Code : 4GC34

R-14

II B.Tech. I Semester Supplementary Examinations May/June 2016
Environmental Science
(Common to ECE & IT)

Max. Marks: 70   **Time: 03 Hours**

Answer *all five* units by choosing one question from each unit (5 x 14 = 70Marks)
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UNIT-I

1. a) Explain the problems associated with ecosystem due to over exploitation   7M
    b) Describe in general the environmental crisis caused by population growth   7M

OR

2. a) Environmental pollution is a global issue, discuss.   7M
    b) Write a note on the role of institutions in protecting the environment.   7M

UNIT-II

3. a) What are the problems faced by forest and tribal people due to deforestation.   7M
    b) What are the causes for floods and how floods can be prevented   7M

OR

4. a) Write short notes on land degradation and soil erosion   7M
    b) Write in detail on alternative energy resources and their usage   7M

UNIT-III

5. a) Explain the concept of ecosystem and list the types of ecosystems   7M
    b) Explain the food chains, webs and ecological pyramids with suitable examples   7M

OR

6. a) Give a brief account of hot spots of biodiversity in India.   7M
    b) What are the threats to biodiversity? How it will be protected.   7M

UNIT-IV

7. a) What is pollution? Write a note on water pollution and its prevention.   7M
    b) Write short notes on noise pollution and soil pollution   7M

OR

8. a) What is meant by nuclear hazard? Discuss one case study on nuclear hazard   7M
    b) Discuss about the control measures of industrial wastes   7M

UNIT-V

9. a) Write a note on different methods of rain water harvesting observed by you   7M
    b) What is waste land reclamation? Explain   7M

OR

10. a) Explain in detail about the air act (prevention and pollution)   7M
    b) Discuss the human welfare with reference to HIV/AIDS   7M

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Code : 4G236

R-14

II B.Tech. I Semester Supplementary Examinations May/June 2016
Electrical Engineering and Electronics Engineering
(Common to ME, CSE & IT)

Max. Marks: 70   Time: 3 Hours
Answer *all five* units by choosing one question from each unit (5 x 14 = 70Marks)
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UNIT-I

1. a) Three resistances of R ohms are connected in delta. Transform it into an equivalent star with resistances R_1, R_2 and R_3. — 7M

    b) Define the terms active elements, bilateral elements, linear elements and passive elements with examples. — 7M

OR

2. a) Derive the expression for equivalent inductance of two parallel connected inductors. — 7M

    b) Three capacitors of 2 mF, 5 mF and 10 mF are connected in series. Find the equivalent capacitance. — 7M

UNIT-II

3. a) Derive E.M.F. equation of a d.c generator. — 7M

    b) Explain the operation of three point starter. — 7M

OR

4. a) Derive the condition for maximum efficiency of dc motor. — 7M

    b) Draw the equivalent circuits and write voltage current relations for separately excited dc motor and dc shunt motor. — 7M

UNIT-III

5. a) Explain the principle of operation of single phase transformer. — 7M

    b) Explain how equivalent circuit parameters are determined for open circuit and short circuit tests. — 7M

OR

6. a) Explain the principle of operation of a three phase induction motor with relevant diagrams. — 7M

    b) Explain the operation of alternator and derive its emf equation. — 7M

UNIT-IV

7. a) Explain the working of full wave rectifier with necessary diagrams. — 9M

    b) What are the applications of diode rectifiers? — 5M

OR

8. a) What is feedback amplifier? Explain the operation of feedback amplifier. — 7M

    b) Derive the expressions for voltage gain, current gain, output impedance and input impedance of a CE amplifier. — 7M

UNIT-V

9. a) What are the applications of induction heating? — 5M

    b) Explain about induction heating with necessary diagrams. — 9M

OR

10. a) List the applications of dielectric heating. — 5M

    b) Explain the working of CRO with relevant diagrams. — 9M

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Code : 4G131

II B.Tech. I Semester Supplementary Examinations May/June 2016
Advanced Data Structures Through C++
(Common to CSE & IT)

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

Answer *all five* units by choosing one question from each unit (5 x 14 = 70Marks)
****

UNIT-I

1.	a)	What are the four basic properties are of object Oriented Paradigm?	8M
	b)	Compare public and private derivation of a class from base class.	6M

OR

2.	a)	What is the significance of exception in C++?	4M
	b)	Explain exception handling in C++.	10M

