

## B4.5-R4: INTERNET TECHNOLOGY AND WEB SERVICES

### NOTE:

1. Answer question 1 and any FOUR from questions 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

**Time: 3 Hours**

**Total Marks: 100**

**1.**

- a) Write the structure of IPV4 packet header and explain each component of it.
- b) What is HTTPS protocol and write merits of it over HTTP protocol. Explain how HTTPS works.
- c) Write merits and limitations of Client/Server architecture.
- d) What is cross-site-scripting? Explain how it will be detected and suggest protective measures.
- e) What is multicast routing protocol? How it works for mobile ad-hoc networks.
- f) Explain in brief on 'open source technologies in security perspective'.
- g) What is SQL injection attack? How it will be prevented.

**(7x4)**

**2.**

- a) Write the structure of IPV6 packet header and explain each component of it.
- b) What is CGI (Common Gateway Interface)? How is it different from an HTML document? Name some languages in which CGI script can be written. Which is the most popular language for CGI scripting?
- c) List and explain in brief on at least two (2) protocols each that are used at Application, Transport and Network layers of TCP/IP model.

**(6+6+6)**

**3.**

- a) Explain in brief how DNS works on internet.
- b) What is life cycle of JSP? Explain in brief on various phases of it.
- c) Differentiate between SNMP and SMTP protocol.

**(5+8+5)**

**4.**

- a) What is Simple Object Access Protocol (SOAP)? Explain how it works on HTTP, SMTP and TCP Protocols.
- b) What is Web Services Description Language (WSDL)? Explain on various objects of it.
- c) What is W3C Compliance of a Website?

**(9+6+3)**

**5.** Write short notes on the following:

- a) Multicast Routing
- b) Video streaming
- c) Voice over IP

**(3x6)**

**6.**

- a) What is a Web server? Write merits of Apache Server over other related servers.
- b) What is a Digital Signature? Explain how it helps to ensure Authentication, Integrity and Non-Repudiation.
- c) What is a Proxy server? Explain in detail on various functions of it in a computer network.

**(6+6+6)**

**7.**

- a) Define the terms Vulnerability, Threat and Attack in a computer security perspective.
- b) Write and explain various security issues on Internet.
- c) What is Denial of Service (DoS) attack? Explain how DoS attack can be perpetrated. Write various preventive measures to protect DoS attack.

**(3+6+9)**