Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–IV EXAMINATION – SUMMER 2016

Subject Code:X40904 **Date:03/06/2016**

Subject Name:Theory of Electromagnetics

Time:10:30 AM TO 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain Spherical Co-ordinate system. Also explain transformation of vector from Spherical to Cartesian co-ordinate system.	**07**
	(b)	State and explain Ampere's circuit law.	**07**
Q.2	**(a)**	State and define Laplace Equation.	**07**
	(b)	Define Stoke's theorem with necessary equation.	**07**
		OR	
	(b)	State and explain Coulomb's law with necessary equation.	**07**
Q.3	**(a)**	Write in brief electrostatic precipitator.	**07**
	(b)	Explain in detail Magneto Hydro Dynamic Generator.	**07**
		OR	
Q.3	**(a)**	Write a short note on corona phenomenon.	**07**
	(b)	State and explain divergence theorem.	**07**
Q.4	**(a)**	Explain curl of vector with necessary equation.	**07**
	(b)	State and explain Lorentz's force equation.	**07**
		OR	
Q.4	**(a)**	Write Poisson's Equation with details.	**07**
	(b)	Explain in details Gauss's law.	**07**
Q.5	**(a)**	What is Magnetic Prospecting explain in details.	**07**
	(b)	Write short note on Magneto Hydro Dynamic generator.	**07**
		OR	
Q.5	**(a)**	State and explain Biot Savart's Law.	**07**
	(b)	Define Finite Elements method with necessary equation.	**07**

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