Reg. No.:

Name :

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TERM END EXAMINATIONS (TEE) – December 2021- January 2022

Programme	:	**B.Tech (CSE) [BHI,BCE,BEC,BCY]**	**Semester**	:	**Fall 2021-22**
Course Name	:	**Electric Circuits and Systems**	**Course Code**	:	**EEE1001**
Faculty Name	:	**Dr. Praveen Shukla**	**Slot / Class No**	:	**F11+ F12+F13/0071**
Time	:	**1½ hours**	**Max. Marks**	:	**50**

Answer ALL the Questions

Q.No.		Question Description	Marks
		PART - A (30 Marks)	
1	(a)	For the circuit shown in the Fig.1 the thevenin equivalent voltage (in Volts) across terminals a-b is _____.	10

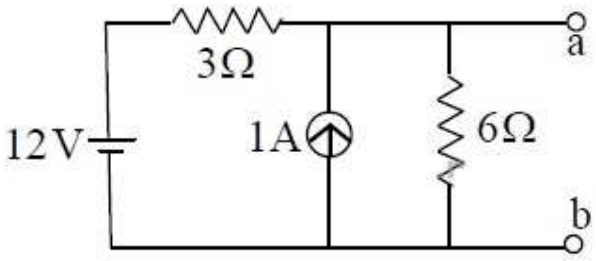

Fig.1

OR

	(b)	In circuit fig .2 shown, switch SW is closed at t = 0. Assuming zero initial conditions, the value of $V_c(t)$ (in volts) at t = 1 second is_____	10

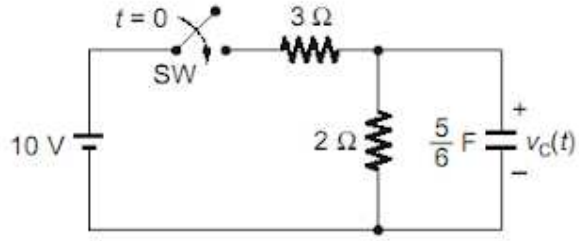

Fig.2

2	(a)	Write a working principal of D.C. motor. Derive the voltage, power and torque equation for D.C. Motor. What are the different types of Speed control D.C. Motor?	10
		OR	
	(b)	What is a zener diode? How is it different from a p–n junction diode?	10

3 (a) In BJT, the reverse saturation current of the collector base junction is 15 nA at low collector voltages. 10

I. If the current amplification factor is 0.98, then the collector current with emitter open is_____

II. In the above problem if the current amplification factor increases by 1%, then the changes in the collector current with base open is_____

OR

(b) In the 4×1 multiplexer Fig.3, the output of the multiplexer F is_____ 10

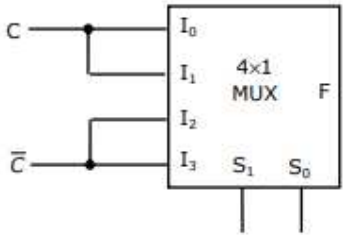

Fig. 3

PART - B (20 Marks)

4 Two inductors whose self-inductances are of 75mH and 55mH respectively are connected together in parallel aiding. Their mutual inductance is given as 22.5mH. Calculate the total inductance of the parallel combination. 10

5 Draw S-R FF using NAND gate, explain its operation 10

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