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**Question Paper Code: 95S14**

M.E. DEGREE EXAMINATION, JAN 2020

Elective

Electrical Engineering

19PPE514- DIGITAL SIMULATION OF POWER  
ELECTRONIC SYSTEM

(Regulation 2019)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Hybrid means ..... CO1- R  
(a) Mixed      (b) Single      (c) Unique      (d) None of the above
2. A transistor behaves as a linear device for ..... CO1- R  
(a) Small signals only      (b) Large signals only  
(c) Both small and large signals      (d) None of the above
3. .... Refers to the way a network is laid out, either physically or logically CO2- R  
(a) Line configuration      (b) Topology  
(c) Transmission mode      (d) Modulation mode
4. Which algorithm is used for solving temporal probabilistic reasoning? CO2- R  
(a) Hill-climbing search.      (b) Hidden markov model  
(c) Depth-first search      (d) Breadth-first search

5. If the electromagnetic torque in a DC shunt-generator is opposite, what can be further concluded? CO3- R
- (a) Mechanical power is absorbed by the machine
  - (b) Mechanical power is delivered by the machine
  - (c) Electromagnetic torque is in same direction of prime mover
  - (d) None of the mentioned
6. The large number of slots in induction motor CO3- R
- (a) Provides better overload capacity
  - (b) Reduces overload capacity
  - (c) Provides bigger size of motor
  - (d) Reduces the size of motor
7. A three phase full converter will require \_\_\_\_\_ number of SCRs. CO4- R
- (a) 3                      (b) 6                      (c) 9                      (d) 2
8. For a three phase full controlled converter, with 3 thyristors in the upper or positive group and 3 thyristors in the lower or negative group, at any given time CO4- R
- (a) two thyristors are conducting from each group
  - (b) one thyristor is conducting from each group
  - (c) one thyristor is conducting from either of the groups
  - (d) all 6 thyristors are conducting at a time
9. A single phase full-converter using R load is a \_\_\_\_\_ quadrant converter and that using an RL load without FD is a \_\_\_\_\_ quadrant converter CO5- R
- (a) one, one                      (b) two, one
  - (c) one, two                      (d) two, two
10. A fully controlled converter uses CO5- R
- (a) diodes only
  - (b) thyristors only
  - (c) both diodes and thyristors
  - (d) none of the mentioned

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

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|-----|-----------------------------------------------------------------------------|--------|-----|
| 11. | Explain semiconductor model of RLC combination                              | CO1- U | (8) |
| 12. | Explain computer solution of state equation                                 | CO2- U | (8) |
| 13. | Explain electromechanical modeling and any one of field excitation modeling | CO3- U | (8) |
| 14. | Explain speed controller and flowchart of the one quadrant DC motor drive   | CO4- U | (8) |
| 15. | Explain any one of the automatic code generation in prism                   | CO5- U | (8) |