

M.C.A. - II (Two Year Programme) (New CBCS Pattern) Semester-III  
**PMCAT302 - Paper-II : Digital Cyber Security**

P. Pages : 2

Time : Three Hours



**GUG/W/24/13648**

Max. Marks : 80

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- Notes :
1. All questions are compulsory and carry equal marks.
  2. Draw neat and labeled diagram and use supporting data wherever necessary.
  3. Avoid vague answers and write specific answers related to questions.

**Either:**

1. a) Why is adopting security policies and strategies crucial for a secure network? Explain in detail. 8
- b) What are the major security threats and their impact on internet security. 8

**OR**

- c) Describe different types of attacks, including protocol failures and information leakage. 8
- d) Explain denial-of-service attacks and botnets in internet security. 8

**Either:**

2. a) Explain the terms viruses, trojans, worms and bombs. Explain how can we protect our system. 8
- b) Explain the types of firewalls like packet filters and circuit level gateways. 8

**OR**

- c) What are rule sets and proxies in Firewall engineering? Explain in detail. 8
- d) Discuss various firewall problems and methods of testing them. 8

**Either:**

3. a) Explain how do passwords, smart cards and biometrics ensure authentication. 8
- b) What is SSH? Explain how does it secure terminal and file access. 8

**OR**

- c) How do syslog and network administration tools helps to maintain network security. 8
- d) Explain how Apache Web server can be restricted using Chroot-Caging. 8

**Either:**

- |           |    |   |          |
|-----------|----|---|----------|
| <b>4.</b> | a) | Explain digital signatures, secure hash functions and timestamps in cryptography. | <b>8</b> |
|           | b) | Write a detail note on secret key cryptography.                                   | <b>8</b> |

**OR**

- |           |     |  |          |
|-----------|-----|--|----------|
|           | c)  | Explain following:   | <b>8</b> |
|           | i)  | Encryption and Decryption.   |          |
|           | ii) | Authentication and Authorization   |          |
|           | d)  | Explain about VPN threats and Exploits. Also explain personal and Network VPN. | <b>8</b> |
| <b>5.</b> |     | Solve all the questions.   |          |
|           | a)  | What is the purpose of a security plan (RFC 2196)? Explain in brief.           | <b>4</b> |
|           | b)  | Why are firewalls essential for network security? Discuss in short.            | <b>4</b> |
|           | c)  | Explain the role of SSL support with sslwrap.                                  | <b>4</b> |
|           | d)  | Give the difference between Layer 2 and layer 3 VPNs                           | <b>4</b> |

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