PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2017
(Second Semester)

Branch - **ELECRONICS**

SEMICONDUCTOR DEVICES

Time : Three Hours Maximum : 75 Marks

SECTION-A (20 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10x2 = 20)

1 What is a semiconductor?
2 Write any two properties of semiconductor.
3 Define the term diode static resistance.
4 What is PN junction?
5 Draw the symbol of NPN and PNP transistor.
6 What are the types of FET?
7 Write any two application of LED.
8 What is opto couplers?
9 Expand CCD.
10 What is varactor Diode?

SECTION - B (25 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5x5= 25)

11 a How will you form an n-type semiconductor? Explain.
OR
b Discuss about the properties of PN junction.

12 a Briefly explain the basic construction and characteristics of PN junction diode.
OR
b Discuss about Diode reverse recovery time.

13 a How transistor act as switch? Explain.
OR
b Explain the drain characteristics of JFET.

14 a Describe the working of solar cell.
OR
b With a diagram explain the function of LED.

15 a What is CCD? Explain its working.
OR
b Explain the V-I Characteristics of UJT.

SECTION - C (30 Marks!
Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 1 0 = 30)

16 With a neat diagram explain the structure of semiconducting materials.

17 Write notes on : i) Transition and diffusion capacitance.
ii) Average AC resistance of diode.

18 Describe the structure and characteristics of enhancement type MOSFET.

19 Explain in detail about the function of LCD.

20 With a neat sketch, explain the construction and characteristics of SCR.