

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BSc DEGREE EXAMINATION MAY 2026
(Second Semester)**

Branch – **ELECTRONICS**

ELECTRONIC 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	Clamping circuits require (i) Only resistor (ii) Only diode (iii) Diode, capacitor, resistor (iv) Inductor only	K1	CO1
	2	The ripple factor of a half-wave rectifier is (i) 0.482 (ii) 0.812 (iii) 0.5 (iv) 1.21	K2	CO1
2	3	Which biasing method provides best stability? (i) Fixed bias (ii) Collector-to-base bias (iii) Voltage divider bias (iv) Emitter bias	K1	CO2
	4	CE amplifier provides (i) High current gain (ii) Low gain (iii) High voltage gain (iv) power	K2	CO2
3	5	Push-pull amplifier reduces (i) Noise (ii) Harmonic distortion (iii) Power (iv) Frequency	K1	CO3
	6	Crossover distortion occurs in (i) Class A (ii) Class B (iii) Class C (iv) Class AB	K2	CO3
4	7	Negative feedback improves (i) Distortion (ii) Noise (iii) Stability (iv) Power loss	K1	CO4
	8	Voltage series feedback increases (i) Input impedance (ii) Output impedance (iii) Power (iv) Noise	K2	CO4
5	9	Barkhausen criterion requires loop gain to be (i) Infinite (ii) 0 (iii) 1 (iv) Less than 1	K1	CO5
	10	Bistable multivibrator has (i) No stable state (ii) One stable state (iii) Two stable states (iv) Three states	K2	CO5

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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.	Compare different types of filters (C, L, LC) based on ripple reduction.	K2	CO1
		(OR)		
	11.b.	Construct a clipper circuit to limit signal amplitude.		
2	12.a.	Describe the operation of an Emitter Follower.	K1	CO2
		(OR)		
	12.b.	Determine the gain and impedance of a Common Source FET amplifier.		
3	13.a.	Calculate efficiency of a Class A amplifier.	K2	CO3
		(OR)		
	13.b.	Discuss the load power and power dissipation in a Class B amplifier.		
4	14.a.	Apply feedback formula to calculate gain with negative feedback.	K3	CO4
		(OR)		
	14.b.	Explain voltage series and voltage shunt feedback amplifiers with their characteristics.		
5	15.a.	Describe operation of Schmitt trigger.	K3	CO5
		(OR)		
	15.b.	Evaluate advantages of crystal oscillator.		

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	Derive the expressions for Average value, RMS value, Ripple factor, and Efficiency of a Full-wave rectifier.	K1	CO1
2	17	Calculate and analyze the voltage gain, current gain, and power gain of a CE amplifier circuits.	K2	CO2
3	18	Express the push-pull amplifier configuration and derive expressions for load power, power dissipation, current drain, and efficiency.	K3	CO3
4	19	Discuss the basic concept of feedback in amplifiers and classify different types of feedback.	K3	CO4
5	20	Classify oscillators and explain the Barkhausen criterion for sustained oscillations.	K3	CO5

Z-Z-Z

END