AR13

CODE: 13EE4025 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular Examinations, November-2016

HIGH VOLTAGE ENGINEERING

(Elective-II)

(Electrical & Electronics Engineering)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) Define lightning phenomenon.
   b) List the origin of switching surges.
   c) Define Paschen's law.
   d) What is time lag in breakdown of dielectrics?
   e) Define disruptive discharge voltage
   f) What are the limitations of series resistance micro ammeter method?
   g) What are the e tests conducted on surge arrester?
   h) Draw the circuit for measurement of dc resistivity.
   i) What is the material of the paper used for electrostatic copying?
   j) Give the example of electrostatic application of water purification.

PART-B

Answer one question from each unit **[5 x 12=60M]**

UNIT-I

2. a) Explain Finite Difference method of calculating electric field. 6M
   b) Explain the boundary element method in detail. 6M

(OR)

3. a) Explain Finite Element method of calculating electric field. 6M
   b) What are the causes of surge voltages? Explain in detail. 6M

UNIT-II

4. a) Explain the Townsend's first and second ionization processes. 6M
   b) Discuss the properties of composite dielectrics. 6M

(OR)

5. a) Explain breakdown mechanism in solid dielectrics. 6M
   b) Discuss streamer theory of breakdown in gases. 6M

UNIT-III

6. a) Describe, with a neat sketch, the working of a Van de Graaff generator. What are the factors that limit the maximum voltage obtained? 6M
   b) Draw and explain the Marx circuit arrangement for impulse current generator. 6M

(OR)

7. a) Explain the resonant transformers used for generation of high ac voltages. What are its advantages? 6M
   b) Explain Electrostatic voltmeter used for measurement of high voltage. 6M

UNIT-IV

8. a) Explain in detail various techniques for the measurement of high DC voltages. 6M
   b) Briefly discuss the various tests carried out on bushings. 6M

(OR)

9. a) Explain the methods of impulse testing of high voltage transformers 6M
   b) What is the use of high voltage Schering bridge ? Explain it with a neat diagram. 6M

UNIT-V

10. a) Explain the principle of operation electrostatic separator and mention the applications. 6M
    b) Explain the use of pulsed powder in food processing technology. 6M

(OR)

11. a) Describe the principle of electrostatic copying with an example. 6M
    b) Explain the process of electrostatic coating in detail. 6M

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CODE: 13EC4031 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular Examinations, November-2016

WIRELESS COMMUNICATION NETWORKS
(ELECTIVE-II)
(Electronics & Communication Engineering)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) Give out the merits of FDMA system.
   b) What are the three basic topologies supported by IEEE802.11 for WLAN?
   c) How many different symmetric and asymmetric data services does Bluetooth support?
   d) What is the difference between the MAC protocol of the Bluetooth and the IEEE 802.11?
   e) What is Wireless transaction
   f) Define Wireless datagram protocol
   g) What are the differences between the MAC layers of GPRS and CDPD?
   h) What are the equivalents of CDPD's MHF and MSF in the Mobile IP protocol?
   i) How many transport channels and logical channels are implemented in the HIPERLAN
   j) What are the purposes of scrambler and interleaver in the HIPERLAN

PART-B

Answer one question from each unit **[5 x 12=60M]**

UNIT-I

2. a) Explain with necessary diagrams the multiuser channels. 6M
   b) Explain packet radio. 6M

(OR)

3. a) Explain in detail about CDMA with neat diagrams. 6M
   b) State the differences between wireless and fixed telephone networks. 6M

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CODE: 13EC4031 SET-2

UNIT-II

4. a) Explain the functions of SS7 user part. 6M
   b) Discuss the various services provided by SS7. 6M

(OR)

5. a) Explain ATM virtual circuits with a neat figure. 6M
   b) Explain the functioning of OMAP (operation maintenance & administration part) 6M

UNIT-III

6. a) Draw the general scenario of mobile IP and explain its functioning. 6M
   b) Discuss wireless datagram protocols with salient features. 6M

(OR)

7. a) Discuss the tunneling in Mobile IP. 6M
   b) Describe the salient features of WML scripts. 6M

UNIT-IV

8. a) How many classes of QoS are supported by GPRS and what are the differences between them? 6M
   b) What are the new elements added to the AMPS infrastructure to support CDPD? 6M

(OR)

9. a) Briefly explain the IEEE 802.11 services. 6M
   b) What is the number of bits in each burst of GPRS and how does it differ from a GSM burst? 6M

UNIT-V

10. a) What were the aspects of WATM trials that impacted the formation of HIPERLAN-2 standard? 6M
    b) IEEE 802.11a/HIPERLAN-2 use BPSK and r = ½ convolutional coding for 9 Mbps information transmission and 64-QAM with r = ¾ convolutional coding for 54 Mbps. 6M
    What is the difference in maximum acceptable path loss (in dB) between the 9 Mbps and 54 Mbps modes of operation? Assume that the stronger r = ½ codes provide about 1dB advantage over the weaker r = ¾ codes.

(OR)

11. a) What are the major challenges in implementing WATM that did not exist for data oriented Ethernet like IEEE 802.11? 6M
    b) What are BCH and FCH channels in HIPERLAN-2 and what are their functionalities? 6M

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