GURU NANAK INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT
2022-2023
COMPUTER COMMUNICATION AND NETWORKING
MCE102

TIME ALLOTTED: 3Hours **FULL MARKS:70**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP – A
(Multiple Choice Type Questions)

Answer any ***ten*** from the following, choosing the correct alternative of each question: **10×1=10**

		Marks	CO No
1. i)	The network layer in OSI model is concerned with _____ of data. a) Bits b) Frames c) Packets d) Bytes	1	CO1
ii)	A 4 byte IP address consists of _____ a) only network address b) only host address c) network address & host address d) network address & MAC address	1	CO1
iii)	In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are _____ a) Added b) Removed c) Rearranged d) Modified	1	CO2
iv)	Which of this is not a network edge device? a) PC b) Smartphones c) Servers d) Switch	1	CO3
v)	Which of the following tasks is not done by data link layer? a) Framing b) error control c) flow control d) channel coding	1	CO2

vi) Automatic repeat request error management mechanism is provided by _____ 1 CO2
a) logical link control sublayer
b) media access control sublayer
c) network interface control sublayer
d) application access control sublayer

vii) Size of TCP segment header ranges between _____ 1 CO1
a) 16 and 32 bytes
b) 16 and 32 bits
c) 20 and 60 bytes
d) 20 and 60 bits

viii) A false positive can be defined as _____ 1 CO3
a) An alert that indicates nefarious activity on a system that, upon further inspection, turns out to represent legitimate network traffic or behaviour
b) An alert that indicates nefarious activity on a system that is not running on the network
c) The lack of an alert for nefarious activity
d) Both An alert that indicates nefarious activity on a system that, upon further inspection, turns out to represent legitimate network traffic or behavior and An alert that indicates nefarious activity on a system that is not running on the network

ix) Find the class of address 14.23.120.8 1 CO3
a) A
b) B
c) C
d) D

x) Which is not a application layer protocol? 1 CO2
a) HTTP
b) SMTP
c) FTP
d) TCP

xi) Pick the odd one out 1 CO3
a) File transfer
b) File download
c) E-mail
d) Interactive games

xii) The structure or format of data is called _____ 1 CO3
a) Syntax
b) Semantics
c) Struct
d) Formatting

GROUP – B
(Short Answer Type Questions)
(Answer any *three* of the following) **3 x 5 = 15**

		Marks	CO No
2.	Evaluate the role of digital signature in computer communication security.	5	CO3
3. a)	What is the relevance of multiplexing in a computer network?	2	CO2
b)	Compare between TDM-FDM and WDM with proper diagram.	3	CO1
4.	Explain the different classes of IP addresses. Identify the class of the following IP addresses and give their default subnet masks: i) 227.56.83.0 ii) 114.22.43.21 iii)129.14.12.1	5	CO2
5. a)	What is a repeater? How is a repeater different from an amplifier?	3	CO3
b)	What is the number of bits in an IPV6 addresses and IPV4 address?	2	CO3
6.	What is a mask in IPV4 addressing? Describe with example.	5	CO3

GROUP – C
(Long Answer Type Questions)
Answer any ***three*** from the following: **3×15=45**

		Marks	CO No
7. a)	What is Flow-Control in networking?	5	CO2
b)	What is the basic difference between private key and public key?	5	CO2
c)	Analyze the various TCP/IP utilities.	5	CO1
8. a)	Explain the DES algorithm m with diagram.	8	CO2
b)	Analyse the role of a repeater.	7	CO1
9. a)	What are the different transmission modes? Explain	7	CO1
b)	Explain TCP/IP model with a diagram.	8	CO1
10. a)	Find the error in following addressing: i) 111.56.045.78 ii) 221.34.7.8.20 iii) 75.45.301.14	5	CO2
b)	A block address is granted to a small organization. We know that one of the addresses is 205.16.37.39/28. What is the first address in the block?	10	CO2
11.	Write short notes on any *three* of the followings:	3x5=15	
a)	Routers	5	CO3
b)	RSA Algorithm	5	CO2
c)	Selective repeat ARQ	5	CO3
d)	DNS Messages	5	CO3
e)	Dijkstra algorithm	5	CO2