**NAIROBI INSTITUTE OF BUSINESS STUDIES**

**DEPARTMENT OF COMPUTER SCIENCES**

**DIPLOMA IN COMPUTER ENGINEERING (ABMA LEVEL 4)**

**END OF TERM EXAMINATION– SEPTEMBER 2014**

**TIME ALLOWED: 3 HOURS**

**COMPUTER SECURITY**

|  |
| --- |
| **INSTRUCTIONS:**   1. Answer **ALL the Seven questions.** 2. **Time allowed is 3 hours.** 3. Any examination **irregularity** will lead to **disqualification.** 4. Indicate your **Admission No**. in each answer sheet provided. 5. Cell phones should be switched off during the examination. 6. No reference material of any kind should be carried into the examination room. 7. Marks may be lost for illegibility. 8. All questions carry equal marks. |

***© NIBS***

**©NIBS 2014**

**Question 1**

Metasploit is a framework used to exploit common vulnerabilities in software. Describe how you would protect a system against such attacks. (20 marks)

**Question 2**

When memory in a given space is not allocated properly it can lead to buffer overflows and heap overflows. How can these programming errors be used to exploit a vulnerable system? (20 marks)

**Question 3**

Shellcode is used as a means to attack a system as it is lightweight and can be used in low-memory environments. How could Shellcode be used to leverage access from an exploit? (20 marks)

**Question 4**

SQL injection attacks are a major threat to databases. How can user input be secured so that these types of attacks cannot be launched? (20 marks)

**Question 5**

Describe phishing and how phishing attacks can be overcome through the use of technology. (20 marks)

**Question 6**

How can a system be secured against port scans? (20 marks)

**Question 7**

Rootkits can be used to hide the activity of malicious software. Describe how a rootkit is able to hide from the operating system. (20 marks)