**1. What is the primary purpose of the "Image Compression Project in Java"?**

* A) To develop a GUI-based image editor
* B) To compress images for optimized storage
* C) To encrypt images for data security
* D) To create dynamic image filters  
  **Correct Answer:** B) To compress images for optimized storage

**2. Which library is primarily used in this project for image handling?**

* A) java.sql
* B) java.awt
* C) java.util
* D) java.io  
  **Correct Answer:** B) java.awt

**3. What is the main benefit of image compression in this project?**

* A) Improved image quality
* B) Reduced file size for storage and transmission
* C) Enhanced image resolution
* D) Faster image rendering  
  **Correct Answer:** B) Reduced file size for storage and transmission

**4. Which image format is most commonly associated with lossy compression?**

* A) PNG
* B) JPEG
* C) BMP
* D) TIFF  
  **Correct Answer:** B) JPEG

**5. In this project, which algorithm is utilized to compress images?**

* A) Run-Length Encoding
* B) RSA
* C) Huffman Coding
* D) Discrete Cosine Transform (DCT)  
  **Correct Answer:** D) Discrete Cosine Transform (DCT)

**6. What is the role of pixel manipulation in image compression?**

* A) To adjust the brightness of an image
* B) To remove unnecessary data and reduce file size
* C) To add effects like grayscale and sepia
* D) To enhance color quality  
  **Correct Answer:** B) To remove unnecessary data and reduce file size

**7. What does lossy compression mean in the context of this project?**

* A) Compression without any loss in quality
* B) Reducing file size by removing some data, which may reduce quality
* C) Compression that only applies to text files
* D) A method of archiving multiple images together  
  **Correct Answer:** B) Reducing file size by removing some data, which may reduce quality

**8. What is the purpose of the Discrete Cosine Transform (DCT) in this project?**

* A) To convert images to binary code
* B) To remove redundant pixels
* C) To transform image data into frequency components for compression
* D) To apply color filters to the image  
  **Correct Answer:** C) To transform image data into frequency components for compression

**9. What type of compression is used if there is no loss in image quality?**

* A) Lossy
* B) Binary
* C) Lossless
* D) Hybrid  
  **Correct Answer:** C) Lossless

**10. Which tool can be used to verify the compression efficiency in this project?**

* A) Stopwatch
* B) File size comparison before and after compression
* C) Image editor
* D) Graphic tablet  
  **Correct Answer:** B) File size comparison before and after compression

**11. Which format is commonly used for lossless image compression?**

* A) JPEG
* B) PNG
* C) MP4
* D) SVG  
  **Correct Answer:** B) PNG

**12. What is a potential future enhancement for the "Image Compression Project in Java"?**

* A) Adding 3D graphics support
* B) Implementing additional compression algorithms
* C) Including audio compression
* D) Removing all compression options  
  **Correct Answer:** B) Implementing additional compression algorithms

**13. In this project, what aspect is essential for user input validation?**

* A) Validating image file format
* B) Checking for numeric-only filenames
* C) Verifying network connection speed
* D) Ensuring compatibility with video files  
  **Correct Answer:** A) Validating image file format

**14. Which approach is commonly used for decompression in this project?**

* A) Simple text parsing
* B) Reversing the compression algorithm
* C) Binary addition
* D) Random pixel generation  
  **Correct Answer:** B) Reversing the compression algorithm

**15. Which of the following is a key challenge addressed by this project in image compression?**

* A) Memory management for large images
* B) Displaying high-quality graphics
* C) Color correction for enhanced visuals
* D) Managing network delays  
  **Correct Answer:** A) Memory management for large images