|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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 marks  Preparation method-3 marks | | | (5) |
|  | b) | Chemical reactions of wet and dry oxidation -3 marks  Preparation method-3 marks  Neat diagram-4 marks | | | (10) |
| 2 | a) | Doping Profile Equation-3 marks  Explanation-4 marks  Distribution diagram for different values of ion-beam energy-3 | | | (10) |
|  | b) | Implantation dose Qo=J\*t/q=7.5×1015 cm-2- 2 marks  Peak impurity concentration  = 9.97×1019cm-3.- 3 marks | | | (5) |
| 3 | a) | Fabrication sequence with diagrams | | | (10) |
|  | b) | Method -3 marks  Diagram-2 marks | | | (5) |
| **PART B** | | | | | |
| ***Answer any two full questions, each carries 15 marks*** | | | | | |
| 4 | a) | Three power dissipations, Derivations  Mathematical expression for each power dissipation | | | (10) |
|  | b) | Explanation with help of diagrams(3+2) | | | (5) |
| 5 | a) | Circuit diagram-2 marks  Lay out with correct dimensions-8 marks | | | (10) |
|  | b) | Two diagrams integrated together -5 marks | | | (5) |
| 6 | a) | Structure and working-6 marks  Multiplexer-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 marks  Read and Write operation-(3+3)=6 marks | | | (10) |
|  | b) | FPGA explanation -4 marks  Constructional details-4 marks  Applications-2 marks | | | (10) |
| 8 | a) | Diagram-4 marks  Explanation -6 marks | | | (10) |
|  | b) | Diagram-4 marks  Read +Write –(3+3) =6 | | | (10) |
| 9 | a) | Diagram-4 marks  Explanation-4 marks  Delay equation-2 marks | | | (10) |
|  | b) | Diagram – 6 marks  Explanation-4 | | | (10) |
| \*\*\*\* | | | | | |