

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

Total Pages : 3

Roll No. ....

Course No : CS-213

M-III/147

**Second Year B. Tech. of Four - Year Integrated  
Degree Course Examination, 2017-18  
(Computer Science & Engineering)**

**SEMESTER-I**

**OBJECT ORIENTED PROGRAMMING WITH C++**

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.

M-III/147/I-2017-18/85/ZZ

PT.O.

## UNIT - I

1. Distinguish between the following -
  - (a) Object and Class
  - (b) Dynamic binding and Message passing
2. (a) Explain the passing parameter by value and by reference with suitable example.  
(b) What is inline function? Explain it with example.

## UNIT - II

3. Explain the following-
  - (a) Arrays as parameter to function
  - (b) Pointer to void
4. (a) What is operator overloading? Explain it with suitable example.  
(b) What is constructor? Explain the various type of constructor with example.

## UNIT - III

5. (a) What is friend function ? Explain it with suitable example.  
(b) Explain the static function with example.

6. Explain the following-
- (a) Multiple Inheritances
  - (b) Virtual Function

#### UNIT - IV

7. Explain the following-
- (a) Multi File Program
  - (b) Disc I/O with Stream
8. (a) What is Exception ? Explain the exception handling with block diagram.
- (b) Explain the Templates with example.

*Do not write anything on question paper. If you find any mistake in the question paper, it should be reported to the invigilator. No marks will be given for indulging in use of unfair means and malpractices. The marks will be taken as per rules.*

- (i) Attempt five questions in all.
- (ii) The Question Paper has four parts. Read and attempt any five questions.
- (iii) Attempt at least one question from each part.
- (iv) Answers should be in the form of short answers.
- (v) Diagrams should be drawn neatly.

Roll No. ....

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

M-III/105

Second Year B. Tech. of Four - Year Integrated

Degree Course Examination, 2017-18

(Computer Science and Engineering / Electrical  
Engineering / Information Technology)

SEMESTER-I

**ELECTRICAL MEASUREMENT & INSTRUMENTS**

(Common for Computer Science and Engineering / Electrical  
Engineering / Information Technology)

Time : Three Hours

Maximum Marks : 50

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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-III/105/I-2017-18/230/ZZ/102

P.T.O.

## UNIT - I

1. (a) Describe the constructional details of an electro-dynamometer type wattmeter. Derive the expression for torque when the instrument is used on a.c. Explain why it is necessary to make the potential coil circuit purely resistive.  
(b) Describe the errors in electro-dynamometer type wattmeters.
2. (a) Describe construction and working of a ballistic galvanometer. Explain the difference in constructional details of a ballistic galvanometer and d'Arsonval galvanometer.  
(b) The scale of a galvanometer is placed at a distance of 0.4 m from the mirror. A deflection of 44 mm is observed. What is the angle through which the coil has turned.

## UNIT - II

3. (a) A simple slide wire is used for measurement of current in a circuit. The voltage drop across a standard resistor of  $0.1 \Omega$  is balanced at 75 cm. Find the magnitude of current if the standard cell emf of 1.45 V is balanced at 50 cm.  
(b) Draw the circuit diagram of a Crompton's potentiometer and explain its working. Describe the steps used when measuring an unknown resistance.

(a) Draw the circuit of a Kelvin's double bridge used for measurement of low resistances. Derive the condition for balance.

(b) A length of cable is tested for insulation resistance by the loss of charge method. An electrostatic voltmeter of infinite resistance is connected between the cable conductor and earth, forming therewith a joint capacitance of 600 pF. It is observed that after charging the voltage falls from 250 V to 92 V in 1 minute. Calculate the insulation resistance of the cable.

### UNIT - III

5. (a) Derive the equations of balance for an Anderson's bridge. Draw the phasor diagram for conditions under balance. Discuss the advantages and disadvantages of the bridge.

(b) A bridge consists of following:

Arm ab: - a choke coil having a resistance  $R_1$  and inductance  $L_1$

Arm bc: - a non inductive resistance  $R_3$

Arm cd: - a mica condenser  $C_4$  in series with a non inductive resistance  $R_4$

Arm da: - a non inductive resistance  $R_2$ .

When this bridge is fed from a source of 500Hz, balance is obtained under following conditions:  $R_2 =$

$2410\Omega$ ,  $R_3 = 750\Omega$ ,  $C_4 = 0.35 \mu\text{F}$ ,  $R_4 = 64.5\Omega$

P.T.O.

The series resistance of capacitor is  $0.4\Omega$ . Calculate the resistance and inductance of the choke coil. The supply is connected between a and c and the detector is between b and d.

6. (a) A potential transformer, ratio 1000/100 volt, has the following constants: Primary resistance =  $94.5\Omega$  Secondary resistance =  $0.86\Omega$  Primary reactance =  $66.2\Omega$  Total equivalent reactance =  $1100\Omega$  No load current =  $0.02\text{A}$  at 0.4 power factor. Calculate:
- Phase angle error at no load
  - Burden in VA at unity power factor at which the phase angle will be zero.
- (b) Draw the equivalent circuit and phasor diagram of a current transformer. Derive the expression for ratio and phase angle errors.

