

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

**BSc DEGREE EXAMINATION MAY 2018
(Fourth Semester)**

Branch – **ELECTRONICS**

DIGITAL & LINEAR 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 2 types of constructions employed in the manufacture of IC.
- 2 Define substrate.
- 3 Expand RTL and DTL.
- 4 Define open collector output.
- 5 What will be the input and output impedance range for ideal op-amp?
- 6 What is slew rate?
- 7 Name terminals available in Op-amps.
- 8 What is another name for astable Multivibrator?
- 9 What are the two basic operating modes of timer 555?
- 10 Expand PLL and VCO.

SECTION - B (25 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

- 11 a Explain the process of silicon wafer preparation.
OR
- b Explain the processes of photolithography.
- 12 a Explain the DTL circuit.
OR
- b Compare ECL and CMOS logics.
- 13 a Bring out the features of ideal Op-amp.
OR
- b Explain the working of V to I converter with circuit.
- 14 a Explain the operation of zero crossing detector.
OR
- b Discuss the operation of Monostable Multivibrator.
- 15 a Explain working of 555 in astable mode.
OR
- b Discuss the basic principle of PLL.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Explain the steps involved in making of monolithic Transistors with neat diagrams.
- 17 Explain totem pole output circuit with its circuit.
- 18 Explain inverting and non-inverting amplifier and its working functions of an Op-amp.
- 19 Discuss in detail about the influence of RC values in astable Multivibrator.
- 20 Explain the function generator of 8038 with block diagram.