

PRN No.	
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PAPER CODE	V314-233 (ESE)
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**(AY:2024-25) December 2024 (ENDSEM) EXAM**  
**TY (SEMESTER - I)**

**COURSE NAME: COMPUTER NETWORKS -I**      **Branch: COMPUTER ENGINEERING**      **COURSE CODE: CSUA31203**

**(T.Y PATTERN 2020)**

**Time: [1Hr 30 Min]**

**[Max. Marks: 40]**

Instructions to candidates:

- 1) Figures to the right indicate full marks. Use of scientific calculator is allowed.
- 2) Use suitable data wherever required.
- 3) All questions are compulsory. Solve any two sub question each from Questions 1 and 2.
- 4) Solve any one sub question (2 marks) from Questions 3 ,4 ,5 and 6 and sub question of 4 marks is compulsory from questions 3,4,5,and 6.

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Compare the packet-switched network and circuit-switched network.	[4]	[CO1]	Understand
	b) Describe fiber optic cabling and its main advantages over other media.	[4]	[CO1]	Understand
	c) Discuss the working of Intranet. Differentiate between PAN, LAN, and MAN.	[4]	[CO1]	Understand
Q.2	a) Examine the process of rule establishment during communication. How rules or protocols ensure the message to be successfully delivered and understood at destination.	[4]	[CO2]	Analyze
	b) Differentiate between Port Addresses and Specific Addresses. Write the importance of Port Addresses and Specific Addresses in the communication.	[4]	[CO2]	Analyze
	c) Differentiate between Transport Layer and Network Layer of the OSI model.	[4]	[CO2]	Analyze
Q.3	a) For the given IP address 135.1.0.0 of class B. 4 subnets need to create. Find: How many bits need to borrow from host portion to network portion? What is the IP address of 3 <sup>rd</sup> host on subnet 2?	[2]	[CO3]	Apply
	<b>OR</b>			
	b) To subnet the Class C IP Address 205.11.2.0 so that you have 30 subnets. Find: How many bits need to borrow from host portion to network portion? What is the IP address of 3 <sup>rd</sup> host on subnet 2?	[2]	[CO3]	Apply
	c) Subnet the Class C IP Address 195.1.1.0 So that you have 10 subnets each with a maximum 12 hosts on each subnet. List the IP address of 1 <sup>st</sup> host on each subnet 0,1,2,3,10.	[4]	[CO3]	Apply

Q.4	a) If a user 1 sends an email to user 2 then which application layer protocols will work in sequence? <b>OR</b>	[2]	[CO4]	Evaluate
	b) Justify why TCP is known as slow protocol.	[2]	[CO4]	Evaluate
	c) Justify the use of TCP for email application and use of UDP for Video Conferencing.	[4]	[CO4]	Evaluate
Q.5	a) Examine the steps involved in the working of SHA algorithm. <b>OR</b>	[2]	[CO5]	Analyze
	b) Examine the integrity checks and authentications algorithms.	[2]	[CO5]	Analyze
	c) Relate the various steps followed in creating digital signature.	[4]	[CO5]	Analyze
Q.6	a) Analyze which hash functions are the best for providing security? <b>OR</b>	[2]	[CO6]	Analyze
	b) Examine the various network security attacks possible in vulnerable environment.	[2]	[CO6]	Analyze
	c) Person A and Person B agree on 7 as the modulus and 3 as the primitive root. Person A chooses 2 and person B chooses 5 as their respective secrets. Calculate the common secret key using the Diffie Hellman key exchange algorithm.	[4]	[CO6]	Analyze