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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**  THIRD SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018 | | | | | |
| **Course Code: EC207** | | | | | |
| **Course Name: LOGIC CIRCUIT DESIGN (EC, AE)** | | | | | |
| Max. Marks: 100 | | |  | Duration: 3 Hours | |
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| **PART A** | | | | | |
|  |  | ***Answer any two full questions, each carries 15 marks.*** | | | Marks |
| 1 | a) | i. 2 Marks  ii. 2 Marks  iii. 2 Marks  iv. 2 Marks | | | ( 8) |
|  | b) | i. 2 Marks  ii. 2 Marks  iii. 3 Marks | | | ( 7) |
| 2 | a) | i. Even parity 4 Marks  ii. Odd parity 4 Marks | | | (8) |
|  | b) | Block diagram 2 Marks  Operation of MUX 2 Marks  Implementation of the given function 3 Marks | | | (7) |
| 3 | a) | K map representation= 3 Marks  Simplification= 3 Marks ( Term **“3”** should not be excluded)  realization using NAND only= 4 Marks | | | (10) |
|  | b) | Logic diagram= 3 Marks, working= 2 Marks | | | (5) |
| **PART B** | | | | | |
| ***Answer any two full questions, each carries 15 marks.*** | | | | | |
| 4 | a) | Circuit= 5Marks, Working = 5 Marks | | | ( 10) |
|  | b) | Comparison = 5 Marks | | | (5 ) |
| 5 | a) | Logic diagram= 5 Marks, Programming table = 3 Marks | | | (8) |
|  | b) | Truth table = 2 Marks, Design = 2 Marks, Logic circuit = 3 Marks | | | (7) |
| 6 | a) | Excitation table=3 Marks, Design using correct characteristic equation = 4 Marks Logic diagram= 3 Marks | | | (10) |
|  | b) | Conversion = 5 Marks | | | (5) |
| **PART C** | | | | | |
| ***Answer any two full questions, each carries20 marks.*** | | | | | |
| 7 | a) | Complete PIPO register- Logic diagram= 7 Marks. Working= 3 Marks | | | (10) |
|  | b) | Moore& Mealy sequential model with block diagrams =6 Marks  Comparison= 4 Marks | | | (10 ) |
| 8 | a) | Logic diagram of a Johnson counter.= 4 Marks  Truth table= 3 Marks  Operation = 3Marks | | | (10) |
|  | b) | i. 5 Marks  ii. 5 Marks | | | (10) |
| 9 | a) | 10 Marks, Proportional marks could be given for correct steps | | | (10) |
|  | b) | Sequence(flow) diagram =4 Marks  Final Logic diagram = 6 Marks | | | (10) |
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