AR13

CODE: 13CE4029 **SET-2**

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

GROUND IMPROVEMENT TECHNIQUES
(CIVIL ENGINEERING)

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

PART-A

Answer all questions **[1 x 10 = 10 M]**

1 a) What is meant by Interceptor Drain?
b) Name any two dewatering methods.
c) Define the term Sand Drain.
d) What is meant Suspension Grout?
e) Define the term Cement Stabilization.
f) What is meant by Uniaxial Loading?
g) What is meant by Geomembrane?
h) Define the term Unconformity.
i) Name any two Expansive Soils.
j) Define the term Stability.

PART-B

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

UNIT-I

2. (a) Explain any two Injection methods of Grouting. **[12M]**
(b) Write a note on single and Multi stage Well points.

(OR)

3 (a) Briefly explain about Foundation drains and Interceptor Drains. **[12M]**
(b) Discuss the working principle of Post Grout test

UNIT-II

4 (a) Differentiate between Stone and Lime Columns. **[12M]**
(b) Write a note on Vertical Drains.

(OR)

5 (a) Briefly discuss about the various dewatering methods in Cohesive Soils. **[12M]**
(b) Discuss about the impact of Vibration at the Ground surface.

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UNIT-III

6 (a) Briefly discuss the factors affecting Lime stabilization. **[12M]**
(b) Write a note on the factors governing design of reinforced Earth walls.

(OR)

7 (a) Briefly discuss about any two Chemical Stabilization methods. **[12M]**
(b) Write a note on the components of Reinforced Earth wall.

UNIT-IV

8. (a) Write a note on the application of Geotextiles. **[12M]**
(b) Briefly discuss about the various types of Geosynthetics.

(OR)

9. (a) Write a note upon the raw materials used in the application of Geosynthetics.
(b) Briefly discuss the various functions and applications of Geo synthetics. **[12M]**

UNIT-V

10. (a).Briefly discuss about the problems related to Expansive Soils.
(b). Write a note on the foundation techniques pertaining to Expansive soils. **[12M]**

(OR)

11. (a) Discuss in brief about various methods for determination of Swell pressure in Expansive soils.
(b) Discuss some applications of Soil reinforcement in Ground Improvement works. **[12M]**

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CODE: 13EC4019 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.TECH I SEM REGULAR EXAMINATIONS, NOVEMBER, 2016

MICROPROCESSOR AND MICROCONTROLLERS

(Elective-II)

(Electrical & Electronics Engineering)

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

PART-A

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

1. a) Define assembler directive
   b) What is the function of ALE signal of 8086
   c) How much memory is reserved for interrupt structure of 8086 Microprocessor
   d) What is the capacity of 8051s on chip program memory
   e) Explain LOOP instruction of 8086
   f) What is the need of Intel 8255?
   g) In which mode, all 8255 ports are operated as simple I/O ports
   h) Write ALP format of 8086 Microprocessor
   i) When Zero flag will be set in 8086 Microprocessor
   j) Write DMA operation

PART-B

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

UNIT-I

2. a Explain the Minimum mode signals of 8086 Microprocessor
   b Explain addressing modes of 8086 with suitable example

(OR)

3. a Explain the block diagram of 8086 microprocessor with neat sketch
   b Draw and explain memory read cycle timing diagram

UNIT-II

4. a Explain Machine language instruction format
   b Write an ALP in 8086 to determine average of N-BCD numbers

(OR)

5. a Explain interrupt processing of 8086 microprocessor
   b How stack is operated in 8086 explain using PUSH and POP instructions

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CODE: 13EC4019 **SET-1**

UNIT-III

6. Briefly explain the register organisation of 80386.

(OR)

7. a Explain the modes of operation of 80386
   b Explain the data types of 80386.

UNIT-IV

8. a Explain the various mode of operations of Intel 8255
   b Write a control word for all ports of 8255 output ports

(OR)

9. a How serial communication performed using 8251 explain
   b What is the purpose of 8259 interface discuss briefly

UNIT-V

10. With a neat sketch explain the internal block diagram of 8051 micro controller.

(OR)

11. a Explain the parallel I/O ports of 8051 micro controller.
    b What is an interrupt and explain various interrupts of 8051

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CODE: 13ME4029 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

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

POWER PLANT ENGINEERING

(Mechanical Engineering)

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

PART-A

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

1. a) What is the principle of working of solar cell?
   b) What is the principle of working of fuel cell?
   c) Write short note on coal handling?
   d) What are retort stokers?
   e) What are different types of IC engines?
   f) What is the principle of working of closed cycle gas turbine.
   g) Write about classification of dams?
   h) What is gas cooled reactor in nuclear power station?
   i) What is meant by capital cost?
   j) What is meant by demand factor?

