Enrollment No......................................

Faculty of Engineering / Science
End Sem Examination May-2024
CA5CO26 Computer Networks Fundamental

Programme: MCA / BCA-MCA (Integrated)

Branch/Specialisation: Computer Application

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1 i. The location of a resource on the internet is given by its _____. **1**
(a) Protocol   (b) URL
(c) Email Address   (d) ICQ

ii. Which one of the following is the most common internet protocol? **1**
(a) HTML   (b) NetBEU
(c) TCP/IP   (d) IPX/SPX

iii. The data link layer takes the packets from _____ and encapsulates them into frames for transmission. **1**
(a) Network layer   (b) Physical layer
(c) Transport layer   (d) Application layer

iv. CRC stands for _____. **1**
(a) Cyclic redundancy check
(b) Code repeat check
(c) Code redundancy check
(d) Cyclic repeat check

v. Ethernet frame consists of _____. **1**
(a) MAC address   (b) IP address
(c) Default mask   (d) Network address

vi. ATM uses _____. **1**
(a) Asynchronous frequency division multiplexing
(b) Asynchronous time division multiplexing
(c) Asynchronous space division multiplexing
(d) Asynchronous amplitude division multiplexing

vii. The term IPv4 stands for- **1**
    (a) Internet Protocol Version 4
    (b) Internet Programming Version 4
    (c) International Programming Version 4
    (d) None of these

viii. In specific, if the systems use separate protocols, which one of the following devices is used to link two systems? **1**
    (a) Repeater
    (b) Gateway
    (c) Bridge
    (d) Hub

ix. Beyond IP, UDP provides additional services such as _____. **1**
    (a) Routing and switching
    (b) Sending and receiving of packets
    (c) Multiplexing and demultiplexing
    (d) Demultiplexing and error checking

x. When displaying a web page, the application layer uses the _____. **1**
    (a) HTTP protocol
    (b) FTP protocol
    (c) SMTP protocol
    (d) TCP protocol

Q.2   i.   Explain physical layer in brief. **2**
      ii.   Explain OSI reference model. **3**
      iii.   What is topology? Discuss key topologies used to form a network. **5**
OR   iv.   Differentiate between circuit switching and packet switching. **5**

Q.3   i.   Explain different types of errors. **2**
      ii.   Discuss the sliding window protocol and its merits. **8**
OR   iii.   What is ALOHA? Explain and differentiate between pure ALOHA and slotted ALOHA. What is vulnerable time in pure ALOHA? **8**

Q.4   i.   Explain briefly about IEEE LAN Standards. **3**
      ii.   Differentiate between Fast Ethernet, Gigabit Ehernet and 10 Gigabit Ethernet. **7**
OR   iii.   Explain ATM Network its architecture and layers. **7**

Q.5   i.   Explain the functions of network layer. **4**
      ii.   Describe shortest path algorithm. **6**
OR   iii.   What do you mean by URL and Internet Address? How is URL mapped into a internet address during web access? **6**

Q.6   Attempt any two:
      i.   What is UDP? How it is different from TCP? **5**
      ii.   What is Token bucket algorithm? Where it is used? **5**
      iii.   Write short notes on- **5**
         (a) Electronic mail   (b) World wide web

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Scheme of Marking

	Faculty of Engineering
![MEDI-CAPS UNIVERSITY Knowledge is Power]	End Sem Examination Aug-2023 CA5CO26-Computer Networks Fundamental
	Programme: MCA	Branch/Specialisation:

Note: The Paper Setter should provide the answer wise splitting of the marks in the scheme below.

