AR13 **Set-02**

Code No: 13MTE1012

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech II Semester Regular/ Supplementary Examinations, August – 2016

Energy Management
(Thermal Engineering)

Time: 3 Hours **Max Marks: 60**

Answer any FIVE questions
All questions carry equal marks

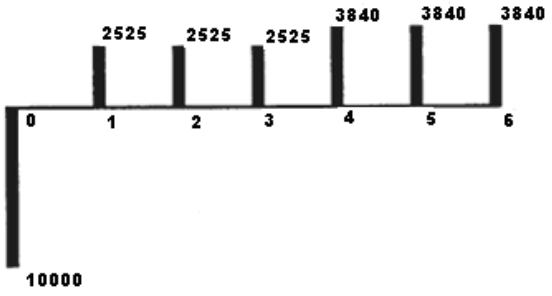
1. a) Define energy management? Explain need for energy management?
   b) Explain the role of energy manager in process industry. (6M+6M)

2. What do you mean by energy management program? Explain different components of energy management program. (12M)

3. a) How to conduct a detailed energy audit.
   b) State and explain the functional measuring instruments used for energy audit. (6M+6M)

4. a) Why should we conserve energy? What should be the energy strategy for the future of a nation?
   b) Discuss energy flow network with a suitable example. (6M+6M)

5. a) What is risk analysis and discuss the benefits of risk analysis?
   b)Installing thermal windows on a small office building is estimated to cost $10,000. The windows are expected to last six years and have no salvage value at that time. The energy savings from the windows are expected to be $2525 each year for the first three years and $3840 for each of the remaining three years. What should be the value of Minimum Attractive Rate of Return (MARR) for which the project worth using present worth measure will be zero?



(6M+6M)

6. a) Define and explain the followings
   i. Return on Investment (ROI)
   ii. Net Present Value (NPV).
   iii. Internal Rate of Return (IRR)

   b) Explain 'Simple Payback Period' method for financial analysis with its advantages and limitations. (6M+6M)
7. What is the need for energy consultant? Discuss the selection criteria for energy Consultant. (12M)
8. What is the use of Thermal Energy Storage (TES) system? Explain different types of TES methods.

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SET-1

AR13

Code No: 13MDE1004

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech II Semester Regular/ Supplementary Examinations, August – 2016

WIRELESS COMMUNICATION AND NETWORKS
(Digital Electronics & Communication Systems)

Time : 3 hours **Max Marks :60**

Answer any FIVE questions
All questions carry equal marks

1	a)	Explain in detail the network architecture for common channel signaling.	[6M]
	b)	Give an overview about the evolution of wireless networks.	[6M]
2	a)	Describe the multiple access technique in FDMA.	[6M]
	b)	Discuss the basic principle of CSMA and its implementation methods.	[6M]
3	a)	Compare and contrast FHSS and DHSS.	[6M]
	b)	Explain the concept and principle of DSSS with a neat diagram.	[6M]
4	a)	Describe and discuss the functions and operation of the routing methods in mobile IP.	[6M]
	b)	Draw the WAP protocol stack, explain each stack.	[6M]
5	a)	Discuss about various WLAN applications and requirements.	[6M]
	b)	Describe the IR transmission techniques with a neat sketch.	[6M]
6		Explain the following:	
	a)	HIPERLAN	[6M]
	b)	WPAN	[6M]
7	a)	Explain in detail about the routing techniques in wireless networks.	[6M]
	b)	Briefly write about ARDIS and RMD	[6M]
8	a)	Explain the protocol entities in WATM.	[6M]
	b)	Draw the state transition diagram for Bluetooth. Explain each state.	[6M]

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SET-1

AR13

Code No: 13MPE1010

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech II Semester Regular/ Supplementary Examinations, August – 2016

POWER ELECTRONIC CONTROL OF AC DRIVES
(Power Electronics & Electric Drives)

Time : 3 hours **Max Marks :60**

Answer any FIVE questions
All questions carry equal marks

1	a)	Explain closed loop speed control with slip regulation in voltage- fed inverter drive	[6M]
	b)	Discuss open loop volts/ hertz control of induction motor drives.	[6M]
2	a)	Explain current fed inverter control of Induction motor.	[6M]
	b)	Explains about independent current and frequency control of current source inverter drive.	[6M]
3	a)	Explains the operation of static Kramer drive with neat diagram.	[6M]
	b)	Explain static scherbius drive employed for induction motor with different modes of operation?	[6M]
4	a)	Explains the principle of vector control of induction motor drive.	[6M]
	b)	In which way Static Kramer control is different from Static Scherbius drive.	[6M]
5	a)	Explain the flux vector estimation with voltage model in direct method of vector control of Induction motor with block diagram.	[6M]
	b)	Describe about the implementation indirect vector control of induction motor.	[6M]
6		What are the types of control strategies employed for synchronous motor drives? Explain any two of control techniques in details?	[12M]
7	a)	Compare the difference between PMSM and BLDC motor drives.	[6M]
	b)	Explains the sinusoidal type of Brushless DC motor with current controlled DC servo drives?	[6M]
8	a)	Explain the operation of current controlled Variable Reluctance motor servo drive.	[6M]
	b)	Briefly discuss the construction of variable reluctance motor with Inductance profile.	[6M]

