

Roll No.

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COER University**END SEMESTER EXAMINATION, EVEN SEM 2022-23**

Time : 3 hours
Program Name : MCA
Course Name : Network and Cyber Security

Total Marks : 100
Semester : IV
Course Code : SOC654

Note: All questions are compulsory. No student is allowed to leave the examination hall before the completion of the time.

| Q. No 1 | Attempt Any Four Parts. Each Question Carries 5 Marks. | CO | BL |
|---------|---|-----|----|
| (a) | Analyze is the meaning of threat, vulnerability, and risk? | CO1 | 3 |
| (b) | Analyze are the different types of network security tools? | CO1 | 5 |
| (c) | Explain the role of physical protections and computational redundancies in availability property of information security. | CO1 | 5 |
| (d) | Write the steps to establish an SSH connection between a client and server. | CO1 | 4 |
| (e) | Explain two-factor authentication, and how can it enhance web security? | CO1 | 5 |

| Q. No 2 | Attempt Any Four Parts. Each Question Carries 5 Marks. | CO | BL |
|---------|--|-----|----|
| (a) | Discuss the following security principles of a security architecture: fail-safe defaults; and open design. | CO2 | 3 |
| (b) | Explain the terms "botnets" and "bot herder". | CO2 | 5 |
| (c) | Describe the element of security architecture. | CO2 | 3 |
| (d) | Define behavioral-based malware detection with suitable example. | CO2 | 1 |
| (e) | Write a short note on reputation-based security. | CO2 | 2 |

| Q. No 3 | Attempt Any Four Parts. Each Question Carries 5 Marks. | CO | BL |
|---------|--|-----|----|
| (a) | Discuss the Role-Based Access Control (RBAC) and role-hierarchies with suitable example. | CO3 | 3 |
| (b) | Write a short note on Document Object Model (DOM) with suitable example. | CO3 | 3 |
| (c) | Differentiate between the web security characteristics provided by the HTTP and HTTPS protocols. | CO3 | 4 |
| (d) | How can network segmentation be used to enhance operating system security? | CO3 | 3 |
| (e) | Describe the role of sandboxing in operating system security? | CO3 | 4 |

| Q. No 4 | Attempt Any Two Parts. Each Question Carries 10 Marks. | CO | BL |
|---------|--|-----|----|
| (a) | Describe denial of service (DoS) attack, and how does it work to disrupt network services? | CO4 | 3 |
| (b) | Explain the working of firewalls and their work to prevent unauthorized access to network resources. | CO4 | 2 |
| (c) | Differentiate between host-based IDS (Intrusion Detection System) and network-based IDS with suitable example. Discuss the advantages and disadvantages of these IDSs. | CO4 | 5 |

| Q. No 5 | Attempt Any Two Parts. Each Question Carries 10 Marks. | CO | BL |
|---------|--|-----|----|
| (a) | Describe how weak passwords and authentication mechanisms lead to internet security breaches? | CO5 | 3 |
| (b) | Your boss just bought a new malware-detection software program from the ABC Security company for his home computer for \$1,000. He says that it was worth the cost, because it says right on the box that this program will "detect all computer viruses, both now and in the future, without any need for updates of virus descriptions." What would be your advice to your boss regarding this product in terms of security? | CO5 | 1 |
| (c) | How can organizations assess and manage third-party risks in network security. | CO5 | 2 |

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