AR16

CODE No: 16MTE1009 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

I M.Tech I Semester Regular Examinations, January-2017

NONCONVENTIONAL ENERGY SOURCES

(Thermal Engineering)

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

Answer any FIVE Questions

All questions carry EQUAL marks

1	(a)	What is meant by renewable energy sources? Give its principle and advantages	[6M]
	(b)	Explain the principle of conversion of solar energy into heat?	[6M]
2		Explain the basic difference between an active and passive Solar heating system and with the help of schematic diagram explain solar passive space cooling system through ventilation.	[12M]
3	(a)	Define and classify geothermal sources.	[6M]
	(b)	What are the limitations of flashed steam system and what are the advantages of double flash system.	[6M]
4	(a)	Describe the principle of working and constructional details of a basic thermionic generator.	[6M]
	(b)	Explain various methods of production and properties of hydrogen gas	[6M]
5	(a)	Explain briefly about biomass conversion technologies?	[6M]
	(b)	What is power coefficient? Explain in detail.	[6M]
6	(a)	What is the basic principle of wind energy conversion? Derive the expression for the power developed due to wind.	[6M]
	(b)	Discuss the advantages and disadvantages of wind energy conversion systems	[6M]
7	(a)	Explain the principle of Ocean Thermal Energy Conversion.	[6 M]
	(b)	Write short nodes on radiation measuring instruments.	[6 M]
8		Write short notes on a) Tidal Power	[6M]
		b) Wave power systems	[6M]

***

AR16

CODE: 16MDE1004 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech. I Semester Regular Examinations, January-2017

RADAR SIGNAL PROCESSING
Digital Electronics And Communication Systems

Time: 3 Hours Max Marks: 60

Answer any FIVE questions
All questions carry EQUAL marks

1.	(a)	Explain about general Radar range equation?	6
	(b)	What is Beacon? Write the Repeaters equation of a Radar?	6
2.	(a)	Derive an expression for matched filter response of a non white noise?	6
	(b)	Write the properties of matched filter response?	6
3.	(a)	Explain about clutters and jamming?	6
	(b)	Write a method that can solve the multi path problem in Radar?	6
4.	(a)	Explain about sampling in slow time dimension of radar signal?	6
	(b)	Explain the sampling process for spatial and angle domains?	6
5.	(a)	Explain matched filter response for a simple pulse?	6
	(b)	Write the properties of Radar ambiguity function?	6
6.	(a)	Derive an expression for Doppler response of a pulse burst wave?	6
	(b)	Explain the stretch processing?	6
7.	(a)	What is the detection criteria in RADAR? Write about Neyman – Pearson observer?	6
	(b)	What is MTI in Radars?	6
8.	(a)	Explain about Barker codes?	6
	(b)	Write the distortion effects on linear FM signals?	6

***

AR16

CODE: 16MPE1008 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech I Semester Regular Examinations, January-2017

NON-CONVENTIONAL ENERGY SOURCES AND APPLICATIONS
(Power Electronics And Drives)

Time: 3 Hours Max Marks: 60

Answer any FIVE questions
All questions carry EQUAL marks

1.		What are the advantages and limitations of renewable energy sources? Explain the prospects of non-conventional energy sources in India.	12M]
2.		What are the different types of vertical axis wind machines? Explain about any two in detail.	[12M]
3.		With neat sketch explain operation of open cycle and closed cycle Ocean Thermal Energy Conversion systems.	[12M]
4.		With a neat diagram explain the working principle of biogas plant. List the factors affecting biogas generation.	[12M]
5.		Illustrate by a neat diagram, explain the basic components of a MHD generator. What special features must such a system have for efficient application?	[12M]
6.		Explain the concept of Wind – Diesel hybrid energy system with neat sketch.	[12M]
7.	(a)	With neat diagram explain the working principle of solar water heater.	[4M]
	(b)	What are the problems associated with wind power.	[4M]
	(c)	Explain the principle of operation of any one wave energy conversion device.	[4M]
8.	(a)	What are the various types of biogas plants? Mention their merits and de-merits.	[4M]
	(b)	Discuss advantages and limitations of fuel cell.	[4M]
	(c)	What are the advantages and disadvantages with wind – photo voltaic hybrid system?	[4M]

