

T. Y. B. TECH. (E & TC) (SEMESTER -III)

COURSE NAME: Electromagnetic Engineering

COURSE CODE: ETUA31174

(PATTERN 2017)

Q.NO	Sub Q.NO	Marking Scheme	Marks	Difficulty Level	Cognitive level	CO Mapped
Q1	a)	Formula of Divergence = 1 mark $\nabla \cdot A = 3$ marks $\nabla \cdot A$ at $(2, \Phi, 5) = 2$ marks Soln. = 5	[6]	M	Knowledge / Application	CO1
	b)	Stoke's theorem = 1 mark LHS = 3 marks RHS = 2 marks Soln. = 6.44Wb (C)	[6]	M	Knowledge	CO1
	c)	Conversion to Cartesian = 2 marks Vector distance = 1 mark scalar value = 1 mark Soln. = 14.14 units	[4]	M	Knowledge / Application	CO1
Q2	a)	$\nabla \times B$ formula = 1 $\nabla \times B$ solving = 4 marks $\nabla \times B$ at $(2, \Phi, 5)$ 1 mark Soln. = $-2.5a_p - 0.34a_z$	[6]	M	Knowledge / Application	CO2
	b)	Divergence theorem = 1 mark LHS = 3 marks RHS = 2 marks Soln. = 129.4 units	[6]	M	Knowledge	CO2
	c)	Formula = 1 mark solving for correct answer = 3 marks Soln. = $A \cdot B = 0$	[4]	M	Knowledge / Application	CO2
Q3	a)	Distance = 1 mark Unit vector = 1 mark Formula = 1 mark Answer = 3 marks Soln. = $0.144a_x - 0.108a_z$ N	[6]	M	Application	CO3
	b)	Statement = 2 marks Explanation = 2 marks Soln. = Flux out = Charge enclosed	[4]	H	Comprehension	CO3
	c)	Derivation = 3 marks Formula = 1 mark Soln. $E = -\nabla V$	[6]	M	Comprehension	CO3

OCTOBER 2019/IN-SEM (T1)

Y. B. TECH. (E & TC) (SEMESTER -III) 9.7.

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Q4	a)	Derivation = 5 marks Formula = 1mark $\mathbf{E} = \rho_l / 2\pi\epsilon\rho \mathbf{a}_\rho$	[6]	M	Comprehension	CO4
	b)	Explanation =4 marks Soln. point charge, line charge, surface charge, volume charge	[4]	M	Comprehension	CO4
	c)	Formula = 1mark Answer = 3 marks Soln. = $-57.6\mathbf{a}_x + 43.2\mathbf{a}_y$ V/m	[4]	M	Application	CO4