Roll No. ....

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

M-V/205

Second Year B. Tech. of the Four Year Integrated Degree Course Examination, 2018-19

(COMPUTER SCIENCE AND ENGINEERING/ELECTRICAL)

SEMESTER-I

ELECTRICAL MEASUREMENT AND INSTRUMENTS

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.

P. T. O.

(v) All questions carry equal marks.

(vi) Assume suitable data, if necessary and indicate the same clearly.

UNIT-I

1. (a) Describe construction of Moving Iron Type Instruments with diagram also determine torque equation. 5

   (b) Why Moving Iron Type Instruments are used in both AC and DC. 5

2. (a) Write short notes on the following :

   (i) Current Sensitivity. 3

   (ii) Voltage Sensitivity. 2

   (b) Explain Construction and Working of Vibration Type Galvanometer. 5

UNIT-II

3. (a) Distinguish between AC and DC type Potentiometer. 5

   (b) What are the problems Associated with AC Potentiometer ? Describe the working of any one AC Potentiometer with neat sketch. 5

4. (a) Define the difficulties in measurement of High Resistances. 5

(b) What are the different methods of measuring Medium Resistance ? Define substitution method with neat diagram. 5

UNIT–III

5. (a) Derive the expression for the ratio and Phase angle error of a CT with a neat Phasor diagram. 5

(b) Brief one method of Testing of Current Transformer. 5

6. (a) Why Hay's bridge suited for measurement of Inductance of High Q Coils ? Derive the equation for balance condition. 5

(b) For Anderson's bridge, determine the relation for unknown Impedance. What are the advantages and limitations of this bridge ? 5

UNIT–IV

7. (a) Explain Heterodyne wave analyzer with the help of diagrams. 5

(b) What are the advantages of Transistor Voltmeter over the Vaccum Tube Voltmeter ? 5

P. T. O.

8. (a) What are the Principal requirements in magnetic measurements ?   5

(b) Write short notes on the following :

   (i) TVM's using FET as input stage.   3

   (ii) Ramp Type Digital Voltmeter.   2

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

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Second Year B. Tech. of Four - Year Integrated Degree Course Examination, 2018-19

(Computer Science Engineering)

SEMESTER-I

OBJECT ORIENTED PROGRAMMING WITH C++

Time : Three Hours

Maximum Marks : 50

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P.T.O.

UNIT - I

1. (a) What is Object oriented programming? How data and functions organized in an object-oriented program?

   (b) Why do we need the preprocessor directive iostream and iomanip ? Write unique advantages of object oriented programming paradigm.

   5

2. (a) Write a function using reference variables as arguments to swap the values of a pair integer.

   5

   (b) When will you make a function inline ? How does an inline function is differ from a preprocessor macro?

   5

UNIT - II

3. (a) What do you mean by constructor? How do we invoke a constructor function? Give an programming example.

   5

   (b) What is operator overloading ? How many arguments are required in the definition of an overloaded unary operator? Give an programming example.

   5

4. (a) What do you mean by dynamic initialization of objects? How you would create space for array of objects using pointers ? Explain with example.

   5

(b) What are the applications of "This" pointer ? Explain array of pointer with programming example. 5

UNIT - III

5. (a) What do you mean by Inheritance? Explain all types of Inheritance with programming example. 5

(b) What do you mean by polymorphism? Describe How an object of a class that contains object of other classes created? 5

6. (a) What is a virtual function? Why do we need virtual function? 5

(b) What do you mean by static function ? When is a friend function compulsory? Give an example. 5

UNIT - IV

7. (a) What is a Stream? Describe briefly the features of I/O system supported by C++. 5

(b) What is a file mode? Describe the various available file mode options with example. 5

8. (a) What is an Exception ? Explain Exception Handling mechanism with programming example. 5

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(b) Distinguish between following with appropriate example:-

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(i) The class template and template class.

(ii) Overloaded functions and function templates

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Course No.: EC-219 (CSE)

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

Second Year B. Tech. of the Four – Year Integrated
Degree Course Examination, 2018-19
(COMPUTER SCIENCE ENGINEERING)

SEMESTER- I

ANALOG ELECTRONICS

TIME: THREE HOURS

Maximum Marks: 50

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(v)   All questions carry equal marks.
(vi)   Assume suitable data, if necessary and indicate the same clearly.

UNIT-I

1. (a) Draw the small signal high frequency model of common emitter (CE) configuration
and explain significance of all resistive components.

   (b) How amplifiers are classified? Explain different types of distortion in amplifier.

2. (a) Discuss the effect of emitter bypass capacitor on low frequency response of BJT
amplifier.

   (b) What is transistor biasing? Explain voltage divider biasing in brief.

