VIT®
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

Slot: A2

Fall Semester 2020-2021

Continuous Assessment Test –II

Programme Name & Branch: MIC & SCOPE **Class Number:** VL2020210105232

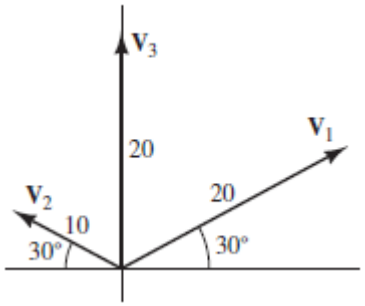
Course Code: EEE1024 **Course Title:** Fundamentals of Electrical and Electronics Engineering

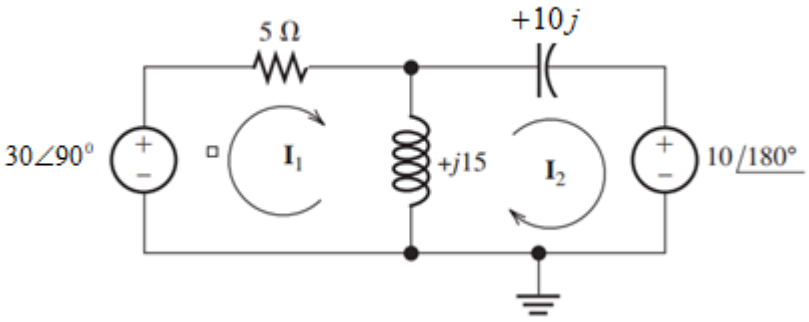
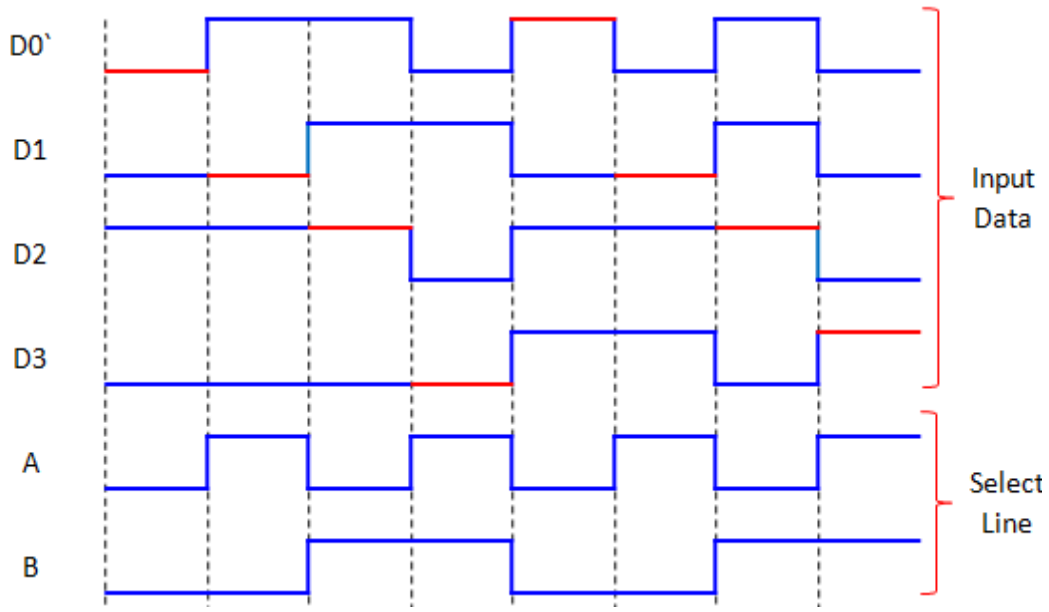
Exam Mode: Online **Exam Duration:** 45 mins **Maximum Marks:** 30

Faculty Name: Prof. Sanchit Khatavkar

General instruction(s):

Refer MS Forms and Teams

(Marks distribution 5 x 6 = 30 Marks)		
S. No.	**Question**	**Course Outcome (CO)**
1.	Prove the associative law for OR operation of 3 logical inputs A, B and C using truth tables. (Law statement – 2marks, Intermediate steps – 2marks, Final – 2marks)	CO_03
2.	Consider the phasors shown in the figure below. The frequency of each signal is f = 500Hz. a) Write a time domain expression for each voltage in the form $V_m \cos(\omega t + \theta^0)$ (3 marks) b) Reduce the sum $v_s(t) = v_1(t) + v_2(t)$ to a single term of the form $V_m \cos(\omega t + \theta^0)$ using phasors. (3 marks) 	CO_02
3.	Convert the following- (Each sub-question: 3 marks – 2 marks for working, Final - 1 mark) a) **412.65_{10}** to binary b) **$D93.8_{16}$** to binary	CO_03

4.	Find the mesh currents I_1 and I_2 in the circuit given below. (Mesh current equations – 3 marks, Final – 3marks) 	CO_02
5.	Explain briefly (in 1-2 sentences only) the relation between input lines and select lines in a multiplexer and write the types of multiplexers (3 marks) Draw the output waveform (Y) for the input data and select lines waveforms of a 4:1 multiplexer, given below. (Note: Draw only the waveform of output by looking at the inputs and select lines from the question paper) (3 marks) 	CO_03