PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2025
(First Semester)

Branch - **ELECTRONICS**

ELECTRIC CIRCUITS

Time: Three Hours   Maximum: 75 Marks

SECTION-A (10 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	In series connection of resistors, what happens to the current across each resistor? a) Increases b) Decreases c) same d) Initially increases and decreases	K1	CO1
	2	Delta connection is also known as_____ a) Y-connection b) Mesh connection c) Either Y-connection or mesh connection d) Neither Y-connection nor mesh connection	K2	CO1
2	3	In superposition theorem, when we consider the effect of one voltage source, all the other voltage sources are _____ a) Shorted b) Opened c) Removed d) Undisturbed	K1	CO2
	4	The maximum power is delivered from a source to its load when the load resistance is _____ the source resistance. a) greater than b) less than c) equal to d) less than or equal to	K2	CO2
3	5	The response of a second order system is? a) pulse b) saw tooth c) square d) sinusoid	K1	CO3
	6	The value of the time constant in the R-L circuit is? a) L/R b) R/L c) R d) L	K2	CO3
4	7	What is the power factor in a pure resistive circuit? a) 0 b) -1 c) Infinity d) 1	K1	CO4
	8	The expression of bandwidth for the parallel resonant circuit is? a) 1/RC b) RC c) 1/R d) 1/C	K2	CO4
5	9	A polyphase system is generated by _____ a) Having two or more generator windings separated by equal electrical angle. b) Having generator windings at equal distances c) None of the above d) a and c	K1	CO5
	10	A single wattmeter is connected to measure the reactive power of a three-phase, three-wire balanced load. The line current is 17A and the line voltage is 440V. Calculate the power factor of the load if the reading of the wattmeter is 4488 VAR. a) 0.6 b) 0.8 c) 1 d) 1.2	K2	CO5

SECTION - B (35 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks   (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain the term "current" in detail.	K2	CO1
		(OR)		
	11.b.	Demonstrate the resistance in series and parallel with an example.		
2	12.a.	Select Thevenin's theorem and compare with Norton's theorem and explain.	K3	CO2
		(OR)		
	12.b.	Apply superposition theorem to a circuit give the output.		
3	13.a.	Construct a sine wave and explain its current and voltage waves.	K3	CO3
		(OR)		
	13.b.	Build a parallel RC circuit and explain its working.		
4	14.a.	Compare series resonance and parallel resonance and list its differences.	K4	CO4
		(OR)		
	14.b.	Analyze the variation of impedance with frequency and explain.		
5	15.a.	List the points on generation of 3 phase system.	K4	CO5
		(OR)		
	15.b.	Examine the power measurement in 3 phase circuits and list out its process.		

SECTION -C (30 Marks)
. Answer ANY THREE questions
ALL questions carry EQUAL Marks   (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Analyze the working of ohm's law with example.	K4	CO1
2	17	Examine the operation of maximum power transfer theorem and write the important points.	K4	CO2
3	18	Compare the phase relation in pure resistor and inductor and list the similarities.	K4	CO3
4	19	Give a conclusion on the working of tank circuit for a resonance frequency.	K4	CO4
5	20	Analyze and give a report on how to measure power in three wattmeter method.	K4	CO5

Z-Z-Z   END