UNIT-II

3. (a) An amplifier has voltage gain with feedback of 100.If the gain without feedback
changes by 20% and gain with feedback should not vary more than 2%.Determine
the values of open loop gain A and feedback ratio β.

   (b) Give topology for various types of feedback amplifiers.

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Pages : 3

4. (a) Describe the effect of negative feedback on the bandwidth and distortion in an amplifier with necessary derivation.

   (b) Describe the working principle of voltage series feedback and voltage shunt feedback. Also explain how input and output impedances of an amplifier are affected by feedback in both cases.

UNIT-III

5. (a) Derive expression for maximum efficiency of class B transformer coupled push-pull amplifier.

   (b) What is a cross over distortion? Explain how the harmonic distortion in push-pull amplifier is reduced?

6. (a) Draw equivalent circuit of capacitor coupled single tuned amplifier and derive the equation for voltage gain.

   (b) Discuss the effect of cascading tuned amplifiers in bandwidth.

UNIT-IV

7. (a) What is CMRR? Write the ideal characteristics of an op-amp.

   (b) Describe the construction of RC phase shift oscillator and explain its working.

8. (a) Discuss the working principle of op-amp as a differentiator and comments on its performance.

   (b) In a Hartley oscillator, the value of the capacitor in tuned circuit is 500pF and the two sections of coil have inductances $38\mu H$ and $12\mu H$. Find the frequency of oscillator and feedback factor.

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Second Year B. Tech. of the Four – Year Integrated
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(COMPUTER SCIENCE ENGINEERING)

SEMESTER- I
PRINCIPLES OF PROGRAMMING LANGUAGES

TIME: THREE HOURS

Maximum Marks: 80

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(v)   All questions carry equal marks.

UNIT 1

Q.1   (a)   Differentiate between Assembly Language and Machine Language .   8

(b)   What are the features of a good Programming Language? Explain with
example.   8

Q.2   (a)   Why High Level Language is better than Low Level Language. Describe?   8

(b)   Describe Virtual Computer. How can you design it, elaborate.   8

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UNIT 2

Q.3 (a) What do you mean by Data Types. Also explain various data types. 8

(b) Explain the difference between a Translator and a Compiler with an example. 8

Q.4 (a) Explain the concept of Information Hiding in Programming Language. 8

(b) What is an Elementary Data Type. How is it implemented. 8

UNIT 3

Q.5 (a) What is Inheritance. How is it implemented in programming language. 8

(b) Explain the various types of sequence control in Programming Language. 8

Q.6 (a) Explain Polymorphism with the help of an example in detail. 8

(b) What is Data Encapsulation. Why is it needed. 8

UNIT 4

Q.7 (a) What is the point of having a garbage collector? Why not use malloc and free. 8

(b) Differentiate between C and C++. 8

Q.8 (a) Explain Static and Dynamic Scoping with their advantages and disadvantages. 8

(b) What is the difference between a formal and a actual Parameter. Explain with suitable example. 8

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

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SEMESTER- I

DIGITAL LOGIC DESIGN

TIME: THREE HOURS

Maximum Marks: 50

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UNIT-I

Q.1   Convert the following:

(a) $(1F8E6)_{16}$ to Decimal   (2)

(b) $(-18)_{10}$ to 2's complement   (2)

(c) $(-25)_{10}$ to Binary   (2)

(d) $(1001011)_2$ to Gray Code   (2)

(e) $(129)_{10}$ to Excess-3 Code   (2)

Q. 2   (a)   Explain the characteristics of digital IC's.   (5)

       (b)   Explain the emitter coupled logic gate with diagram.   (5)

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UNIT-II

Q. 3 (a) Simplify the function $F = \Sigma (1, 2, 4, 5, 6, 10, 11, 14, 15)$. (5)

(b) Obtain the complementary of $(X' + Y) * Z' * D'$. (5)

Q. 4 (a) Realize the following function $\overline{\overline{U + V} + W * X + \overline{Y * Z}}$ (5)

(b) Explain the De Morgain's theorem with examples. (5)

UNIT-III

Q. 5 (a) Simplify the expression $F = \Sigma m (1, 3, 7, 11, 15) + d (0, 2, 5)$ using Karnaugh map. (5)

(b) Explain the Quine-McCluskey minimization method. (5)

Q. 6 (a) Draw and explain the working of binary parallel adder. (5)

(b) Explain the working of BCD to decimal decoder. (5)

UNIT-IV

Q. 7 (a) Explain the working of T Flip-flop. (5)

(b) Draw and explain the working of a MOD-8 counter. (5)

Q. 8 (a) Draw and explain the working of ring counter. (5)

(b) Draw and explain the working of 4-bit bidirectional shift register. (5)

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