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| **Scheme of Valuation/Answer Key**(Scheme of evaluation (marks in brackets) and answers of problems/key) |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018 |
| **Course Code: EC304** |
| **Course Name:VLSI** |
| Max. Marks: 100 |  | Duration: 3 Hours |
| **PART A** |
|  |  | ***Answer any two full questions, each carries 15 marks*** | Marks |
| 1 | a) | Chemical reaction -2 marksPreparation method-3 marks | (5) |
|  | b) | Chemical reactions of wet and dry oxidation -3 marksPreparation method-3 marksNeat diagram-4 marks | (10) |
| 2 | a) | Doping Profile Equation-3 marksExplanation-4 marksDistribution diagram for different values of ion-beam energy-3 | (10) |
|  | b) | Implantation dose Qo=J\*t/q=7.5×1015 cm-2- 2 marksPeak impurity concentration$\frac{Qo}{∆Rp√2π}$= 9.97×1019cm-3.- 3 marks | (5) |
| 3 | a) | Fabrication sequence with diagrams | (10) |
|  | b) | Method -3 marksDiagram-2 marks | (5) |
| **PART B** |
| ***Answer any two full questions, each carries 15 marks*** |
| 4 | a) | Three power dissipations, DerivationsMathematical expression for each power dissipation | (10) |
|  | b) | Explanation with help of diagrams(3+2) | (5) |
| 5 | a) | Circuit diagram-2 marksLay out with correct dimensions-8 marks | (10) |
|  | b) | Two diagrams integrated together -5 marks | (5) |
| 6 | a) | Structure and working-6 marksMultiplexer-4 marks | (10) |
|  | b) | Diagram with dimensions -5 marks | (5) |
| **PART C** |
| ***Answer any two full questions, each carries 20 marks*** |
| 7 | a) | Diagram-4 marksRead and Write operation-(3+3)=6 marks | (10) |
|  | b) | FPGA explanation -4 marksConstructional details-4 marksApplications-2 marks | (10) |
| 8 | a) | Diagram-4 marksExplanation -6 marks | (10) |
|  | b) | Diagram-4 marksRead +Write –(3+3) =6 | (10) |
| 9 | a) | Diagram-4 marksExplanation-4 marksDelay equation-2 marks | (10) |
|  | b) | Diagram – 6 marksExplanation-4 | (10) |
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