AR13

CODE: 13CE4037 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Regular Examinations, April-2017
Pavement Analysis and Design
(Elective-4)
(Civil Engineering)

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

PART-A

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

1. a) Explain concept of tire pressure in design of pavements
   b) Write the uses of Benkleman Beam Method
   c) Write the equations for temperature stresses in concrete pavements
   d) Write the overlay technique used in pavements.
   e) Write the importance of joints in Rigid pavement.
   f) Define Alligator Cracking
   g) Enumerate various maintenance steps in maintenance of a rigid pavement
   h) Define Soil-Lime Stabilization
   i) Write a short note on use of tie bars in cement concrete pavement
   j) Define Transverse Cracking

PART-B

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

UNIT-I

2. Explain various factors effecting design and performance of pavement. 12 M

(OR)

3. a) List out the differences between Flexible and rigid pavement. 6 M
   b) Explain how Material Characteristics influence design of pavement 6 M

UNIT-II

4. a) Explain Burmister Theory for Pavement Design in detail 6 M
   b) Explain Boussinesq two layered for pavement deign with neat sketch 6 M

(OR)

5. a) List out various equation suggested by Westerguard for the calculation of wheel load stresses acting on a Rigid pavement 6 M
   b) Explain a) relative stiffness of slab b) modulus of sub-grade reaction 6 M

UNIT-III

6. Explain IRC method of flexible pavement design with neat sketch. 12 M

(OR)

7. a) Write in Detail about the usage of tie bars in rigid pavement design 6 M
   b) Explain AASHO Method of Flexible Pavement design 6 M

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CODE: 13CE4037 **SET-1**

UNIT-IV

8.	a)	Explain Crushing test conducted on aggregate with neat Sketch	6 M
	b)	Explain in detail various steps followed in the Construction a) Earth Roads b) Gravel Roads	6 M
		(OR)	
9.		Explain in detail a) Soil-cement Stabilization b) Soil-lime Stabilization.	12 M

UNIT-V

10.		Explain Benkleman Beam method of Pavement evaluation in detail with neat sketch	12 M
		(OR)	
11.	a)	Write in detail about maintenance of Rigid pavements.	6 M
	b)	Write a detailed note on various failures in Flexible pavements	6 M

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AR13

CODE: 13EE4037 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Regular Examinations, April-2017
POWER QUALITY MANAGEMENT
(Elective-IV)
(Electrical and Electronics Engineering)

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

PART-A

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

1. a) Give any one major power quality issue?
   b) Define minimum voltage sag ride through capability
   c) What are the causes of transients
   d) What is the device used for over voltage protection
   e) Give any one sag mitigation device
   f) Define Ferro resonance
   g) Application of Uninterrupted power source system
   h) What is the role of voltage regulator in power quality
   i) What is the importance of point of common coupling in evaluating harmonic distortion
   j) What is use of Data Loggers in evaluating power quality

PART-B

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

UNIT-I

2. What are power quality standards and explain them with the recommended specifications **12M**

(OR)

3. Define power quality, explain the reasons of increased concern in power quality **12M**

UNIT-II

4. Give in detail the cures for low frequency disturbances **12M**

(OR)

5. What are online UPS, stand by UPS , Hybrid UPS and differentiate them **12M**

UNIT-III

6. Give any one method for power factor correction and how to mitigate the capacitor Switching Transients **12M**

(OR)

7. a) Explain the difference between transients and harmonics **4M**
   b) Explain how to curb the transients produced due to interruption of fault circuits **8M**

AR13

CODE: 13EE4037 **SET-2**

UNIT-IV

8.	a)	Explain briefly various harmonic characterization in power systems	**6M**
	b)	What is THD , How to calculate it for current harmonics	**6M**
		(OR)	
9.	a)	What are harmonics sources of commercial loads?	**6M**
	b)	Explain a method to mitigate current harmonics?	**6M**

