



AUTUMN Special Mid EXAMINATION-22
School of Electrical Engineering
Kalinga Institute of Industrial Technology
1st Semester

Subject: BASIC ELECTRICAL ENGINEERING (EE10002) (Regular)

Time: 1.5 hours

Full Marks: 20

*Answer any **FOUR** questions including question No.1 which is compulsory.*

The figures in the right-hand side indicate full marks.

All parts of a question should be answered at one place only.

Question No	Question	CO Mapping	Marks
Q1.	Answer the following questions.		[1x5]
a	Distinguish between Bilateral element and Unilateral element	CO1	
b	Differentiate between an ideal current source and practical current source with suitable diagram.	CO1	
c	Two resistors of $2\ \Omega$ and $4\ \Omega$ are connected in parallel. If the total current is 6 A. Find the current through each resistor	CO1	
d	Write down the equation of instantaneous current having frequency 50 Hz and having an r.m.s value of 50A.	CO2	
e	Define the following terms (i) Form factor (ii) Peak factor	CO2	
Q.2	<p>Determine the resistance between A and B of the network given below by using delta to star transformation? All the resistances are given in ohm.</p>	CO1	[5]
Q.3	<p>(a) State and explain Superposition theorem</p> <p>(b) Illustrate the current flowing in the 8 ohm resistor by applying superposition theorem</p>	CO1	[5]
	P.T.O		

Q.4	An alternating current varying sinusoidally with a frequency of 50Hz has an R.M.S value of 10A. Write down the equation for the instantaneous value and find this value (a) 0.0025 sec (b) 0.0125 sec after passing through the positive maximum value.	CO2	[5]
Q.5	Derive the expression of Average value and RMS value of a sinusoidal quantity for a full cycle.	CO2	[5]