

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 **OMR ANSWER SHEET** only, supplied with 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 “OMR” answer sheet supplied with the question paper, following instructions therein. (1x10)**
 - 1.1 _____ are networks that connect people within a company to each other and to the company network.
 - A) Extranets
 - B) Internets
 - C) Bitstreams
 - D) Intranets
 - 1.2 The internet model or TCP/IP reference model specifically applies to internet worked systems, and has 4 layers. The movement of data packets across a network would be managed by which layer?
 - A) The link layer
 - B) The (inter) network layer
 - C) The transport layer
 - D) The application layer
 - 1.3 Which is NOT a good Web security strategy?
 - A) Restrict access to the Web server; keep a minimum number of ports open
 - B) Limit the users who can load software, edit or add files.
 - C) Add demo programs, so users can test system without accessing production data.
 - D) Remove unnecessary compilers and interpreters.
 - 1.4 A passive threat to computer security is
 - A) Malicious Intent
 - B) Sabotage
 - C) Accident Errors
 - D) Espionage Agents
 - 1.5 _____ are used to identify a user who returns to a Website.
 - A) Cookies
 - B) Plug-ins
 - C) Scripts
 - D) ASPs

- 1.6 E-mail message can be protected by
A) Mirroring
B) Caching
C) Encryption
D) Resending
- 1.7 Multipurpose Internet Mail Extension (MIME) was developed
A) to support email messages containing text, audio and video
B) to support FTP clients
C) to support telnet between two machines
D) to support text-based email messages only
- 1.8 The tag used in HTML to link it with other URL's is:
A) <H>
B) <A>
C) <U>
D) <L>
- 1.9 HTTP stands for
A) Hyper Text Transfer Protocol
B) Hyper Tetra Transfer Protocol
C) Heavy Text Transfer Protocol
D) Huge Text Transfer Protocol
- 1.10 A reliable stream service in TCP is described as two-way transmission, free of transmission _____, with no lost or duplicate _____, and the bytes are delivered in the same _____ in which they were transmitted.
A) errors; bytes; manner
B) failure; packets; sequence
C) errors; activity; manner
D) errors; bytes; sequence

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and ENTER in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

- 2.1 The core of Fiber Optic Cable is made of highly refined cylindrical glass.
- 2.2 Wi-Fi can be used for connecting two machines without any cable.
- 2.3 A socket address comprises the IP address of the host and a port number.
- 2.4 TCP is reliable and segments include a checksum field in the header. UDP is unreliable and therefore has no checksum in its header.
- 2.5 ARP is used to find the appropriate IP address, given a MAC address.
- 2.6 The Domain Name System (DNS) is primarily used to determine the symbolic name of a host, given its IP address.
- 2.7 A Gigabyte contains 1000 Megabytes.
- 2.8 JavaScript embeds a script within an HTML page. When the HTML interpreter reaches the script it invokes an interpreter which executes it.
- 2.9 IPv6 address mappings require a AAAA DNS record.
- 2.10 The network address is usually encoded as a prefix of the IP address.

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 “OMR” answer sheet supplied with the question paper, following instructions therein. (1x10)

X		Y	
3.1	IP packet is encapsulated within a new IP packet.	A.	TCP
3.2	Transfer of electronic mail.	B.	UDP
3.3	The network protocol that breaks messages into packets, reassembles the packets at the destination, and takes care of errors.	C.	List
3.4	Speed of printer is measured in	D.	SMTP
3.5	A script used to display a non-text based object at a specified location within a page.	E.	IP
3.6	Protocol used to fetch e-mail from a remote mailbox	F.	Tunnel mode
3.7	A protocol provides routing and error reporting functions in addition to forwarding, fragmentation/re-assembly and address resolution	G.	FTP
3.8	Used to send/receive files between two computers	H.	MIME
3.9	An alternative to TCP that achieves higher transmission speeds.	I.	Non-persistent
3.10	Format of email attachments.	J.	Image
		K.	ppm
		L.	TELNET
		M.	POP3

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 “OMR” answer sheet supplied with the question paper, following instructions therein. (1x10)

A.	Oracle	B.	FTP	C.	TELNET
D.	Browser	E.	Digital Signature	F.	Data transfer
G.	Active	H.	Web	I.	IPv4
J.	HTTP	K.	PING	L.	Dynamic
M.	Hash functions				

- 4.1 MACs are keyed _____ that create a compressed digest from the message added with the key.
- 4.2 An _____ document is a copy of a program retrieved by the client and run at the client site.
- 4.3 _____ is the main protocol used to access data on the World Wide Web.
- 4.4 _____ consists of a controller, client programs, and interpreters.
- 4.5 _____ allows negotiation to set transfer conditions between the client and server before and during the use of the service.
- 4.6 _____ is for authenticating a document in Electronic Universe.
- 4.7 A TCP connection normally consists of three phases: connection establishment, _____, and connection termination.
- 4.8 The address resolution protocol (ARP) is a _____ mapping method that finds a physical address, given a logical address.
- 4.9 _____ is an application program that uses the services of ICMP to test the reachability of a host.
- 4.10 _____ is a Relational Database

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

- 5.
- a) Distinguish between the Internet backbone and an Internet service provider (ISP). Name at least two national ISP.
 - b) What is a domain name? How does the current domain name system try to resolve a hostname?
 - c) What is a firewall, what does it accomplish, and how does it accomplish it?
 - d) What is an IP address, and how is it composed? Discuss the relationship between a hostname and an IP address? How many hosts are possible in Class C networks, in Class B networks, and in Class A networks?

(4+3+3+5)

- 6.
- a) What is called POP3? How does it differ from POP and discuss its applications.
 - b) Differentiate between HTTP and SMTP.
 - c) What do you understand by Web Server? Discuss its functionality in detail.

(5+5+5)

7. Develop HTML code for the following:
- i) How do I add MIDI music to my web page?
 - ii) How do I make a picture as a background on my web pages?
 - iii) How do I make it so that someone can mail me by just clicking on text?
 - iv) How do I add floating text to my page?
 - v) How to add multiple colour text to a webpage?
 - vi) How to make a hyperlink on a picture?
 - vii) How can I make my link not have this ugly border?
 - viii) How to align pictures on a webpage?
 - ix) How to make a link to another webpage?
 - x) How to create links to sections on the same page in HTML?
 - xi) Opening new web page window when clicking on a link.
 - xii) Creating a new window in HTML for a single image.
 - xiii) How do I create multicolor links in HTML?
 - xiv) How to create a fixed background image on a web page?
 - xv) Creating a web page with a single background image not a tiled background.

(1X15)

- 8.
- a) Generate a JavaScript to generate 5000 random numbers.
 - b) Differentiate between:
 - i) Bus and Star Topologies.
 - ii) Telnet and FTP.
 - iii) Hub and Switch.

(3+[3x4])

9. Write short note on **any three** of the following:
- a) 'Gateway Of Last Resort' in router
 - b) Firewall
 - c) e-Commerce
 - d) Domain Name System
 - e) Malwares and its types

(3x5)