### 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) Explain IPV6 packet header format with an example.
   b) Explain in brief on the 3-Tier Web Architecture.
   c) Explain the ‘Request object’ and ‘Response object’ in ASP with one example each.
   d) Explain in brief on structure of Perl programming language.
   e) Explain in brief on Web Service Protocol Stack.
   f) Write different procedures to connect MySQL database connectivity with PHP scripting as front-end in a Web-based development environment. Explain with an example.
   g) Explain ‘SQL Injection Attack’ with an example

   \[(7x4)\]

2. 
   a) Explain TCP/IP Protocol Stack and mapping with layers of OSI reference model.
   b) How HTTPS protocol works to ensure secure communication? Compare the same with HTTP communication.

   \[(9+9)\]

3. 
   a) What is the role of a Web Server Gateway Interface?
   b) Differentiate between IIS and Apache Web servers?
   c) What is XML? Explain in details on XML Schemas along with validation.

   \[(3+6+9)\]

4. 
   a) Explain on Client-side scripting and Server-side scripting with request to a small Web-application.
   b) What is ActiveX control and how it works? Explain with an example.

   \[(9+9)\]

5. 
   a) Write and explain the Objects of Web Services Description Language (WSDL).
   b) What is Voice over IP? Explain how quality of service ensured?

   \[(9+9)\]

6. 
   a) Explain in details on Virtual reality.
   b) What do you understand about LAMP and WAMP Technologies that are being used in a Web application development? Write merits and limitations of both Technologies.

   \[(9+9)\]

7. 
   Explain the following vulnerabilities that occur in a Web-based Application Development. Explain the same on how to gate such vulnerabilities?
   a) Un-validated Input
   b) Broken Account and Session Management
   c) Cross-Site Scripting (XSS) Flaws
   d) Buffer Overflows
   e) Injection Flaws
   f) Denial of service

   \[(18)\]