

## M2-R4: INTERNET TECHNOLOGY AND WEB DESIGN

### NOTE:

1. There are **TWO PARTS** in this Module/Paper. **PART ONE** contains **FOUR** questions and **PART TWO** contains **FIVE** questions.
2. **PART ONE** is to be answered in the **TEAR-OFF ANSWER SHEET** only, attached to the question paper, as per the instructions contained therein. **PART ONE** is **NOT** to be answered in the answer book.
3. Maximum time allotted for **PART ONE** is **ONE HOUR**. Answer book for **PART TWO** will be supplied at the table when the answer sheet for **PART ONE** is returned. However, candidates, who complete **PART ONE** earlier than one hour, can collect the answer book for **PART TWO** immediately after handing over the answer sheet for **PART ONE**.

**TOTAL TIME: 3 HOURS**

**TOTAL MARKS: 100**  
**(PART ONE – 40; PART TWO – 60)**

### **PART ONE** **(Answer all the questions)**

1. **Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the “tear-off” answer sheet attached to the question paper, following instructions therein. (1x10)**
  - 1.1. The main function of a browser is to
    - A) compile HTML
    - B) interpret HTML
    - C) de-compile HTML
    - D) interpret CGI programs
  - 1.2. Spider is a \_\_\_\_\_
    - A) a program that crawls around the web and stores pages in search engines.
    - B) hacking software that spreads virally
    - C) software that examines network vulnerabilities
    - D) a protocol for distributing large files
  - 1.3. FTP does not use
    - A) two transfer mode
    - B) control connection to remote computer before file can be transferred
    - C) User Datagram Protocol (UDP)
    - D) authorization of a user through login and password verification
  - 1.4. \_\_\_\_\_ is used to enable the use of active documents
    - A) HTML
    - B) CGI
    - C) JAVA
    - D) All the above

- 1.5. In <IMG SRC="C:PICTURE/BB1.gif" ALIGN=middle> ALIGN is
- A) A tag
  - B) The head
  - C) The body
  - D) An attribute
- 1.6. Web pages are uniquely defined using
- A) IP addresses
  - B) URL
  - C) Domain
  - D) File name
- 1.7. Which of the following services are available on the World Wide Web?
- i) Encryption
  - ii) HTTP
  - iii) HTML
  - iv) Firewalls
- A) i) and ii)
  - B) ii) and iii)
  - C) iii) and iv)
  - D) i) and iv)
- 1.8. Internet uses
- A) packet switching
  - B) circuit switching
  - C) telephone switching
  - D) telex switching
- 1.9. The ownership rights as related to content on the web are governed under
- A) Copyright law
  - B) Patent law
  - C) Data protection law
  - D) Privacy law
- 1.10. Multipurpose Internet Mail Extension (MIME) was developed
- A) to support email messages containing text and video
  - B) to support email messages containing text, audio and video
  - C) to support email messages containing audio and video
  - D) to support text-based email messages

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and ENTER in the “tear-off” sheet attached to the question paper, following instructions therein. (1x10)

- 2.1 TCP provides packet-level reliability.
- 2.2 Subnet mask allows flexible division of address bits into a network address part and a host address part.
- 2.3 The Internet is managed and controlled by the US Government.
- 2.4 There are upto six levels of header tag in HTML.
- 2.5 Client sends the request in the form of URLs to the server.
- 2.6 A single hypertext document can contain link to one document on the World Wide Web.
- 2.7 IP only allows fixed packet sizes.
- 2.8 DNS is a distributed database offering strong consistency and atomicity guarantees.
- 2.9 HTTP uses TCP and DNS uses UDP.
- 2.10 Connectivity is equivalent to a point-to-point physical link.