PART-B

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

UNIT-I

2. a) Explain about thermoelectric power generation, thermionic power generation and photovoltaic power generation?
   b) Explain about MHD? Open and closed cycle MHD.

(OR)

3. a) What is fuel cell and explain?
   b) Explain about tidal power and what are the advantages and limitations of tidal power. Explain single basin arrangement and double basin arrangement.

UNIT-II

4. a) What is meant by 'over feed' and 'under feed' principles of firing coal?
   b) Make neat sketch and explain the working of chain grate stoker, spreader stoker and multi retort stoker.

(OR)

5. a) What is cooling tower? Explain about cooling ponds, natural draught cooling and mechanical draught cooling towers.
   b) Describe the various types of burners used to burn pulverized coal.

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UNIT-III

6. a) Write a short note on super charging. What are the advantages of supercharger?
   b) Give the advantages and limitations of gas turbine power plant. Give the application of gas turbine power plants.

(OR)

7. a) Explain about cooling system of diesel power plant
   b) Name the major components of a gas turbine plant. Draw a simple line diagram for a simple open cycle gas turbine plant.

UNIT-IV

8. a) How hydro power plants are classified? Explain in detail.
   b) What are the different components of a nuclear power plant? Explain the working of a nuclear power plant.

(OR)

9. a) Compare hydro-diesel-thermal power plants
   b) What is meant by uranium enrichment? Describe some methods of Uranium enrichment.

UNIT-V

10. a) What is the difference between demand factor and diversity factor?
    b) Prove that the load factor of a power system is improved by an increase in diversity of load.

(OR)

11. a) Discuss the factors to be considered for, 'plant selection'.
    b) Explain capital cost, investment of fixed charges, operating costs.

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CODE: 13EC4030 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

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

TELECOMMUNICATION SWITCHING SYSTEMS AND NETWORKS

(Electronics & Communication Engineering)

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

PART-A

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

1. a) What are the elements of switching systems
   b) Differentiate Time division space and time division time switching systems
   c) List modes of centralized SPC
   d) What is n- stage combination switching?
   e) What is meant by subscriber loop interface
   f) Differentiate in channel and common channel signalling
   g) What is the difference between Repeater and Router
   h) Differentiate Circuit Switching and packet switching
   i) What is ISDN?
   j) What is the function of Cable Modem

PART-B

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

UNIT-I

2. a Draw and explain switching network configuration? [6 M]
   b What are the functions of switching systems? Explain [6 M]

(OR)

3. a Write about basics of a Switching system. [6 M]
   b Draw and explain 3X3 crossbar switching principal. [6 M]

UNIT-II

4. a Explain the load sharing operation of Centralized SPC. [6 M]
   b Explain Time Multiplexed Space Switching. [6 M]

(OR)

5. a Write about level2 processing in Distributed Stored program control. [6 M]
   b Explain the Time Multiplexed Time switching with Parallel-in/ serial-out Configuration. [6 M]

UNIT-III

6.	a	Explain subscriber loop system with neat sketch.	[6 M]
	b	Explain switching hierarchy and routing.	[6 M]
		(OR)	
7.	a	Explain the Architecture of SS7.	[6 M]
	b	Write about Network Traffic load and parameters.	[6 M]

UNIT-IV

8.	a	Explain data communication circuits.	[6 M]
	b	Explain data communication network architecture and standards.	[6 M]
		(OR)	
9.	a	Explain about Public Switched data networks.	[6 M]
	b	Write about Bridges, Routers and Gate ways.	[6 M]

UNIT-V

10.	a	Explain numbering and addressing plan for ISDN.	[6 M]
	b	Explain ISDN architecture with neat sketch.	[6 M]
		(OR)	
11.	a	Explain about Cable Modem, HFC Networks	[6 M]
	b	Write about Synchronous Transport Signals,STS I of SONET.	[6 M]