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AR13 **Set-01**

Code No: 13MVL1010

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

I M.Tech II Semester Regular/ Supplementary Examinations, August – 2016

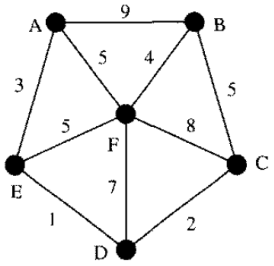
ALGORITHMS FOR VLSI DESIGN AUTOMATION
(VLSI System Design)

Time: 3 hours **Max. Marks: 60**

Answer any FIVE questions
All questions carry equal marks

1. (a) Discuss VLSI Design Problem with the help various design entities? (6M)
   (b) Describe Prim's algorithm for minimum spanning trees with the help of an example. (6M)

2. (a) Give a possible placement and routing solution for the following netlist using unit size placement problem. (4M)
   n1: A, B, F, G
   n2: B, E
   n3: D, E
   n4: A, C, D
   n5: C, D, F
   n6: C, E, F, G
   n7: D, F
   n8: F, G
   (b) Explain back tracking algorithm and solve for a optimal tour cost for a travelling sales man problem given below in the figure using backtracking algorithm. (8M)



3. (a) Explain breadth first search algorithm with the help of pseudo code (6M)
   (b) What is time complexity? Discuss about various algorithm's time complexities (6M)
4. (a) Explain about simulated annealing. (6M)
   (b) What is meant by layout compaction? Explain the applications of layout compaction. (6M)
5. (a) Write short notes on iterative placement algorithm (6M)
   (b) Explain about optimization problems in floor planning (6M)

6. What is simulation? Discuss about simulations performed at various levels of abstraction. (12M)

7. Explain the ROBDD principles. Obtain ROBDD for the following function. $f = (x_1 \oplus x_2).(x_3 \oplus x_4)$ (12M)

8. Write short notes on
   (a) High level transformations (4M)
   (b) Physical design cycle for FPGA's (4M)
   (c) MCM technologies (4M)

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AR13 **Set-01**

CODE: 13MCS1008

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(Autonomous)

I M.Tech II Semester Regular / Supplementary Examinations, August–2016

COMPUTER NETWORKS

(Computer Science and Engineering)

Time: 3 Hours **Max. Marks: 60**

Answer any FIVE questions
All questions carry EQUAL marks

1. a) Explain TCP/IP reference model. (6M)
   b) Explain different network topologies. (6M)

2. a) What is transmission media and explain twisted pair cables. (6M)
   b) Write short notes on ISDN. (6M)

3. a) Explain selective repeat sliding window protocol. (8M)
   b) What is a bridge and what are the uses of bridges. (4M)

4. a) What is routing and explain Hierarchical routing and what are its advantages. (6M)
   b) Explain congestion control algorithms. (6M)

5. Explain TCP protocol. (12M)

6. Explain DNS. (12M)

7. a) Write short notes on email. (6M)
   b) Write short notes on www. (6M)

8. a) Explain Ethernet technology. (6M)
   b) Write short notes on ATM AAL Layer. (6M)

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AR13

Code No: 13MSE1012 SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech II Semester Regular/ Supplementary Examinations, August – 2016

COMPUTER APPLICATIONS AND CAD

(STRUCTURAL ENGINEERING)

Time: 3 Hours **Max Marks : 60**

Answer any FIVE questions
All questions carry equal marks

1	Specify the difference between the conventional and CAD Design.	
2	Enumerate the types of computer devices. Explain in detail about each in detail.	
3	Distinguish between solid modelling and wire modelling. Specify few advantages and dis advantages of each.	
4	Explain in detail the problems in digital images.	
5	List out all the graphic output devices and explain in brief about each device.	
6	Explain types of surface modelling and also write the advantages and disadvantages of surface modelling.	
7	Write a C program for determination of shear force and Bending Moment for Point Load on simply supported beam.	
8	Derive a Solution for a Raft foundation On An elastic subgradeUsing Finite difference method.	

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