Reg. No. :

Question Paper Code: 52538

M.E. DEGREE EXAMINATION, NOV 2016

Elective

Power Electronics and Drives

15PPE520 – SMART GRID

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. PLM means

    (a) Peak Load Management   (b) Plant Load Management
    (c) Power Leakage Management   (d) Plant Leakage Management

2. Smart Grid Technology comprises the following

    (a) AMI, PLM, OMS, Renewable Integration, Microgrid
    (b) DR/DSM, Distribution Automation, Energy Efficient Systems
    (c) all the above
    (d) none of these

3. A default Frame Relay WAN is classified as what type of physical network

    (a) Point-to-point   (b) Broadcast multi-access
    (c) Non-broadcast multi-access   (d) Non-broadcast multipoint

4. When setting up Frame Relay for point-to-point sub-interfaces, which of the following must not be configured

    (a) The Frame Relay encapsulation on the physical interface
    (b) The local DLCI on each sub-interface
    (c) An IP address on the physical interface
    (d) The sub-interface type as point-to-point

5. What are the security objectives of AMI are

   (a) Availability   (b) Confidentiality

   (c) Authentication   (d) All the above

6. What is the protocol suite for the current Internet

   (a) TCP/IP   (b) NCP   (c) UNIX   (d) ACM

7. The measure of location which is the most likely to be influenced by extreme values in the data set is the

   (a) range   (b) median   (c) mode   (d) All the above

8. In a Smart grid the role of Power Quality Conditioner is

   (a) Deliver Voltage and Current of proper level
   (b) Energy conversion
   (c) Energy Distribution
   (d) All the above

9. In which of the following technologies is the term HFC used

   (a) DSL   (b) PPPOE   (c) Frame Relay   (d) Dedicated T1

10. You need to configure a router for a Frame Relay connection to a non-Cisco router. Which of the following commands will prepare the WAN interface of the router for this connection

    (a) Router(config-if)#encapsulation frame-relay q933a
    (b) Router(config-if)#encapsulation frame-relay ansi
    (c) Router(config-if)#encapsulation frame-relay ietf
    (d) Router(config-if)#encapsulation frame-relay cisco

PART B - (5 x 2 = 10 Marks)

11. Differentiate conventional and smart grids.

12. List the merits of phase shifting Transformers.

13. State the applications of phasor measuring unit.

14. What are power quality issues?

15. How cloud computing is useful in smart grid.

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PART C - (5 x 16 = 80 Marks)

16. (a) Give present development and international policies in smart grid. (16)

Or

(b) Explain the diverse perspectives from experts and global smart grid initiatives. (16)

17. (a) Briefly explain the distribution system with neat sketch. (16)

Or

(b) Briefly explain the outage management. (16)

18. (a) Write a note on phasor Measurement Unit. (16)

Or

(b) Explain the AMI protocols and its standards and initiatives. (16)

19. (a) Explain in detail power quality issues of grid connected renewable energy sources. (16)

Or

(b) Brief about the power quality and EMC in smart grid. (16)

20. (a) Describe the Broadband over Power Line (BPL) in detail. (16)

Or

(b) What are the cyber security's provided in the smart grid? (16)

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