Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov/Dec – 2017**

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| **Code :** | **14EC2032** | **Duration :** | **3hrs** |
| **Sub. Name :** | **TESTING FOR EMBEDDED SYSTEM** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Summarize the fault equivalence relation to reduce the number of fault for a combinational circuit. | CO1 | 15 |
| b. | Define testing of a system and classify the various testing methods. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Defend the following statement of fault dominance relation:  “ Let T***g*** be the set of all tests that detect a fault***g***. a fault ***f*** dominates the fault ***g*** iff ***f*** and ***g*** are functionally equivalent under T***g***. | CO1 | 15 |
| b. | Write short notes on logical fault model. | CO1 | 5 |
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| 3. | a. | Explain in detail the parallel Fault simulation Techniques with an example and also mention its limitations. | CO1 | 15 |
|  | b. | Compare and contrast the three types of fault simulation techniques. | CO1 | 5 |
| (OR) | | | | |
| 4. |  | “*The deductive fault simulation technique simulates the good circuit and deduces the behavior of all faulty circuits*”. Support this statement with an example circuit. | CO2 | 20 |
|  |  |  |  |  |
| 5. |  | Describe the main concept of critical path tracing with an example of stem analysis and full adder circuit. | CO2 | 20 |
| (OR) | | | | |
| 6. |  | Outline the basic steps involved in a classical D algorithm and apply the D algorithm for a circuit to explain its multiple sensitization feature. | CO2 | 20 |
|  |  |  |  |  |
| 7. | a. | List the four types of PLAs cross point fault models and illustrate these faults with a circuit. | CO2 | 15 |
|  | b. | Write the various test generation methods and discriminate between them. | CO1 | 5 |
| (OR) | | | | |
| 8. |  | Summarize the faults that occur in memory cell array with the help of state diagrams. | CO2 | 20 |
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|  | | **Compulsory:** |  |  |
| 9. | a. | Argue that BIST (Built in self test) offers various advantages over ATE (Automatic test equipment) and develop a simple built in self test design. | CO2 | 15 |
|  | b. | Devise various testing issues in embedded core based systems. | CO3 | 5 |