UNIT-V

10.	Explain the use of Transient-Disturbance Analyzers, Oscilloscopes in power quality measurements	**12M**
	(OR)	
11.	Explain the role of Chart Recorders, True RMS Meters in power quality measurements	**12M**

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AR13

CODE: 13ME4040 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Regular Examinations, April-2017

UNCONVENTIONAL MACHINING PROCESSES
(Mechanical Engineering)

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

PART-A

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

1. a) What is meant by Unconventional Machining Processes?
   b) List the unconventional machining process, which uses thermal or heat energy?
   c) Name the unconventional machining processes which consume minimum power?
   d) Define AJM
   e) What are the factors that influence oxidation in ECM?
   f) Which material is used to make the grinding wheel in ECG?
   g) What is cycle time in EDM?
   h) What is the function of magnetic lens used in EBM?
   i) Which part is constricted by plasma?
   j) What is the Maser principle?

PART-B

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

UNIT-I

2. a) Explain the need for the development of unconventional machining process by considering any two simple cases of your own interest. 6
   b) Briefly discuss about the mechanisms involved in material removal using USM. 6

(OR)

3. a) Is unconventional machining process an alternate or complement to conventional machining process? Justify. 6
   b) Explain the USM process by using a schematic diagram. 6

UNIT-II

4. a) Explain how material is removed in AWJM. 6
   b) Write the application of different types of abrasives used in AJM. 6

(OR)

5. a) Write short notes on material removal rate and wear rate of nozzle in WJM. 7
   b) What are the five important variables of AJM process? Explain. 5

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CODE: 13ME4040 **SET-1**

UNIT-III

6.	a)	Explain in detail the fundamentals and mechanism of chemical machining.	7
	b)	Discuss about economic aspects of ECM.	5
		(OR)	
7.	a)	Explain various types of tool designs in ECM.	6
	b)	Explain the electrochemical honing process with neat sketch.	6

UNIT-IV

8.	a)	What are the functions of dielectric fluid used in EDM?	6
	b)	Explain in detail about the positioning system, wire drive system and power supply of wire cut EDM.	6
		(OR)	
9.	a)	What are the basic requirements of tool material in EDM process?	6
	b)	Discuss the advantages of electro discharge grinding.	6

UNIT-V

10.	a)	Explain working of Laser Beam Machining with neat sketch.	6
	b)	Distinguish between the electron beam machine and laser beam machine.	6
		(OR)	
11.	a)	Explain metal removal mechanism in Plasma Arc machining with neat sketch.	6
	b)	Explain process parameters advantages and limitations of Electron beam machining.	6

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AR13

CODE: 13EC4044 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Regular Examinations, April-2017
EMBEDDED & REAL TIME OPERATING SYSTEMS
(ELECTIVE – IV)
(Electronics & Communication Engineering)

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

PART-A

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

1. a) Define multi-tasking.
   b) Give any two properties of operating systems
   c) State some of the networks dedicated for embedded systems.
   d) What is piconet?
   e) Name the different layers in Ethernet.
   f) State the purpose of event registers.
   g) What does a USB packet contain?
   h) Define deadlock.
   i) Mention some features of Bluetooth.
   j) What is a counting semaphore?

PART-B

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

UNIT-I

2. a) State and explain various instruction set preliminaries. 6M
   b) Explain the basic architecture of general purpose processors. 6M

(OR)

3. a) What is a single-purpose processor? What are the benefits of choosing a single purpose processor over general purpose processor? 6M
   b) What is Application Specific Integrated Circuit (ASIC)? Explain the role of ASIC in Embedded System design? 6M

UNIT-II

4. a) How is concurrent model differ from others? 6M
   b) Explain concurrent state machine model. 6M

(OR)

5. a) What are different types of state machine models? And explain briefly. 6M
   b) Explain Finite-state machines with data paths. 6M