3. Match words and phrases in column X with the closest related meaning/ word(s)/phrase(s) in column Y. Enter your selection in the “tear-off” answer sheet attached to the question paper, following instructions therein. (1x10)

X		Y	
3.1	A technique in which two different keys are used for performing encryption and decryption	A.	Public key infrastructure
3.2	The Internet transfer protocol means that you are working through a secure web connection	B.	FTP
3.3	Every web document must begin and end with	C.	</HTML?> and <HTML>
3.4	The path up to destination is allocated before the transmission of message begins	D.	TCP
3.5	Control Gateways in a computer by enabling selected connections from external network and disabling selected connection to external networks	E.	Firewalls
3.6	It allows user to dial into the Internet	F.	https
3.7	It is a process that along with providing an interface to the user, sends messages into a socket	G.	<HTML> and </HTML>
3.8	Connectionless protocol	H.	Ping
3.9	It is a cell relay protocol that in combination with SONET, allows high-speed connections	I.	PPP
3.10	It is an application program that uses the services of ICMP to test the reachability of a host	J.	UDP
		K.	ATM
		L.	POP3
		M.	http
		N.	Web browser

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Enter your choice in the “tear-off” answer sheet attached to the question paper, following instructions therein. (1x10)

<b>A.</b>	Client-Server	<b>B.</b>	Telnet	<b>C.</b>	Internet Protocol
<b>D.</b>	Browser	<b>E.</b>	IMAP4	<b>F.</b>	Active
<b>G.</b>	Common Gateway Interface	<b>H.</b>	Net id	<b>I.</b>	FTP
<b>J.</b>	Host id	<b>K.</b>	Decryption	<b>L.</b>	EMAIL
<b>M.</b>	SMTP				

- 4.1 \_\_\_\_\_ transforms an intentionally unintelligible message (ciphertext) into meaningful information.
- 4.2 \_\_\_\_\_ document is a copy of a program retrieved by the client and executed at the client site.
- 4.3 Multipurpose Internet Mail Extension (MIME) is an extension of \_\_\_\_\_ that allows the transfer of multimedia and other non-ASCII messages.
- 4.4 POP3 and \_\_\_\_\_ are protocols used by a mail server in conjunction with SMTP to receive and hold email for hosts.
- 4.5 Domain Name System (DNS) is a \_\_\_\_\_ application that identifies each host on the Internet with a unique user-friendly name.
- 4.6 In remote login, \_\_\_\_\_ is used to access distant service.
- 4.7 IPv6 is the latest version of the \_\_\_\_\_ which has a 128-bit address space, a resource allocation, and increased security measures.
- 4.8 The \_\_\_\_\_ is a standard for creating and handling dynamic Web documents.
- 4.9 Java is a combination of a high-level programming language, a run-time environment, and a class library that allows a programmer to write an active document and a \_\_\_\_\_ to run it.
- 4.10 The portion of the IP address that identifies the network is called the \_\_\_\_\_.

**PART TWO**  
(Answer any **FOUR** questions)

- 5.**
- a) What are the different classes of addresses used in IPv4? List their ranges in dotted decimal notation.
  - b) Communication services may be classified as connection oriented or connection less. Briefly summarize the principle differences between these two service classes.
  - c) List out the relative advantages and disadvantages of asynchronous and synchronous modes of data transmission.

**(5+5+5)**

- 6.**
- a) What is meant by IP spoofing? How can a router be used to prevent IP spoofing?
  - b) What is the difference between authorization and authentication? Comparing a LAN-based user inside a company to a corporate employee working via the Internet from home, what other security step does the home user typically have to go through?
  - c) What is a web server? How does it function?

**(5+5+5)**

- 7.**
- a) Describe the difference and similarities between URL and an email address.
  - b) What are web publishing tools? Discuss any one of them.
  - c) Explain, how graphic images are embedded in a webpage.

**(5+5+5)**

- 8.**
- a) What is JavaScript code used in an HTML document? Explain briefly the basic design rules for web page designing.
  - b) Write short notes on
    - i) SGML
    - ii) Meta Search Engine
  - c) Distinguish the following:
    - i) Dynamic websites versus Static websites
    - ii) URL versus IP address

**(5+5+5)**

- 9.**
- a) Write HTML code using the title attribute to show the spelled out-version of HTTP and WWW when holding the mouse pointer over the acronym HTTP and WWW.
  - b) Explain the File menu and Communicator menu of Netscape Navigator.
  - c) Write HTML code fragments to achieve the following text layout:

**This is a paragraph left aligned**

**This is a paragraph center aligned**

**This is a paragraph right aligned**

**(5+5+5)**