

SET-1

AR16

Code No: 16MTE1012

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

I M.Tech. II Semester Regular & Supplementary Examinations, August-2018

ENERGY MANAGEMENT

(THERMAL ENGINEERING)

Time : 3 hours

Max Marks :60

Answer any FIVE questions
All questions carry equal marks

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|----|--|-------|
| 1. | a) Explain the Role of Energy Managers in Industries. | [6M] |
| | b) State with reasons the need of Energy Audit in any industry | [6M] |
| 2. | a) what are the prerequisites of the successful energy management programme | [6M] |
| | b) What are the benefits for industry through implementing energy efficiency programme? | [6M] |
| 3. | a) Define Energy Audit as per the act 2001 | [4M] |
| | b) Explain three major energy audit stages in details | [8M] |
| 4. | a) Explain various energy conservation measures in process industries | [6M] |
| | b) Explain the critical assessment of energy usage. | [6M] |
| 5. | Define depreciation and explain any two depreciation methods by considering an industry. | [12M] |
| 6. | Explain the different project Evaluation methods | [12M] |
| 7. | Compose the components existing in wind energy with neat diagrams | [12M] |
| 8. | Describe different types of solar collectors with neat sketch | [12M] |

AR16

Set-01

16MPE1010

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

I M.Tech. II Semester Regular & Supplementary Examinations, August-2018

**Power Electronic Control of AC Drives
(Power Electronics & Drives)**

Time: 3 Hours

Max Marks: 60

**Answer any FIVE questions
All questions carry EQUAL Marks**

1. a. Obtain the equivalent circuit model of an induction motor drive.
b. Explain the speed control method of induction motor with slip regulation.
2. a. Explain various slip power recovery drives.
b. Explain the modes of operation of static scherbius drive.
3. a. Show that variable frequency induction motors drive, develops at all frequencies the same torque for a given slip – speed when operating at constant flux.
b. Classify and explain the PWM techniques used in voltage fed drives.
4. a. Explain the general operation of a three step six pulse inverter for current fed drives
b. Explain the torque slip characteristics of variable reluctance motor drive.
5. a. Explain the principle of vector control of induction motor drive.
b. Explain current controlled VFI method of IM drive.
6. a. Explain the V/f control scheme of IM drives.
b. Explain the operation of current control variable reluctance motor servo drive.
7. a. Obtain the self controlled model of a synchronous motor.
b. Explain the direct vector control scheme employed with rotor flux orientation.
8. a. Explain the maximum power factor control scheme of PMSM drive.
b. Explain the working of three phase full wave brushless DC motor.

SET-1

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Code No: 16MVL1010

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

I M.Tech. II Semester Regular & Supplementary Examinations, August-2018

**ALGORITHMS FOR VLSI DESIGN AUTOMATION
(VLSI System Design)**

Time: 3 hours

Max. Marks: 60

**Answer any FIVE questions
All questions carry equal marks**

1. What are the most important entities in VLSI Design? Explain about each of them? [12M]
2. Explain the term "Computational complexity" related to VLSI design automation in detail. [12M]
3. a) Explain the routing problems in VLSI design. [6M]
b) Explain different Simulation Based Placement Algorithms [6M]
4. a) Write a short note on gate level modeling [6M]
b) Explain switch level simulation [6M]
5. a) Discuss the basic issues and terminology employed in logic synthesis in VLSI design. [6M]
b) Explain two-level logic synthesis [6M]
6. a) Explain about assignment and scheduling relevant to High-level Logic synthesis. [6M]
b) Write about internal representation of the input algorithm [6M]
7. a) Explain about various FPGA technologies. [6M]
b) What is the role of partitioning and routing for segmented and staggered models? Explain. [6M]
8. Explain MCM physical design cycle in detail. [12M]

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

I M.Tech. II Semester Regular & Supplementary Examinations, August-2018

**SOFTWARE ENGINEERING
(Computer Science and Engineering)**

Time: 3 Hours

Max Marks:60

Answer any FIVE questions
All questions carry EQUAL marks

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| 1. (a) | Explain software engineering – a layered technology? | 6M |
| (b) | Explain personal and team process models? | 6M |
| 2. (a) | Explain the software requirements document? | 6M |
| (b) | Explain Requirements Management Process? | 6M |
| 3. (a) | Explain the Change Management Process? | 6M |
| (b) | How are requirements validated? Explain. | 6M |
| 4. (a) | What is software architecture ? | 6M |
| (b) | What is architectural pattern. Explain the architectural styles and patterns? | 6M |
| 5. (a) | Write in detail about the golden rules for user interface design ? | 6M |
| (b) | Give the interface design steps and explain them. | 6M |
| 6. (a) | What is Basis path testing, Explain | 6M |
| (b) | Explain the metrics for source code. | 6M |
| 7. (a) | Mention the various software risks in detail. | 6M |
| (b) | Explain software quality concepts . | 6M |
| 8. (a) | Write short note on RMMM plan. | 6M |
| (b) | Compare and contrast Reactive and proactive risk strategies. | 6M |

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

I M.Tech. II Semester Regular & Supplementary Examinations, August-2018

**COMPUTER APPLICATIONS AND CAD
(Structural Engineering)**

Time: 3 Hours

Max Marks:60

Answer any FIVE questions
All questions carry EQUAL marks

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| 1. | Distinguish between the capabilities of designer and computer applications | 12 M |
| 2. | Write a detailed note on the functioning of
i) Printers ii) CPU | 12 M |
| 3. | What is the role of database management in CAD? Also discuss how database structures play a major role in integrating hardware and software of CAD | 12 M |
| 4. a) | Write the applications of graphic devises in detail | 6 M |
| b) | How the representation of images in computers takes place. | 6 M |
| 5. | Write a STAAD pro program for the analysis of simply supported beam with a point load | 12 M |
| 6. | Explain with a detailed algorithm the analysis procedure of a cantilever beam with uniformly distributed load | 12 M |
| 7. | Discuss the details involved in element and structure stiffness formulation | 12 M |
| 8. | Explain the following
a) Boundary conditions b) Applications of jointed trusses | 12 M |