UNIT-III

6. a) Explain different layers in IEEE 802.11. 6M
   b) How is bandwidth distribution done in USB across different types of transfers? 6M

(OR)

7. a) Write the limitations of RS-232. 6M
   b) Mention the characteristics of Bluetooth. 6M

AR13

CODE: 13EC4044 **SET-2**

UNIT-IV

8.	a)	Write short note on: i) Message Queues ii) Mail box iii)Signalling	6M
	b)	Explain about the following scheduling algorithms: i) Round Robin with priority ii) First - in-First-out iii) Last-in-First-out	6M

(OR)

9.	a)	What is race condition? How it is related to the shared resource access using an example?	6M
	b)	Explain with suitable examples how to i)Create a task ii)Suspend a task	6M

UNIT-V

10.	a)	What is priority inversion problem? How the priority inversion problem can be handled?	6M
	b)	What are the different steps in developing and testing of Linux device driver?	6M

(OR)

11.	a)	What are different modes of operations associated with Timer?	6M
	b)	Explain the different file system used in embedded Linux.	6M

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AR13

CODE: 13CS4043 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Regular Examinations, April-2017
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) Define routing
   b) List out the characteristics of MANET
   c) Define MANET
   d) Define cluster
   e) Define sensor node
   f) Define topology
   g) List out the design issues of WSN
   h) What are the applications of sensor networks
   i) Define wireless mesh network
   j) Define reactive protocols

PART-B

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

UNIT-I

2. a) Explain the applications of MANETs
   b) Explain about AODV in Ad-Hoc Networks

(OR)

3. a) Differentiate cellular and Ad Hoc networks
   b) Write a short notes on routing protocols

UNIT-II

4. a) Write about rebroadcasting schemes
   b) Explain about congestion in TCP

(OR)

5. a) Write a short note on Geocasting
   b) Compare TCP and MANET

UNIT-III

6. a) Write a short note on applications of sensor networks
   b) Write a short note on security in AdHoc & Sensor networks

(OR)

7. a) Write a short note on cooperation in MANET
   b) Write a short note on Key management

UNIT-IV

8. a) Explain about classification of WSN
   b) Write a short notes on Berkeley Motes

(OR)

9. a) Explain about inherent dynamic nature of WSN
   b) Explain about MICA mote architecture

UNIT-V

10. a) Explain about key management in WSN
    b) Write a short note on vehicular ad Hoc networks

(OR)

11. a) What are the challenges faced by sensor networks
    b) Explain about wireless mesh networks

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AR13

CODE: 13IT4007 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Regular Examinations, April-2017
MULTIMEDIADATABASES
(Elective-IV)
(Information Technology)

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

PART-A

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

1. a) What are Properties of Raw Images
   b) Define A Stop List
   c) What is SMDC
   d) Define The principle of uniformity
   e) What is Node Structure of 2-d Tree
   f) What is Homogeneity Predicate
   g) Define Media Abstraction
   h) Define Telescoping
   i) What is Signature File
   j) Define A Cell Property

PART-B

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

UNIT-I

2. Define and Explain about Point Quad Trees 12M

(OR)

3. Define and Explain about MX- Quad Trees 12M

UNIT-II

4. Explain Latent Semantic Indexing 12M

(OR)

5. How can we insert a node in to TV-Trees 12M

AR13

CODE: 13IT4007 **SET-2**

UNIT-III

6.		Write about Representing Image DBs with R-Trees	12M
		(OR)	
7.		Write a note on Compressed Image Representations	12M

UNIT-IV

8.		Write in detail about Querying content of video libraries	12M
		(OR)	
9.		Write in detail about General Model of Audio Data	12M

UNIT-V

10.	a)	With a Neat diagram explain architecture of Mulimedia Database	6M
	b)	Discuss the concept of Query Relaxation and Expansion	6M
		(OR)	
11.		Explain Indexing SMDCs with Enhanced Inverted Indeces	12M

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