

B.Tech. (CSE/IT) (II Yr.)

Total Pages : 3

Roll No.

Course No. : EC-219 (CSE/IT)

M-V/265

**Second Year B.Tech. of the Four Year
Integrated Degree Course Examination, 2014-15
(Computer Science Engineering and Information
Technology)**

SEMESTER-I

ANALOG ELECTRONICS

Time : Three Hours

Maximum Marks : 50

*“Do not write anything on question paper except
Roll Number otherwise it shall be deemed as an act
of indulging in use of unfair means and action shall
be taken as per rules.”*

- (i) Attempt **five** questions in all.
- (ii) The Question Paper has **four** Units. Each unit has **two** questions.
- (iii) Attempt at least **one** question from each Unit.
- (iv) Answer should be to the point.
- (v) All questions carry equal marks.
- (vi) Assume suitable data, if necessary and indicate the same clearly.

M-V/265/I/2014-15/130/ZZ/241

P. T. O.

UNIT-I

1. Explain the following with respect to transistor use as an amplifier at high frequencies. 7

(a) Miller Effect

(b) Giacoletto Model. 10

2. Calculate the mid-band gain and bandwidth of each state, if it is desired to build an audio amplifier with a passband of 20Hz to 20 KHz and a mid-band gain of 64000. Assuming that three stages have been used in cascade for this purpose. 10

UNIT-II

3. Derive the expression for R_{if} and R_{of} for Voltage Shunt Feedback Amplifier (using in general block diagram). 10

4. Explain the advantages and disadvantages of negative feedback. Also explain the Feedback Amplifier with the help of suitable block diagram. 10

UNIT-III

5. Discuss how the efficiency of the class A amplifier is improved by the transformer coupled configuration. Define conversion efficiency and determine the maximum value of it for series fed class A power amplifier. 10

6. What is coefficient of coupling in a double tuned amplifier? Discuss its effect on the frequency response. 10

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UNIT-IV

7. Explain the construction and working of Wien Bridge oscillator and also discuss how the negative feedback is exhibited by it. 10
8. Why Integrator circuits are more preferred over differentiator circuits? Derive the expression for the output of Adder (using OP-AMP) in Non-inverting mode. 10

B.Tech. (CSE) (II Yr.)

Total Pages : 3

Roll No.

Course No. : CS-214

M-V/229

Second Year B.Tech. of the Four Year Integrated
Degree Course Examination, 2014-15

(Computer Science Engineering)

SEMESTER-I

PRINCIPLES OF PROGRAMMING LANGUAGES

Time : Three Hours

Maximum Marks : 80

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M-V/229/I/2014-15/70/ZZ/195

P. T. O.

UNIT-I

1. (a) Explain the features of the good Programming Languages. 8
- (b) Explain the concept of the Virtual Computers. 8
2. (a) What is impact of the machine architecture while designing a Programming Language. 8
- (b) Explain the term binding and the binding time with an example. 8

UNIT-II

3. (a) Explain the difference between Syntax and Semantics of the language. 8
- (b) Explain the different stages in the translation. 8
4. (a) What are scalar and composite data types. 8
- (b) Explain the type checking and type conversion for a data type. 8

UNIT-III

5. (a) Explain the abstract data type and its importance in the programming languages. 8
- (b) Explain the concept of the inheritance in Programming Languages. 8
6. Explain the following term in brief: $4 \times 4 = 16$
 - (a) Encapsulation

- (b) Implicit
- (c) Polymo
- (d) Structu

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- (b) Implicit Sequence Control
- (c) Polymorphism
- (d) Structured Data Type.

UNIT-IV

7. (a) What are the different attributes of the data control. 8
- (b) Explain the subprogram sequence control. 8
8. Write short notes (any two) 8x2=16
- (a) Heap Storage management
 - (b) Stack Storage Management
 - (c) Structured Programming Languages and Object Oriented Programming Languages.
 - (d) Garbage Collection.

B.Tech. (CSE) (II Yr.)

Total Pages : 4

Roll No.