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CODE: 13CS4031 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

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

IMAGE PROCESSING

(ELECTIVE – II)

(Computer Science & Engineering)

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

PART-A

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

1. a) What is digitizer, give example
   b) What is histogram
   c) Write about connectivity
   d) Define mask
   e) What is scaling
   f) Define fidelity criteria
   g) List fundamental operations of morphological process
   h) Define thresholding
   i) What are filters used for edge detection
   j) List various color models

PART-B

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

UNIT-I

2. a) Explain the Spatial and Gray level resolution 6M
   b) Explain the components of an Image Processing System with neat diagram 6M

(OR)

3. a) Explain the color Image and color models 8M
   b) Write About Sampling and Quantization 4M

UNIT-II

4. a) What is image enhancement? Explain the need for enhancing an image 7M
   b) Explain about basic transformation in imaging 5M

(OR)

5. a) Define histogram. Explain the histogram equilization algorithm 6M
   b) Explain the different spatial smoothening filters 6M

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CODE: 13CS4031 SET-2

UNIT-III

6.	a)	Explain image compression models with neat diagrams	6M
	b)	Explain the error free coding	6M
		(OR)	
7.	a)	Explain the Lossy and Lossless Predictive Coding Techniques	6M
	b)	Explain the image compression model with neat diagram	6M

UNIT-IV

8.	a)	Define the Opening and Closing. List the properties of Opening and Closing operations	6M
	b)	What is meant by Morphology? Explain some basic Morphological Systems?	6M
		(OR)	
9.	a)	Explain the concept of Dilation and Erosion	6M
	b)	Explain how HIT-or-MISS transformation is used for finding local pattern pixels	6M

UNIT-V

10.	a)	How is image segmentation is performed using adaptive Thresholding technique?	6M
	b)	Explain about boundary descriptors	6M
		(OR)	
11.	a)	Explain about region splitting and merging procedure	6M
	b)	Explain about regional descriptor	6M

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CODE: 13IT4013 **SET-2**

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

ADVANCED COMPUTER ARCHITECTURE
(INFORMATION TECHNOLOGY)

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

PART-A

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

1. a) What is the purpose of Loader?
   b) State the three ways to improve the cache performance.
   c) Define Virtual memory and Cache memory.
   d) Define miss rate and miss penalty.
   e) What is the purpose of Delay Instruction?
   f) Define clock cycle and throughput.
   g) State the principle of Vector Processing.
   h) Distinguish between Synchronous Networks and Asynchronous Networks.
   i) Define i) Buffer Deadlock ii) Channel Deadlock
   j) What is the significance of Adaptive Routing?

PART – B

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

UNIT I

2. a) Describe the Flynn's classification of Parallel Processors. [8 M]
   b) Explain the six layers of computer system deployment. [4 M]

(OR)

3. a) Write the differences between symmetric multiprocessors and asymmetric multi processors. [4 M]
   b) Discuss about shared memory multiprocessor models [8 M]

UNIT II

4. a) Explain the basic memory hierarchy of computer. [5 M]
   b) List and explain the metrics used for optimization of cache performance. [7 M]

(OR)

5. Explain the following [12 M]
   (a) Way Prediction
   (b) Non Blocking Cache
   (c) Pipelined Cache access

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CODE: 13IT4013 **SET-2**

UNIT III

6. a) Describe the methods implemented for Instruction Pipelining. [6 M]
   b) Distinguish between linear pipelined processors and nonlinear pipelined processors. [6 M]

(OR)

7. Explain how instructions can be executed by a pipeline in an overlapped manner with neat sketch. [12 M]

UNIT IV

8. a) Discuss about the interconnection structure of a generalized multi processor system with neat block diagram. [6 M]
   b) Explain Multi port memory organizations for multi processors systems. [6 M]

(OR)

9. a) Explain about vector instruction types of Multi vector Computers. [8 M]
   b) Explain Hotspot problem. [4 M]

UNIT V

10. Discuss cache coherency problem and explain how it can be solved using Snoopy Bus Protocols. [12 M]

(OR)

11. Explain the following [12 M]
    a) Message Routing Schemes
    b) Deadlock and Virtual Channels

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