****

AR16

CODE: 16MVL1008 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech I Semester Regular Examinations, January-2017

EMBEDDED AND REAL TIME SYSTEMS
(VLSI System Design)

Time: 3 Hours Max Marks:60

Answer any FIVE questions
All questions carry EQUAL marks

1.	(a)	Discuss about optimizing custom single purpose processors.	6
	(b)	What is the trade off between various design metrics with respective processor technologies and design technologies?	6
2.	(a)	With neat diagram explain the basic architecture of general purpose processors.	6
	(b)	Explain the programmer's view of the general purpose processors?	6
3.	(a)	Discuss about FSM and FSMD.	6
	(b)	Explain the data flow model with example.	6
4.	(a)	Write a shot note on RS232 & RS485.	6
	(b)	Explain IEEE 802.11 protocol.	6
5.	(a)	What are semaphores? How does use of a semaphore differ from a mutex?	6
	(b)	Explain how event registers used in RTOS.	6
6.	(a)	Explain the priority inversion problem in task scheduling.	6
	(b)	Explain the functions of Memory management unit in RTOS	6
7.	(a)	Explain the terms "mailbox and piles" relevant to RTOS in an embedded system.	6
	(b)	Write difference between the i) Computation models and Languages (ii) Textual language and Graphical language.	6
8.	(a)	Name few real time systems. Explain any one real time system in detail.	6
	(b)	Write the features of RTOS.	6

***

AR16

CODE: 16MCS1006 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech I Semester Regular Examinations, January-2017

ADVANCED COMPUTER ARCHITECTURE
Computer Science Engineering

Time: 3 Hours Max Marks:60

Answer any FIVE questions
All questions carry EQUAL marks

1.	(a)	Explain the changing phases of computing and task of computer designer.	6M
	(b)	Explain about Flynn's classification of parallel computers.	6M
2.	(a)	What is Pipeline? How to increase the cache band width using pipeline.	6M
	(b)	Explain about basic memory hierarchy.	6M
3.	(a)	Briefly explain how operations are performed in the Instruction set.	5M
	(b)	Elaborate the classic five staged pipeline RISC processor with neat diagram.	7M
4.		Explain in detail about asynchronous and synchronous models of linear pipe line processors.	12M
5.	(a)	Differentiate between Crossbar Switch and Multiport Memory.	6M
	(b)	What are the problems encountered in collision free scheduling.	6M
6.		Explain in detail about vector access memory schemes	12M
7.	(a)	What are vector instruction cycle types?	6M
	(b)	What is multi processor cache coherence?	6M
8.		Explain in detail about multicast routing algorithm	12M

****

AR16

CODE: 16MSE1008 SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech I Semester Regular Examinations, January-2017

ADVANCED CONCRETE TECHNOLOGY
(Structural Engineering)

Time: 3 Hours Max Marks: 60

Answer any FIVE questions
All questions carry EQUAL marks

1. (a) List the types cement and explain each of them briefly.
   (b) What do you understand by graded aggregate? How do you conduct Los Angels Abrasion Test for Aggregate?

2. (a) What are types of chemical admixtures will you used to increase and reduce the initial setting time of concrete? What type of chemical admixture will you used to increase the workability of concrete?
   (b) Enlist the types of admixtures and discuss about chemical admixtures.

3. (a) Discuss about the various Non-destructive tests of hardened concrete.
   (b) Discuss the need and advantages of Non-destructive testing.

4. (a) What is difference the between repair and rehabilitation?
   (b) What is meant by Rehabilitation? Explain about their strategies.

5. (a) Explain the classification of repair materials with selection criteria?
   (b) Discuss examples of rehabilitation techniques.

6. (a) Explain about jacketing strengthening technique.
   (b) Discuss about different classification of strengthening techniques?

7. (a) Discuss the connection stabilization and strengthening crack stabilization.
   (b) Discuss the correct procedures to be followed on doing shear and flexural strength for columns and beams.

8. (a) Explain about fibre reinforced concrete.
   (b) Explain the Mechanical Properties of fibre reinforced concrete.

****