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Question Paper Code: 55020

Ph D.COURSE WORK EXAMINATION, MAY 2018

Elective

Course Work

15PPE520 – SMART GRID

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. 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

2. PLM means
 - (a) Peak Load Management
 - (b) Plant Load Management
 - (c) Power Leakage Management
 - (d) Plant Leakage Management

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. 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

10. In which of the following technologies is the term HFC used
 - (a) DSL
 - (b) PPPOE
 - (c) Frame Relay
 - (d) Dedicated T1

PART B - (5 x 2 = 10 Marks)

11. What are the global Smart grid Initiatives.
12. List the merits of phase shifting Transformers.
13. List the needs of AMI in Smart grid
14. What are power quality issues?
15. List out the building blocks of BPL.

PART C - (5 x 16 = 80 Marks)

16. (a) (i) Differentiate between Conventional and smart grid. (8)
(ii) Explain the Resilient and self healing grid (8)

Or

- (b) Explain the diverse perspectives from experts and global smart grid initiatives. (16)
17. (a) (i) Write a note on Substation Automation (8)
(ii) Briefly explain the Distribution system with neat sketch.. (8)

Or

- (b) Briefly explain the outage management. (16)
18. (a) (i) Write a note on phasor Measurement Unit. (8)
(ii) Explain the Intelligent Electronic Devices (IED) in detail. (8)

Or

- (b) Explain the AMI protocols and its standards and initiatives. (16)
19. (a) (i) Explain in detail power quality issues of grid connected renewable energy sources. (10)
(ii) Explain in Web based monitoring (6)

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) Give in detail about basics of Web Service and CLOUD Computing to make Smart Grids smarter (16)

