GYANMANJARI INNOVATIVE UNIVERSITY

GYANMANJARI INSTITUTE OF TECHNOLOGY

B.Tech.-Mid Semester Examination (MSE)- S2026

Enrollment No.:_____

Subject Code: BETCE15406 **Date: 30-03-2026**

Subject Name: Quantum Cryptography **Semester: 6**

Time: 02:30 PM to 04:30 PM **Total Marks: 60**

Instructions:

1. **Question No. 1 is compulsory.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

			Marks
Q.1	**(a)**	What is quantum cryptography? What is the need of quantum cryptography? Differentiate classical cryptography and quantum cryptography.	05
	(b)	What is no cloning theorem? Explain it in detail.	05
	(c)	Explain basic gates. Also explain types of it.	10
Q.2	**(a)**	Can two classical bits simulate one qubit? Discuss.	05
	(b)	Differentiate BB84 and E91.	05
		OR	
	(b)	What is polarization? What are the practical challenges in QC.	05
	(c)	Working of quantum digital signature protocol.	10
		OR	
	(c)	Explain BB84 in details.	10
Q.3	**(a)**	Compare classical and quantum coin flipping.	05
	(b)	Security model of quantum secret sharing.	05
	(c)	Explain shor's algorithm with example.	10
		OR	
Q.3	**(a)**	Explain why copying classical info is easy but quantum info is not.	05
	(b)	Advantages of entanglement-based protocols.	05
	(c)	Explain Lattice based cryptography in details. Also write Key Characteristics of Lattices.	10