

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(First Semester)

Branch - **ELECTRONICS**

ELECTRIC CIRCUITS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry **EQUAL** marks

$$(10 \times 1 = 10)$$

Module No.	Question No.	Question	K Level	CO
1	1	What is the phenomenon where an induced electromotive force (emf) opposes the change in current that causes it? a) Faraday's Law b) Self-induction c) Mutual induction d) Electromagnetic induction	K1	CO1
	2	The flow of electric charge in only ----- direction is known as direct current (DC) a) ONE b) TWO c) FOUR d) ALL	K2	CO2
2	3	Ideal voltage source should have _____. a) zero internal resistance b) infinite internal resistance c) large value of EMF d) low value of current	K1	CO1
	4	Kirchhoff's voltage law is concerned with _____. a) IR drop battery emfs b) junction voltage c) both IR drop and battery emfs d) all	K2	CO2
3	5	In an RLC circuit, which of the following is always used as a vector reference? a) Voltage b) Resistance c) Impedance d) Current	K1	CO1
	6	An E.M.F. can be induced by _____. a) Change in the magnetic field only b) Change in the area of cross section only c) Change in angle between magnetic field and area only d) Change in the magnetic field, area or angle between them	K2	CO2
4	7	Improving power factor a) Reduces current for given output b) Increases loss in line c) Increases the cost of equipment d) All of above	K1	CO1
	8	Low power factor has a drawback of a) Increased transmission and distribution losses b) Poor voltage regulation c) High cost of equipment for given load d) All of above	K2	CO2
5	9	Electric power in a Three Phase Circuit = _____. a) $P = 3 V_{Ph} I_{Ph} \cos\Phi$ b) $P = \sqrt{3} V_L I_L \cos\Phi$ c) Both 1 & 2. d) None of The Above	K1	CO1
	10	A polyphaser 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	K2	CO2

Cont...

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.	Discuss about power and energy.	K2	CO2
	(OR)			
	11.b.	Describe star to delta conversion.		
2	12.a.	Explain the Norton's theorem with example.	K2	CO2
	(OR)			
	12.b.	Describe the millman's theorem.		
3	13.a.	Show phase relationship of a capacitor with its principles.	K3	CO3
	(OR)			
	13.b.	Draw a parallel circuit diagram and explain.		
4	14.a.	Write short note on band width of RLC Circuit.	K4	CO4
	(OR)			
	14.b.	Discuss the function of resonance frequency for a tank circuit.		
5	15.a.	Conclude the power management for a single phase wattmeter.	K4	CO5
	(OR)			
	15.b.	Explain the principle of 3- phase system.		

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	Explain the series and parallel combination circuit with examples.	K1	CO1
2	17	Explain the thevenin's theorem with neat sketch.	K2	CO2
3	18	Derive the RL and RC series and parallel circuits with diagrams.	K3	CO3
4	19	Discuss the term magnification in resonance with examples.	K4	CO4
5	20	Design a circuit for phase sequence and write its applications.	K5	CO5

Z-Z-Z

END