PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(Third Semester)

Branch - **ELECTRONICS**

DIGITAL AND LINEAR IC's

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	The base material used in monolithic IC fabrication is typically _____ a) Germanium b) Silicon c) Gallium Arsenide d) Indium Phosphide	K1	CO1
	2	The most commonly used metal for metallization in ICs is _____ a) Gold (Au) b) Silver (Ag) c) Aluminum (Al) d) Copper (Cu)	K2	CO1
2	3	The basic building block of digital ICs is the _____ a) Logic gate b) Oscillator c) Amplifier d) Rectifier	K1	CO2
	4	The term CMOS stands for_____ a) Current Mode Operational Semiconductor b) Complementary Metal-Oxide-Semiconductor c) Combined Metal-Oxide-Switch d) Complementary Mode Operating System	K2	CO2
3	5	The output impedance of an ideal op-amp is___ a) Zero b) Infinite c) Very high d) Equal to input impedance	K1	CO3
	6	Instrumentation amplifiers are widely used in_____ a) Audio amplifiers b) Power amplifiers c) Oscillators d) Measurement and sensor signal conditioning	K2	CO3
4	7	The output of a zero crossing detector is a ____ a) Sinusoidal wave b) Triangular wave c) Square wave d) DC voltage	K1	CO4
	8	The phase shift provided by the RC network in an RC phase shift oscillator is _____ a) 90° b) 120° c) 180° d) 270°	K2	CO4
5	9	In astable mode, the 555 timer generates ____ a) A single pulse b) A continuous square wave c) A triangular wave d) A DC level	K1	CO4
	10	The frequency deviation of a VCO depends on_____ a) Control voltage b) Load resistance c) Power supply d) Output amplitude	K2	CO4

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.	Classify the function of epitaxial growth.	K2	CO1
		(OR)		
	11.b.	Illustrate the method of the monolithic transistors.		
2	12.a.	Provide a detailed explanation of the function of RTL.	K2	CO2
		(OR)		
	12.b.	Summarize the process of CMOS.		
3	13.a.	Examine the working principle of a non-inverting Amplifier.	K4	CO3
		(OR)		
	13.b.	Discover the working function of the integrator.		
4	14.a.	Organize the role of the schmitt trigger.	K3	CO4
		(OR)		
	14.b.	Identify and explain the concepts of the wien bridge oscillator.		
5	15.a.	Distinguish and explain the monostable mode and its application.	K4	CO4
		(OR)		
	15.b.	Assume the operation of the digital Phase detector.		

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	Interpret the operation of the photolithography.	K1	CO1
2	17	Assess the working principle of TTL with a neat diagram.	K2	CO2
3	18	Identify the principles of instrumentation amplifier with their applications.	K3	CO3
4	19	Classify the operation of the astable multivibrator and its advantage and disadvantage.	K3	CO4
5	20	Explain the operation of the 8038 function generator with suitable examples.	K4	CO4

Z-Z-Z END