

22BIT0018

SLOT: B1+TB1



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

SCHOOL OF ELECTRICAL ENGINEERING
CONTINUOUS ASSESSMENT TEST - II
WINTER SEMESTER 2022-2023 (Freshers)

Programme Name & Branch: BTech (Freshers), BIT

Course Code: BEEE102L

Course Name: Basic Electrical and Electronics Engineering

Faculty Name(s): Dr. Rani. C, Dr. R.Gnanavignesh, Dr. Mukul Chankaya

Emp.ID(s): 10304, 18893, 19722

Class Number(s): VL2022230500371, 0420, 0390

Exam Duration: 90 minutes

Maximum Marks: 50

General instruction(s):

Q.No	Question	Marks
1.	Consider a three-phase Star-Star connection of generation and load is given. The phase voltage of phase 'a' of the generator is given as, $V_{an} = 120 \angle 10^\circ$. The star-connected balanced load is $(8+4j)\Omega$ per phase. Calculate the phase and line voltages, and phase and line currents on both the generator and load sides. Assume the phase sequence as 'abc'.	10
2.	Implement the Full adder with minimum numbers of logic gates a) using NAND Gate b) using NOR Gate.	10
3.	a) Expand $A+BC'+ABD'$ to min terms and max terms (5 marks) b) Define Multiplexer, draw the truth table and circuit for 4:1 multiplexer. Make the circuit for a 16:1 multiplexer using a 4:1 multiplexer. (5 marks)	10
4.	a) Calculate the magnetomotive force (MMF), required to produce a flux of 0.015 Wb across an air gap 2.5 mm long, having an area of 200 cm^2 in a toroidal inductor. (6 marks) b) Find the equivalent inductive reactance of the circuit given in fig. 1. (4 marks)	10

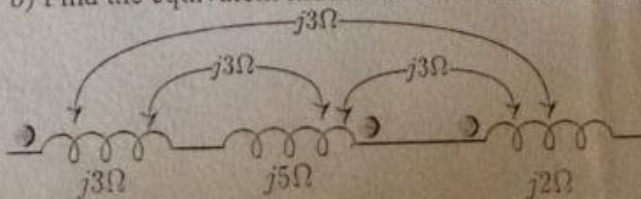


Fig. 1