UNIT-II

3.	a)	What is polymorphism?	4M
	b)	How polymorphism can be used in function overloading in C++?	10M

OR

4.	a)	Explain runtime polymorphism using virtual functions in C++.	10M
	b)	Explain significance of time complexity and space complexity.	4M

UNIT-III

5.	a)	What are the advantages of queues?	4M
	b)	Illustrate an implementation of queue ADT in C++ with example.	10M

OR

6.	a)	What is double hashing?	4M
	b)	Compare of different hashing techniques.	10M

UNIT-IV

7.	a)	What are the properties of binary tree?	4M
	b)	Explain binary tree traversal methods.	10M

OR

8.	a)	What are the advantages of ADT?	4M
	b)	Explain Multi-way merge and Poly-phase merge.	10M

UNIT-V

9.	a)	What are the advantages of splay trees?	2M
	b)	Compare different Search Trees.	12M

OR

10.	a)	What are the advantages of brute force method?	4M
	b)	Explain Moore algorithm.	10M

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Code : 4G132

II B.Tech. I Semester Supplementary Examinations May/June 2016
Digital Logic Design
(Common to CSE & IT)

Max. Marks: 70   Time: 3 Hours
Answer *all five* units by choosing one question from each unit (5 x 14 = 70Marks)
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UNIT-I

1. a) (i) Convert $(0.513)_{10}$ to octal   4M
        (ii) $(306.D)_{16}$ to Binary   4M
    b) Using 10's complements, Subtract 72532-3250 and 3250-72532   6M

OR

2. a) Proof the theorems
        i) x+x=x   3M
        ii) x+xy=x   3M
    b) Explain about canonical and standard forms   8M

UNIT-II

3. a) Simplify the Boolean Function F(A,B,C,D,E)=(0,2,4,6,9,13,21,23,25,29,31)
        Using K-Map   14M

OR

4. a) What are the universal Gates? Explain about universal gates   7M
    b) Explain about parity generation and checking?   7M

UNIT-III

5. a) Explain about decimal adder with neat sketch?   7M
    b) Explain About Binary Multiplier with example?   7M

OR

6. a) Explain about magnitude comparator with 4-bit magnitude comparator? 7M
    b) Write a short note about HDL for combinational circuits?   7M

UNIT-IV

7. a) What is flip – flop and Explain about flip- flops?   7M
    b) Explain about shift registers?   7M

OR

8. a) Explain about Ring Counter?   7M
    b) Explain about Johnson Counter?   7M

UNIT-V

9. a) What is Race Conditions and Explain it?   7M
    b) Explain about design Procedure of Asynchronous Sequential Logic?   7M

OR

10. a) Explain about Programmable Array logic?   7M
    b) Explain about Programmable logic Array?   7M

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Code: 4G133

R-14

II B. Tech. I-Semester Supplementary Examinations May/June 2016
Principles of Programming Languages
(Common to CSE & IT)

Max. Marks: 70   Time: 3 Hours
Answer *all five* units by choosing one question from each unit (5 x 14 = 70Marks)
****

UNIT-I

1. a) Explain Imperative, Object Oriented, Functional programming.   7M
    b) Explain various categories of languages.   7M

OR

2. a) Explain the processes of Compilation.   7M
    b) Discuss about various programming domains and their associated languages.   7M

UNIT-II

3. a) Distinguish between name type compatibility and structure type computability. 7M
    b) Explain Short Circuit evaluation and mixed mode assignment?   7M

OR

4. a) Explain the concept of late binding and early binding.   7M
    b) Discuss in detail the design issues for arithmetic expressions.   7M

UNIT-III

5. a) Explain pass by result parameter passing technique in detail.   7M
    b) Define Co-routines? Write about overloaded subprograms.   7M

OR

6. a) Discuss the design issues of sub programs? Define Overloaded operators.   7M
    b) Explain the design issues and characteristics of subprograms.   7M

UNIT-IV

7. a) What are the languages design issues for abstract data types?   7M
    b) What is meant by subprogram level concurrency? Explain.   7M

OR

8. a) What is the difference between checked and unchecked exception in JAVA?   7M
    b) How user defined exception defined in ADA?   7M

UNIT-V

9. a) Discuss about basic elements of PROLOG.   7M
    b) Give the internal representation of LISP lists and explain in detail about it. 7M

OR

10. a) Explain some of the important functions of LISP.   7M
    b) Discuss in detail about the different data structures that are present in LISP
       with suitable examples?   7M

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