AR13

CODE: 13EE4037 SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Supplementary Examinations, October / November-2020
POWER QUALITY MANAGEMENT
(Electrical and Electronics Engineering)

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

PART-A

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

1. a) State the term "voltage Swell".
   b) List any two Moderate immunity equipment for power quality.
   c) Discuss clearly on Voltage flicker?
   d) Specify the use of Voltage Regulators in electrical power system.
   e) Name the causes of impulse transient?
   f) Distinguish between impulse and oscillatory transient.
   g) Write a brief note on total harmonic distortion.
   h) Write down any one of the causes for Voltage Harmonics.
   i) Write down the working mechanism of harmonic analyser.
   j) Solving power quality problems depends what parameters?.

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. Define the power quality problem and Discuss about Power quality issues. 12M

(OR)

3. a) In how many categories we can Indices equipment Immunity and Power Quality. Demonstrate those categories with few examples. 8M
   b) Name any Four power quality standers and where they are applicable in Electrical system. 4M

UNIT-II

4. Write a note on power frequency disturbances with example and neat diagrams. 12M

(OR)

5. Mention all the Cures low frequency disturbances in power system and explain them. 12M

UNIT-III

6. a) Define electrical transient and List the types of electrical transients. 4M
   b) List and briefly discus about Causes of electrical transients in the power system. 8M

(OR)

7. With neat sketches explain electrical transients waveforms when: 12M
   i) Medium voltage capacitor bank switching transient
   ii) Motor start transient

UNIT-IV

8. Elucidate the effect of harmonic distortion on following power system devices: 12M
   i. Transformers ii. Cables
   iii. Capacitor Banks iv. Protective Devices

(OR)

9. a) List out causes of voltage and current harmonics. 4M
   b) Explain how the harmonics current mitigation taking place in Power system. 8M

UNIT-V

10. List out the Power Quality Measurement Instruments and explain how it works. 12M

(OR)

11. Identify the different steps in solving power quality problems and explain them. 12M

AR13

CODE: 13ME4040 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech II Semester Supplementary Examinations, October / November-2020

UNCONVENTIONAL MACHINING PROCESSES

(Mechanical Engineering)

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

PART-A

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

1. a) Classify some modern machining processes.
   b) What are the main elements in ultrasonic machining?
   c) Reuse of abrasives is not recommended in AJM. Why?
   d) Name some types of abrasives used in abrasive jet machining.
   e) Why insulating material is used in ECM?
   f) What are the advantages of ECM?
   g) Explain the selection process of electrode material in EDM
   h) What type of operations can be performed in EDM?
   i) What is meant by heat affected zone in Laser Beam Machining?
   j) List any few applications of Plasma Arc Machining.

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Discuss the effect of various process parameters on material removal rate (MRR) and accuracy of the machined work piece. 8M
   b) What is process selection and which aspects must be considered before process selection? 4M

(OR)

3. a) Write short notes on the following related to ultrasonic machining (USM): (i)amplitude and frequency of vibration (ii)Abrasive grain size 8M
   b) Briefly discuss the mechanisms involved in material removal by ultrasonic machining. 4M

UNIT-II

4. a) Discuss why the Abrasive Jet Machining will give poor result, when applied to ductile materials. 4M
   b) Explain any six variables that influence the rate of metal removal and accuracy of machining in Abrasive Jet Machining 8M

(OR)

5. a) What is meant by stand-off-distance in abrasive water jet machining and explain how it effects depth of cut with a graph? 8M
   b) Write the industrial applications of Abrasive Water Jet Machining 4M

UNIT-III

6.	a)	What are the three basic functions of electrolyte in electro chemical machining	3M
	b)	Draw a neat sketch of electro chemical plant and explain each part in it.	9M
		(OR)	
7.	a)	Write about Faradays laws of electrolysis	4M
	b)	With a neat sketch explain the working of electro chemical grinding	8M

UNIT-IV

8.	a)	Explain the functions and characteristics of dielectric fluid used in EDM process.	6M
	b)	Explain the mechanics of metal removal in Electron Discharge Machining.	6M
		(OR)	
9.	a)	What are the basic requirements of tool materials in EDM process? Name any four tool materials.	6M
	b)	What are the characteristic of spark eroded surfaces in Electron Discharge Machining?	6M