#### UNIT - IV

7. (a) In a test on a specimen of total weight 13kg the measured values of iron loss at a given value of peak flux density were 17.2W at 40Hz and 28.9W at 60Hz. Estimate the values of hysteresis and eddy current losses in W/kg at 50Hz for the same value of peak flux density.
- (b) Explain the oscillographic method of determination of hysteresis loop of a magnetic material.
8. (a) Describe the working of an integrating type digital voltmeter.
- (b) Explain principle and working of cathode ray oscilloscope.

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Library

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Course No.: CS-211

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

Second Year B. Tech. of the Four – Year Integrated  
Degree Course Examination, 2015-16 17-18  
(COMPUTER SCIENCE ENGINEERING)

SEMESTER- I

DIGITAL LOGIC DESIGN

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 taken as per rules”.

- (i) Attempt any FIVE questions.
- (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.

UNIT – I

Q.1 Convert the following:

- (a)  $(42A.12)_{16}$  to Decimal (2)
- (b)  $(25.625)_{10}$  to Binary (2)
- (c)  $(62.905)_{10}$  to BCD (2)
- (d)  $(110110)_2$  to Gray Code (2)
- (e)  $(58.43)_{10}$  to Excess-3 Code (2)

- Q.2 (a) Discuss the characteristics of CMOS logic. (5)
- (b) Discuss various TTL output structures. (5)



## UNIT - II

- Q.3 (a) State and prove Absorption and Simplification theorems. (5)  
(b) Implement the following function with NAND gates:  $F(x, y, z) = \sum(0, 6)$  (5)
- Q.4 (a) State and Prove Associative and Distributive theorems. (5)  
(b) Realize the following functions by NOR gates:  $F = A(B + CD) + BC'$  (5)

## UNIT - III

- Q.5 (a) Plot the logical expression  $F(A, B, C, D) = ABCD + AB'C'D' + AB'C + AB$  on a fourvariable Karnaugh map. Obtain the simplified expression. (5)  
(b) Design a combinational circuit for BCD-to-seven-segment decoder. (5)
- Q.6 (a) Implement the following function with multiplexer:  $F(A, B, C, D) = \sum(0, 1, 3, 4, 8, 9, 15)$ . (5)  
(b) Simplify the Boolean function:  $F(w, x, y, z) = \sum(1, 3, 7, 11, 15)$  and the don't care condition  $d(w, x, y, z) = \sum(0, 2, 5)$  (5)

## UNIT - IV

- Q.7 (a) Explain the S-R Flip-flop's based on (i) NOR gates and (ii) NAND gates. (5)  
(b) Draw and explain the working of a 4-bit bidirectional shift register. (5)
- Q.8 (a) Explain the working of Mealy and Moore machines. (5)  
(b) Draw and explain the working of 4-bit Johnson counter. (5)

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B. Tech. (CSE) (II Yr)

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(a)

(b)

(c)

(d)

(e)

Q.2

Second Year B. Tech. of the Four – Year Integrated  
Degree Course Examination, 2017-18  
(COMPUTER SCIENCE ENGINEERING)

SEMESTER- I

PRINCIPLES OF PROGRAMMING LANGUAGES

TIME: THREE HOURS

Maximum Marks: 80

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- (i) Attempt any FIVE questions.
- (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.

UNIT - I

- Q.1 (a) Explain the statement “Conventional programming languages can be viewed as abstractions of an underlying Von Neumann architecture.” (08)
- (b) List and explain features of a good programming language. (08)
- Q.2 (a) Explain the concept of binding. Also explain binding time and its types. (08)
- (b) What is the importance of programming environment in programming? What is integrated development environment (IDE)? (08)

## UNIT – II

- Q.3 (a) What is language processing? How it is achieved in computer programming languages? (08)
- (b) Explain various elementary data types. Explain static type checking & its significance. (08)
- Q.4 (a) Explain various stages of program translation. Which major data structures are useful in program translation?
- (b) Compare & contrast scalar types with composite data types. (08)

## UNIT – III

- Q.5 (a) Explain the concept of encapsulation with suitable example. (08)
- (b) What is sequence control? What are its types? Explain in detail. (08)
- Q.6 (a) Explain the concept of polymorphism with suitable example. (08)
- (b) Explain inheritance and its implementation with suitable example. (08)

## UNIT – IV

- Q.7 (a) Compare C language with C++ language on at least 6 different parameters. (08)
- (b) What are different methods of parameter transmission in programming? Explain each briefly. (08)
- Q.8 (a) What is subprogram? What are different ways of calling it? Which data structure is used for call and return from subprogram? (08)
- (b) Write short note on: Storage management. (08)

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