Course No. : CS-213 (CS)

M-V/228

Second Year B.Tech. of the Four Year Integrated
Degree Course Examination, 2014-15

(Computer Science Engineering)

SEMESTER-I

OBJECT ORIENTED PROGRAMMING WITH C++

Time : Three Hours

Maximum Marks : 50

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P. T. O.

M-V/228/I/2014-15/70/ZZ/194

UNIT-I

1. (a) What is object oriented programming? Explain the primitive data types in C++. 4.
- (b) When will you make a function inline? How does an inline function differ from a preprocessor macro? Explain with an example.
- (c) Compare break, continue, goto and exit statements. 4+4+2 5.

2. Write short notes (any four): 2.5×4=10

- (i) Structure of C++ program
- (ii) Storage classes
- (iii) Defining member functions
- (iv) Default arguments
- (v) Classes and objects. 6.

UNIT-II

3. (a) What is a constructor? List some of the special properties of constructor functions. Also give an example of copy constructor. 7.
- (b) How an object may be used as a function argument? Explain with an example. 6+4

4. (a) What is operator overloading? Define a class String. Use overloaded == operator to compare two strings.
- (b) What is a linked list? Explain and implement functionality for insertion and deletion of a node in linked list using C++. 5+5

UNIT-III

5. (a) What does inheritance mean in C++? What are the different forms of inheritance? Give example for each.
- (b) Explain 'derived class constructor' with suitable example. 5+5
6. (a) What is a friend function? What are the merits and demerits of using friend function? Give an example of friend function.
- (b) What is virtual function? Why do we need virtual functions? Explain with an example. 5+5

UNIT-IV

7. (a) What is a stream? Describe the features of I/O system supported by C++.
- (b) How the cin and cout operators can be overloaded? Implement this using C++ programme.
- (c) Write a short note on multi-file programs and project. 3+5+2

P.T.O.

Q. (a) Write a function template for finding the minimum value contained in an array.

(b) What is an exception? How is an exception handled in C++? Write a program containing a possible exception. Use a try block to throw it and a catch block to handle it properly.

B.Tech. (CS

M-V/264

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B.Tech. (CSE) (II Yr.) **Corrected**

Total Pages : 3

Roll No.

805
CENTRE SUPERINTENDENT
College of Technology & Engineering

Course No. : CS-211

M-V/264

**Second Year B.Tech. of the Four Year Integrated
Degree Course Examination, 2014-15
(Computer Science Engineering)**

SEMESTER-I

DIGITAL LOGIC DESIGN

Time : Three Hours

Maximum Marks : 50

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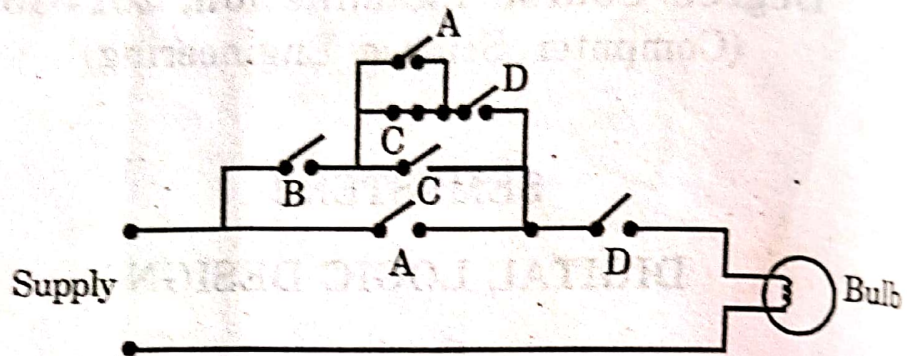
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M-V/264/I/2014-15/65/ZZ/240

P. T. O.

UNIT-I

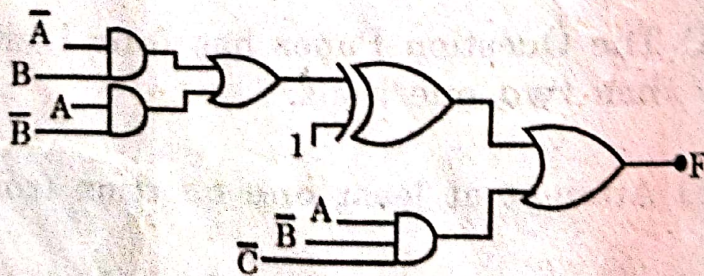
1. (a) Draw and explain the working of lowest power consumption logic in all logic family.
- (b) Derive the Boolean expression to represent logic of the following circuit.



