CBCS SCHEME

USN | | | | | | | | | | |

17NT81

Eighth Semester B.E. Degree Examination, July/August 2021
Nano-Electronics

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions.***

1	a.	Discuss about Quantum electronics and add a note on upcoming electronic devices.	(10 Marks)
	b.	With a neat sketch, explain Quantum Dot Array [QDA].	(10 Marks)
2	a.	Explain about FET and SET with a neat sketch.	(10 Marks)
	b.	Enumerate the applications of SET the modern electronic devices in detail.	(10 Marks)
3	a.	Briefly explain carbon nanotubes with amazing properties.	(10 Marks)
	b.	Explain 3 structures of CNTs with a neat sketch. How do they differ?	(10 Marks)
4	a.	List out various potential applications of CNTs.	(10 Marks)
	b.	With a neat sketch, explain Top gated and Bottom gated Graphene FET.	(10 Marks)
5	a.	Describe SWCNTs and mention application, properties an structure.	(10 Marks)
	b.	Explain DWCNT's and add a note on properties, structures and applications.	(10 Marks)
6	a.	Explain the design of inverter using CNTFET.	(10 Marks)
	b.	Discuss about CNTFET small signal mode and electrical equivalent of CNT.	(10 Marks)
7	a.	Give a short note on Tunneling Diode. Mention its applications.	(10 Marks)
	b.	With a neat sketch, explain RTD.	(10 Marks)
8	a.	Explain about three terminal tunneling diode.	(10 Marks)
	b.	With a neat sketch, explain technology of RTBT.	(10 Marks)
9	a.	Explain Tunneling junctions and mention from applications	(10 Marks)
	b.	Discuss about potential energy profiles in detail.	(10 Marks)
10	a.	List out applications of tunneling and explain any two in brief.	(10 Marks)
	b.	Explain the concept of coulomb blockade in Nanocapacitor.	(10 Marks)

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