NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute)
Affiliated to Dr. A.P.J. Abdul Kalam Technical University, Uttar Pradesh, Lucknow
M.Tech
FIRST YEAR (SEMESTER-II) THEORY EXAMINATION   (2020-2021)
(Subjective Type)

Subject Code: AMTVL0215   **Max. Mks. : 30**

Subject: Nanoscale Devices: Modeling &Simulation   **Time   : 50 Minutes**

General Instructions:

All questions are compulsory.

Question No. 1 to 15 are subjective type question carrying 3 marks each. Attempt any 10 out of 15 questions.

Q.No	Question Content	Question Image	Category	Sub Category	Marks	Options Randomization	Type	Difficulty
1	What is small geometry effect?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
2	Discuss the problem associated with high-K materials		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
3	What do you mean by Volume inversion in MOSFET ?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
4	What is Coulomb scattering?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
5	What is two-dimensional electron gas ?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
6	What is the diffrence between 1DEG and 2DEG?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
7	What is meant by nanowire?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
8	What are LUMO and HOMO in semiconductor?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant

Q.No	Question Content	Question Image	Category	Sub Category	Marks	Options Randomization	Type	Difficulty
9	What is Coulomb Blockade?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
10	What are the advantages of SOI technology?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
11	What are the thermal issues in a SOI devices?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
12	What does fully depleted mean?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
13	What Causes Flicker Noise?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
14	What is the function of SRAM?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant
15	What do you mean by Operational amplifier?		Attempt any 10 questions	10 x 3=30	3		Subjective	Brilliant