: Could not load the source image.")
    exit()


# Step 2: Define the ROI location and size (x, y, width, height)
x, y, w, h = 100, 100, 175, 83  # Example values – change as needed
roi = image[y:y+h, x:x+w]


# Step 3: Define a new location to paste the ROI (new coordinates)
x_new, y_new = 300, 300


# Step 4: Ensure the paste region fits within image bounds
img_h, img_w = image.shape[:2]
if x_new + w > img_w:
    x_new = img_w - w  # Adjust x_new to ensure it doesn't go beyond image width
if y_new + h > img_h:
    y_new = img_h - h  # Adjust y_new to ensure it doesn't go beyond image height


# Step 5: Paste the ROI into the new position on the image
image[y_new:y_new+h, x_new:x_new+w] = roi
```

```
# Step 6: Display the result
cv2.imshow("Image with ROI Pasted", image)

# Step 7: Save the result to a new file
output_path = r"C:\Users\harik\Downloads\CV LAB\roi_output.jpg"  # Define output path
cv2.imwrite(output_path, image)

# Wait until a key is pressed to close the image window
cv2.waitKey(0)
cv2.destroyAllWindows()
```

OUTPUT: