Seat No.:		Q. Paper Code:FTC-A-008	SET	A

Fabtech Technical Campus, College of Engineering & Research, Sangola

(An Autonomous Institute)

Electronics and Telecommunication Engineering

Academic Year: -2025-26, Semester-I

Communication and Networking Technologies(25PET11172)

Regular End Semester Examination Winter 2025-26 [Dec./Jan]

Class:	F. Y. M. Tech.	**Day & Date:**	Saturday, 03/01/2026
Duration:	03 Hrs.	**Max. Marks:**	60 Marks
Time:	11.00 AM TO 2.00 PM		

Instructions:

1) All Questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat diagram wherever necessary.
4) Make suitable assumptions if necessary and state it clearly.
5) Use of non-programmable calculator is allowed.

Q. No.	Questions	Marks	CO	BL
Q. 1	**Attempt any two of the following**	**12**		
1	Describe the client–server communication model with two real-world examples.	**6**	1	BL2
2	Draw and explain the OSI reference model. How does it differ from the TCP/IP model?	**6**	1	BL2
3	Discuss the characteristics and applications of LAN, MAN, and WAN.	**6**	1	BL3
Q. 2	**Attempt any two of the following**	**12**		
1	Write short notes on IEEE 802.3, 802.5, 802.11, and 802.15 standards.	**6**	2	BL2
2	Discuss the principles of CSMA/CD and CSMA/CA access control methods.	**6**	2	BL3
3	Describe the error detection and control mechanisms used at the Data Link Layer.	**6**	2	BL3
Q. 3	**Attempt any two of the following**	**12**		
1	Define subnetting. Calculate the number of subnets and hosts for 192.168.10.0/27.	**6**	3	BL3
2	Compare IPv4 and IPv6 addressing schemes in detail.	**6**	3	BL4
3	Explain how HTTP works as a request-response protocol. Mention different HTTP methods.	**6**	3	BL3

Q. 4	**Attempt any two of the following**	**12**		
1	Explain plaintext, ciphertext, encryption, decryption, and key with examples.	**6**	4	BL2
2	Explain how RSA digital signatures provide authentication and non-repudiation.	**6**	4	BL4
3	Compare SSL/TLS and IPsec protocols based on operation layers, security mechanisms, and use cases.	**6**	4	BL4
Q. 5	**Attempt any two of the following**	**12**		
1	Compare wireless technologies based on performance parameters.	**6**	5	BL4
2	Differentiate between eMBB, URLLC, and mMTC services.	**6**	5	BL3
3	Explain NFV concepts and MANO orchestration.	**6**	5	BL4