Q.1	i.	The location of a resource on the internet is given by its? (a) Protocol **(b) URL** (c) Email Address (d) ICQ	1
	ii.	Which one of the following is the most common internet protocol? (a) HTML (b) NetBEU **(c) TCP/IP** (d) IPX/SPX	1
	iii.	The data link layer takes the packets from _____ and encapsulates them into frames for transmission. **(a) network layer** (b) physical layer (c) transport layer (d) application layer	1
	iv.	CRC stands for _____ **(a) cyclic redundancy check** (b) code repeat check (c) code redundancy check (d) cyclic repeat check	1
	v.	Ethernet frame consists of _____ **(a) MAC address** (b) IP address (c) Default mask (d) Network address	1
	vi.	ATM uses _____ (a) asynchronous frequency division multiplexing **(b) asynchronous time division multiplexing**	1

		(c) asynchronous space division multiplexing (d) asynchronous amplitude division multiplexing	
	vii.	The term IPv4 stands for? **(a) Internet Protocol Version 4** (b) Internet Programming Version 4 (c) International Programming Version 4 (d) None of these	1
	viii.	In specific, if the systems use separate protocols, which one of the following devices is used to link two systems? (a) Repeater **(b) Gateway** (c) Bridge (d) Hub	1
	ix.	Beyond IP, UDP provides additional services such as _____ (a) Routing and switching (b) Sending and receiving of packets (c) Multiplexing and demultiplexing **(d) Demultiplexing and error checking**	1
	x.	When displaying a web page, the application layer uses the _____ **(a) HTTP protocol** (b) FTP protocol (c) SMTP protocol (d) TCP	1
Q.2	i.	Explain physical layer in brief.	2
	ii.	Explain OSI reference model.	3
	iii.	What is topology? Discuss key topologies used to form a network.	5
OR	iv.	Differentiate between Circuit Switching and Packet Switching	5
Q.3	i.	Explain different types of errors.	2
	ii.	Discuss the Sliding Window Protocol and its merits.	8
OR	iii.	What is ALOHA? Explain and differentiate between pure ALOHA and slotted ALOHA? What is vulnerable time in pure ALOHA.	8
Q.4	i.	Explain briefly about IEEE LAN Standards.	3
	ii.	Differentiate between Fast Ethernet, Gigabit Ehernet and 10 Gigabit Ethernet.	7
OR	iii.	Explain ATM Network its architecture and layers.	7

Q.5	i.	Explain the functions of Network Layer.	4
	ii.	Describe Shortest path algorithm?	6
OR	iii.	What do you mean by URL and Internet Address? How is URL mapped into a internet address during web access?	6
Q.6		Attempt any two:	
	i.	What is UDP? How it is different from TCP?	5
	ii.	What is Token bucket algorithm? Where it is used?	5
	iii.	Write short notes on a) Electronic mail World wide web	5

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Q.1 (i) b

(ii) c

(iii) a

(iv) a

(v) a

(vi) b

(vii) a

(viii) b

(ix) d

(x) a

Q.2 (i) Two function each for one Marks.

(ii) Diagram - 1, Explaination 7 Layer - 2 Marks

(iii) Topology Defination - 1 Marks Types ——— 4 Marks.

(iv) Diagram - 2 Marks Difference 3 Marks

Q.3 (i) Error One for each Marks ——— ②
Single & burst

(ii) Sliding window ⟨ GobackNARQ 3 Marks
Selective Repeat ARQ 3 Marks
Merits ——— 2 Marks

(iii) ALOHA Defination ——— ② Marks
five Difference each for ⑤ Marks
Vulnerable time ① Marks

Q.4 (i) Explaination IEEE LAN ——— ③ Marks

(ii) five Difference ——— ⑦ Marks

(iii) ATM N/w Explaination — 3 Marks
Architecture — 2 Marks
Layer ——— 2 Marks

Q.5 (i) N/w Layer function four function one for each Marks ——— ④

(ii) Shortest path ⟨ DV Routing — ③ Marks
Link state — ③ Marks

(iii) URL ——— 2 Marks
Internet Address 2 Marks
URL Mapped into internet Address — 2 Marks

Q.6 (i) UDP Defination ——— 2 Marks
different with TCP — 3 Marks

(ii) Diagram ——— 2 Marks
Token bucket explaination — 3 Marks

(iii) (i) Electronic mail ——— 2½ Marks

(ii) WWW ——— 2½ Marks

c