WALCHAND COLLEGE OF ENGINEERING

(Government Aided Autonomous Institute)
Visharambag, Sangli – 416415

First Year B.Tech. Group B (Civil, Mech, ELE)
ESE , ODD SEMESTER, AY 2022-23
Basic Electrical Engineering (6EL101)

ESE

PRN: _____

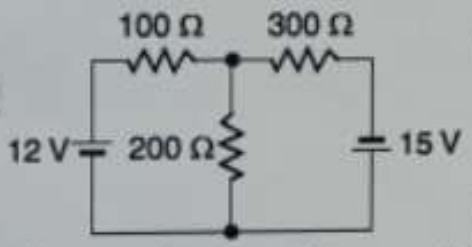
Day & Date: Friday, 03/03/2023 Time: 10.30 am to 12.30 pm

Max Marks: **50**

IMP: Verify that you have received question papers with correct course code, branch etc.

Instructions
a) All questions are compulsory.
b) Writing question number on answer book is compulsory otherwise answers may not be assessed.
c) Assume suitable data wherever necessary.
d) Figures to the right of question text indicate full marks.
e) Mobile phones, smart gadgets and programmable calculators are strictly prohibited.
f) Except PRN anything else writing on question paper is not allowed.
g) Exchange/Sharing of stationery, calculator etc. not allowed.

Text on the right of marks indicates course outcomes (Only for faculty use)		Marks	
Q1	**A)**	Find out the current flowing through 200 Ω resistor with proper direction.	**5**	CO2



	B)	What is meant by "Leading" & "Lagging" in AC Circuits. A resistance of 140 Ω, inductance of 0.85 H & Voltage Source of 120 V (RMS Value), 60 Hz are connected in series. Determine the Current in the circuit, the p.f. of the circuit.	**6**	CO2
Q2	**A)**	Derive EMF equation of DC Motor. An 8-pole lap connected armature has 960 conductors, a flux per pole of 40 mWb. & a speed of 400 rpm. Determine the EMF generated.	**8**	CO2
	B)	A 100/400 V Transformer is connected with 100 ohm load on secondary side. Calculate Primary Side Current, Secondary Side Current & Equivalent Impedance referred to Primary Side.	**5**	CO2
Q3	**A)**	Describe working principle of Single Phase Transformer with proper diagram. Also write the induced EMF equations on Primary & Secondary Side.	**6**	CO1

B) State what is Synchronous Speed & Slip. Explain any 1 type of starting method of 1 Phase Induction Motor. For a three-phase, 4-pole, 50-Hz induction motor, find out the Synchronous Speed. Also find out Rotor Speed at slip of 4 %. 8

Q4 A) Describe what is a Fuse and also its necessity. List different types of fuses.

OR

List out different types of electric lamp. Describe any one lamp in detail 6

B) State different types of wires. Draw the general construction diagram of Cable with proper labeling. 6

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