UNIT-V

10.	a)	Compare EBM and LBM on the following aspects: (i) Machining rate (ii) Tool wear rate (iii) Accuracy	6M
	b)	What is laser and how is it used to machine the materials? Give the thermal features and analysis of the Laser Beam Machining.	6M
		(OR)	
11.		Explain any two types of plasma arc torches with a neat sketch used in Plasma Arc Machining.	12M

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CODE: 13EC4044 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Supplementary Examinations, October / November-2020

EMBEDDED & REAL TIME OPERATING SYSTEMS
(Electronics and Communication Engineering)

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

PART-A

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

1. a) Define an embedded system with an example.
   b) Name the trade-offs present in the design of an Embedded system.
   c) Which systems are classified as real time systems?
   d) What is the need for synchronisation among processes?
   e) Name any three interfacing devices.
   f) Write few advantages of Ethernet standard
   g) What does an interrupt service routine do?
   h) What is an event register?
   i) What is an RTOS?
   j) Write any two differences between Linux and windows CE operating systems.

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Write about Instruction execution and pipelining concepts of general purpose processors. [6M]
   b) Explain about Development environment of a general purpose processor. [6M]

(OR)

3. (a) Explain about various design metrics used in Embedded system design. [6M]
   (b) Compare general purpose processors with single purpose processors. [6M]

UNIT-II

4. a) Explain about concurrent process model with an example. [6M]
   b) Describe the Communication among processes of a general purpose processor. [6M]

(OR)

5. a) Explain about Data Flow model with an example. [6M]
   b) Elaborate the concept of finite state machines with data path model (FSMD). [6M]

UNIT-III

6. a) Write briefly about Telecommunication standards RS422 and RS485. [6M]
   b) Explain about Bluetooth Protocol Architecture. [6M]

(OR)

7. a) Briefly explain the concept of Ethernet [6M]
   b) Explain the role of RS232 in a serial communication process. [6M]

UNIT-IV

8. a) What are the different types of semaphores present in parallel programming environment? [6M]
   b) Explain briefly about a task scheduler in a real time embedded system. [6M]

(OR)

9. a) What is a deadlock condition .When does this occur. Explain in detail. [6M]
   b) Explain how kernels provide mailbox service to various tasks. [6M]

UNIT-V

10. a) Discuss briefly about priority inversion problem and explain how to avoid it. [6M]
    b) What are different synthesis processes adopted in embedded system design? [6M]

(OR)

11. a) Explain briefly about various operating systems used in embedded systems. [6M]
    b) Explain briefly about verification approaches adopted in embedded system design. [6M]

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CODE: 13CS4043 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Supplementary Examinations, October / November-2020
MOBILE ADHOC AND SENSOR NETWORKS
(ELECTIVE – IV)
(Computer Science & Engineering)

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

PART-A

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

1. a) What is a adhoc network
   b) What is a topology based routing approach in adhoc networks
   c) Define geocasting
   d) List the services provided by TCP
   e) Define a sensor node in WSN
   f) List the three categories of threats to computer systems
   g) What is the need for a node level simulator
   h) What is Static channel allocation
   i) What is an IDS
   j) Define a Wireless Mesh Network

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Illustrate the scope of wireless technologies for implementing PAN, LAN, MAN & WAN 6M
   b) List various challenges related to routing in MANETs 6M

(OR)

3. a) What are proactive routing protocols? Explain DSDV in detail 8M
   b) Describe how power aware routing protocol is implemented in MANETs 4M

UNIT- II

4. a) Explain how broadcasting is carried out in MANETs 7M
   b) Describe about Multicast Optimized Link State Routing (MOLSR) 5M

(OR)

5. Describe what kind of impact MANETs have on TCP protocol 12M

UNIT- III

6. a) Draw the functional block diagram of typical senor node and explain 6M
   b) List and explain the different challenges involved with routing protocol design for WSN's 6M

(OR)

7. a) Describe the desirable characteristics of security solutions for adhoc networks 4M
   b) Explain the ARAN protocol for MANETs 8M

UNIT – IV

8. a) How WSN's can be classified? Explain with suitable examples 5M
   b) Compare Hierarchical and flat topologies for routing in WSN 7M

(OR)

9. Describe about TinyOS and TinyGALS node-level programming tools 12M

UNIT –V

10. Describe briefly about major issues related to WSN Security 12M

(OR)

11. Explain about Vehicular Adhoc Networks 12M