

### **3.1 Question 1**

**3.1.A Provide a quick explanation why the following statements are True or False:**

**Asymmetric encryption can be used for confidentiality but not for authentication**

**In asymmetric encryption, plaintext is transformed into ciphertext using two keys and a decryption algorithm.**

**Much of the theory of public-key cryptosystems is based on number theory.**

**A public-key encryption scheme is not vulnerable to a brute-force attack.**

**The defense against the brute-force approach for RSA is to use a large key space.**