AR16

CODE: 16MTE1009 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech. I Semester Regular & Supplementary Examinations, February-2018

NON CONVENTIONAL ENERGY RESOURCES
(Thermal Engineering)

Time: 3 Hours Max Marks: 60

Answer any FIVE questions
All questions carry EQUAL marks

1.		What are the prospects of non –conventional energy sources in India?	12M
2.	(a)	Explain non pressurized natural solar water heating system.	6M
	(b)	Write short notes on solar distillation.	6M
3.		Write short notes on hydrothermal (convective) resources.	12M
4.	(a)	Explain in detail about the nuclear fusion reactions.	6M
	(b)	Explain seeded inert gas MHD systems.	6M
5.	(a)	Explain biomass conversion technologies.	6M
	(b)	Explain the biogas plant with neat diagram.	6M
6.	(a)	Explain the applications of fuel cells.	8M
	(b)	Explain Magma resources.	4M
7.	(a)	Explain the factors affecting bio-digestion.	8M
	(b)	Discuss about the methods of maintaining biogas production.	4M
8.	(a)	Explain closed OTEC cycle.	6M
	(b)	Explain the double basin arrangement for tidal power plant.	6M

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AR16

CODE: 16MPE1008 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech. I Semester Regular & Supplementary Examinations, February-2018

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.		Enumerate the different types of concentrating type solar collectors. Explain about any three in detail.	[12M]
2.		What are the different types of wind machines? Explain their advantages and disadvantages.	[12M]
3.		What is wave energy? Explain the principle of operation a wave energy conversion system with neat sketch.	[12M]
4.		What are the various types of biogas plants? Explain about any one in detail.	[12M]
5.		Classify fuel cells. Explain the principle of operation of a fuel cell with neat sketch.	[12M]
6.		Explain the concept of wind – photo voltaic hybrid system with neat sketch.	[12M]
7.	(a)	Write a short note on solar cookers.	[4M]
	(b)	What is the basic principle of wind energy conversion system?	[4M]
	(c)	Explain the basic principle of tidal power generation.	[4M]
8.	(a)	What are the main problems related to biogas plants?	[4M]
	(b)	Discuss advantages and limitations of fuel cell.	[4M]
	(c)	Explain about the necessity of hybrid systems.	[4M]

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AR16

CODE: 16MVL1008 **SET-1**

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)	Explain about various design metrics used in Embedded system design.	[6M]
	(b)	Compare general purpose processors with single purpose processors.	[6M]
2.	(a)	Write about Instruction execution and pipelining concepts of general purpose processors.	[6M]
	(b)	Explain about Development environment of a general purpose processor.	[6M]
3.	(a)	Explain about concurrent process model with an example	[6M]
	(b)	Describe the Communication among processes of a general purpose processor.	[6M]
4.	(a)	Write briefly about Telecommunication standards RS422 and RS485.	[6M]
	(b)	Explain about Bluetooth Protocol Architecture.	[6M]
5.	(a)	What are the different types of semaphores present in parallel programming environment?	[6M]
	(b)	Explain briefly about a task scheduler in areal time embedded system.	[6M]
6.	(a)	What is a deadlock condition .When does this occur. Explain in detail.	[6M]
	(b)	Explain how kernels provide mailbox service to various tasks.	[6M]
7.	(a)	Discuss briefly about priority inversion problem and explain how to avoid it.	[6M]
	(b)	What are different synthesis processes adopted in embedded system design?	[6M]
8.	(a)	Explain briefly about various operating systems used in embedded systems.	[6M]
	(b)	Explain briefly about verification approaches adopted in embedded system design.	[6M]

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AR16

CODE: 16MCS1006 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech. I Semester Regular & Supplementary Examinations, February-2018

ADVANCED COMPUTER ARCHITECTURE
(Computer Science and Engineering)

Time: 3 Hours Max Marks:60

Answer any FIVE questions
All questions carry EQUAL marks

1. (a) Draw the Tree diagram showing the architectural evolution from sequential scalar computers to vector processors and parallel computers and explain.
   (b) Describe three shared memory multiprocessor models.

2. (a) Explain the basics of memory hierarchy
   (b) Justify how a Non blocking cache is used to Increase bandwidth
   Explanation of Non blocking cache and an example

3. (a) Draw a neat diagram and explain the execution cycle of a typical Instruction
   (b) Explain in detail CISC and RISC Architecture

4. (a) With a neat diagram explain a dynamic pipeline with feed forward and feedback connections for two different functions
   (b) Explain the terms speedup, efficiency and throughput

5. (a) What is the use of multistage networks? Explain omega and butterfly multistage networks
   (b) Explain briefly about different vector access memory schemes

6. (a) Explain the functionality of a crossbar switch in tightly coupled systems
   (b) List and explain past and present supercomputers in brief

7. (a) Explain briefly the generations of electronic computers
   (b) List and explain elements of a modern computer system

8. What is cache coherence and why it is important in shared memory multiprocessor systems? How the problem can be resolved with a snoopy cache controller

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AR16

CODE: 16MSE1008 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech. I Semester Regular & Supplementary Examinations, February-2018

ADVANCED CONCRETE TECHNOLOGY
(Structural Engineering)

Time: 3 Hours Max Marks: 60

Answer any FIVE questions
All questions carry EQUAL marks

1. (a) List the laboratory tests on cement and explain each of them briefly.
   (b) How do you conduct aggregate crushing value and impact value test?

2. (a) Discuss the need for workability agents and the admixtures used for improving workability.

   (b) Enlist the types of admixtures and discuss about physical admixtures

3. (a) What are the types of Non-destructive testing? Explain briefly about each.
   (b) Explain briefly about Ultrasound pulse velocity test and Rebound hammer test. Which is the accurate method among them?

4. (a) What do you understand by repair and rehabilitation?
   (b) Explain the strategies of rehabilitation of structures.

5. (a) Explain the material selection criteria for repair of structures.
   (b) What are different types of rehabilitation techniques? Explain each briefly.

6. (a) What is the basic difference between repair, rehabilitation and strengthening?
   (b) What are the different types of strengthening techniques? Explain each briefly.

7. (a) How do you strengthen the beam flexural and shear strength? Explain step by step procedure.

   (b) How do you strengthen the column strength? Which method you will obtain to get significant strength?

8. (a) How fibre reinforced concrete different than conventional concrete? Explain briefly.

   (b) Explain the applications of fibre reinforced concrete?

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AR16

CODE: 16MDE1004 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I M.Tech. I Semester Supplementary Examinations, February-2018
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 the process of Radar detection with noise interference?	6
	(b)	Draw and explain the operation of Bi-static Radar?	6
2.	(a)	Explain about Radar cross sections?	6
	(b)	Explain the simplified approach to Doppler Shift?	6
3.	(a)	Explain the sampling criteria for Radar signal?	6
	(b)	Explain the operation of Quantization in Radars?	6
4.	(a)	Explain the matched filter response for moving targets?	6
	(b)	Explain the ambiguity function of a simple pulse?	6
5.	(a)	What is pulse pair processing and explain it?	6
	(b)	Explain about pulse Doppler processing?	6
6.	(a)	Explain about Threshold detection of Radar signals?	6
	(b)	Explain in details about pulse cancellers?	6
7.	(a)	What is the use of maximum length sequences?	6
	(b)	Draw and explain the of binary Phase coded pulse compression?	6
8.	(a)	Explain the process of generation and decoding of fm waves?	6
	(b)	Write the resolution properties of frequency coded pulses?	6

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