Graded Assessment – Error Control

1. Given an information polynomial code I(x) = X^7 + x^6 + x^1 + 1, which is its corresponding per-bit information frame?

- **11000011**
- 01100011
- None of the above
- 10100010

2. What is the remainder obtained by dividing $x^7 + x^5 + 1$ by the generator polynomial $x^3 + 1$?

- **$x^2 + x + 1$**
- $x^2 + x$
- $x^2 + 1$
- None of the above

3. Given a generator polynomial g(x) = $x^3 + x + 1$. Consider the information sequence 1001. By CRC method, what is the resulted codeword for transmission?

- 1001000
- 1010110
- **1001110**
- 1001111

4. Which of following generator polynomial can detect all single bit errors in an information frame?

- g(x) = x
- g(x) = x^2

- **g(x) = x + 1**
- All of the above

5. Internet protocols use check bits to detect errors, instead of using CRC polynomial. The primary rationale is

- Strength of error detection capability
- **Simplicity of implementation**
- CRC polynomial cannot work for Internet protocols
- None of the above

6. The two basic approaches in error control are error prevention and detection, and error correction and re-transmission

- True
- **False**

7. Find parity bit for 1001011

- **0**
- 1
- 2
- None of the above

8. The divisor in a cyclic code is normally called the _____.

- Degree
- Redundancy
- **Generator**
- None of the above

9. The checksum of 0000 and 0000 is

- 0101
- 1010
- **1111**
- 0000

10. In ASCII, a single parity bit code can detect _____ errors.

- An even number of
- No errors
- **An odd number of**
- Two