PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2017
(Fourth Semester)

Branch - ELECTRONICS

DIGITAL AND LINEARS IC'S

Time : Three Hours Maximum : 75 Marks

SECTION-A (20 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 x 2 = 20)

1 Write use of insulating layer in IC fabrication.
2 Expand LSI and VLSI.
3 What is Totem pole output?
4 What is differential amplifier?
5 Define bandwidth.
6 What is differentiator and integrator?
7 Define comparator.
8 Mention two applications of comparator.
9 What is the operating voltage and drive load current timer 555?
10 Write two applications of PLL.

SECTION - B (25 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

11 a Explain the epitaxial growth method.
OR
b Explain Silicon wafer preparation methods.

12 a Explain the integrated injection logic.
OR
b Explain the operation of DTL basic NAND gate.

13 a Explain the working of Op-amp Adder circuit.
OR
b Explain the working of Op-amp integrator circuit.

14 a Explain the working of sine wave generator using Op-amp.
OR
b Explain Op-amp as comparator.

15 a Explain 555 in monostable mode.
OR
b Explain the operation of PWM circuit with waveform.

SECTION - C (30 Marks)
Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

16 Explain fabrication of transistors and resistors in monolithic IC with proper sketch.
17 Explain the open collector TTL NAND gate circuit with diagram.
18 Explain the working of instrumental amplifier and derive its formula for gain.
19 Explain the function of Monostable multivibrator with suitable waveforms.
O A Uvnloin fiinrtirmal hlock diagram of IC555.