Binary Palindrome

1. What is a binary palindrome?

- A binary number with an even number of digits
- **A binary number that reads the same forwards and backwards**
- A binary number with all ones and no zeroes
- A binary number that is divisible by 2

Ans: A binary number that reads the same forwards and backwards

2. Which of the following is a binary palindrome?

- **101101**
- 110010
- 100110
- 111100

Ans: The binary palindrome among the given options is: **101101**

3. How many binary palindromes are there with 4 bits?

- 2
- **4**
- 6
- 8

Ans: 4

4. What is the decimal equivalent of the binary palindrome 11011?

- 13
- 21
- 27
- 19

Ans: 13

5. Which of the following binary numbers is a palindrome?

- **1001001**
- 1010101
- 1100110
- 1110010

Ans: The binary palindrome among the given options is: **1001001**

6. What is the smallest binary palindrome that is also a prime number?

- 101
- 111
- 1001
- 1111

Ans: 1001

7. How can you determine if a binary number is a palindrome?

- **Compare its digits in pairs from both ends towards the center**
- Count the number of ones and zeroes in the binary number
- Reverse the binary number and check if it's the same as the original
- Divide the binary number in half and check if both halves are the same

Ans: **Compare its digits in pairs from both ends towards the center**

8.What is the correct statement about binary palindrome

- A number that is divisible by 2
- **A number that reads the same forward and backward in binary representation**
- A number that is a power of 2
- A number with only 0s and 1s in its binary representation

Ans: A number that reads the same forward and backward in binary representation

9. Which of the following methods checks if a given number is a binary palindrome?

- `boolean isBinaryPalindrome(int number)`
- `boolean checkPalindrome(String binary)`
- `boolean isBinaryPalindrome(String binary)`
- **There is no built-in method in Java to check for binary palindromes**

Ans: There is no built-in method in Java to check for binary palindromes

10.What will be the output of the following Java code?

```java
public class BinaryPalindrome {
public static boolean isBinaryPalindrome(String binary) {
StringBuilder reversed = new StringBuilder(binary).reverse();
return binary.equals(reversed.toString());
}

public static void main(String[] args) {
String binary1 = "11011";
String binary2 = "101101";

System.out.println(isBinaryPalindrome(binary1));
System.out.println(isBinaryPalindrome(binary2));
}
}
```

Ans: True True