2. (a) How you realise the universal gates using CMOS logic?
- (b) Write down all important characteristics of digital logic family.

UNIT-II

3. (a) Simplify the expression represented by the following logic circuit, so as to obtain its minimal expression using boolean techniques.



- (b) Represent the function $F = A + B + C + D$ using two input NAND functions.

4. (a) Describe all Boolean rules, which are helpful to simplify given logical expression.
- (b) How you simplify below given logical expression then implement the simplified logical expression using suitable logic gates?

$$f(a, b, c, d) = \bar{a}bcd + ab\bar{c}\bar{d} + \bar{a}\bar{b}c\bar{d} + \bar{a}b\bar{c}d + a\bar{b}\bar{c}d$$

UNIT-III

5. (a) Draw and explain the working of binary parallel adder with suitable example.
- (b) Write down steps required to design full subtractor circuit with example.
6. (a) Draw and explain the working 3 to 8 decode circuit with truth table.
- (b) Implement a full adder using two 4 : 1 multiplexers.

UNIT-IV

7. (a) Design with all steps of synchronous counter to count 0, 5, 4, 2, 6 states with diagram.
- (b) Implements all flip-flops using universal flip-flop with truth table.
8. (a) Describe the working of Bi-directional shift-register.
- (b) What is race around problem in flip-flop and how you avoid it in flip-flop with proper justification?

Roll No.

Course No. : EE-212 (EE/CSE/IT)

M-V/174

**Second Year B.Tech. of the Four Year Integrated
Degree Course Examination, 2014-15**

(Computer Science and Engineering/Electrical/
Information Technology)

SEMESTER-I

ELECTRICAL MEASUREMENTS & INSTRUMENTS

(Common For Electrical, Computer Science and
Engineering, Information Technology)

Time : Three Hours

Maximum Marks : 50

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P. T. O.

M-V/174/I/2014-15/165/ZZ/141

UNIT-I

1. (a) Describe the construction and working of vibration galvanometer. Derive the expression for amplitude of vibrations. 6
- (b) A shaded pole induction ammeter is calibrated at 50 Hz. It gives a deflection of 105° with a current of 20A. Determine the deflection of instrument while measuring 20 A at a frequency of 75 Hz. 4
2. (a) Derive the expression for the driving torque equation for moving iron type instrument and comment upon the nature of scale. Also write its various uses. 6
- (b) Define the following terms in reference to the galvanometer : (i) relative damping and (ii) logarithmic decrement. 4

UNIT-II

3. What do you mean by low, medium and high resistances? Describe one method each for the measurement of low, medium and high rest resistances with their advantages and disadvantages. 10
4. (a) With the help of neat diagram, explain how a dc potentiometer is standardized and is used for measurement of current flowing in a circuit. 5
- (b) What are the different forms of ac potentiometers? Bring out the differences between them. 5

UNIT-III

5. (a) Draw the circuit of bridge which is used for measuring inductance of a given coil. Draw the phaser diagram under balance condition and derive the equation. 5

- (b) Explain Wagner's earthing device to minimize stray capacitance effects in bridge. 5
6. (a) Explain clearly with the help of neat diagram the principle of operation of current transformer. 5
- (b) Describe briefly, the methods for testing potential transformer. 5

UNIT-IV

7. (a) Discuss the method for measurement of iron loss in a strip type specimen. 5
- (b) Explain principle and working of Cathode Ray Oscilloscope. 5
8. (a) With the help of block diagram, explain working of heterodyne wave analyzer. 5
- (b) Explain working principle of integrated type digital voltmeter. 5