



NCF-003-027204 Seat No. _____

M. Sc. (ECI) (Sem. II) (CBCS) Examination

April / May - 2017

**Paper - 8 : Electronic Devices & Circuits
(Old Syllabus)**

Faculty Code : 003

Subject Code : 027204

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) All questions carry equal marks.
(2) Figures on right hand side indicate marks.

- 1 Answer the following : (Any Seven) 14**
- (1) Make a list of passive circuit components.
 - (2) What is an Inductor?
 - (3) Define the term "Electron Ballistics".
 - (4) Give a very brief introduction of semiconductor Diode.
 - (5) Write any two applications of PN junction Diode.
 - (6) Draw the symbol of NPN and PNP transistors.
 - (7) Define "Avalanche Multiplication" in transistors.
 - (8) Define the Field Effect Transistor.
 - (9) Write comparison of MOSFET with JFET.
 - (10) Write the types of transistor biasing configurations.
- 2 Answer the Following : (Any Two) 14**
- (1) Explain Carbon composition, Carbon-film, Thin-film, Tin-oxide type resistors. 7
 - (2) Write a note on Electrostatic deflection system in cathode ray tube. 7
 - (3) Write a note on intrinsic and extrinsic types of semiconductors. 7

3	Answer the Following :	14
	(1) Explain Zener breakdown and Avalanche breakdown in PN-Junction diode.	7
	(2) Write a note on Varactor Diode.	7
OR		
3	Answer the Following :	14
	(1) Explain the operation of NPN and PNP transistors with diagram.	7
	(2) Draw and explain CE configuration of NPN transistor.	7
4	Answer the following :	14
	(1) Draw and explain Avalanche Photodiode.	7
	(2) Explain the Metal-Semiconductor junction with energy band diagram.	7
5	Answer the following : (Any two)	14
	(1) Write a note on JFET.	7
	(2) Write a note on depletion MOSFET.	7
	(3) Write a note on biasing of FET.	7
	(4) Explain the motion of electron in magnetic field.	7