BCA Second Semester Examination, May – 2019

FIRST PAPER

Object Oriented Programming Concepts

Paper Code:-2611

Time Allowed: Three Hours **Maximum Marks.70**

No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.

(Attempt all six questions.)

Part I (Question No. 1& 2) is compulsory & Part II (Question No. 3, 4, 5 & 6) has internal choice.

PART-I

1. Answer any ten questions. Each question carries 1 mark. **10x1= 10**

a) Write the structure of C++ program.

b) Why do we need the preprocessor directive # include <iostream>?

c) What is a Pointer? Write its syntax.

d) What are Input and Output Streams?

e) What is type conversion?

f) What is the use of reference variable?

g) What is Lvalue and Rvalue?

h) What is Class Template?

i) What is the use of scope resolution operator?

j) Define Derived Class.

k) What are the properties of friend functions?

l) What is the concept of function overloading?

2. Answer all the questions. Each question carries 5 marks. **4x5 = 20**

a) What are the major advantages of Object Oriented Programming Paradigm?

b) What is the importance of static member in C++? Explain with example.

c) What is Abstraction? Explain how is it implemented in C++?

d) What are the special characteristics of constructor function?

PART-II

Unit-I

3. Discuss the important features of OOPS. Explain the organization of data and function in OOPS. **10**

OR

What are Storage Classes? Explain the different types of storage classes. **10**

Unit-II

4. How to pass arguments to functions? Write a program for swapping two numbers using functions. **10**

OR

What are the characteristics of constructors and destructors? How constructors are used for declaring the static member? **10**

Unit-III

5. What is a Friend Function? What are the merits and demerits of using a friend function? **10**

OR

What is Operator Overloading? Write a program to find the area of rectangle, triangle and sphere by using function overloading. **10**

Unit-IV

6. What is Inheritance? Explain the different types of inheritances used in C++. **10**

OR

Explain how exceptions are handled in C++ with a suitable example. **10**

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BCA Second Semester Examination, May - 2019

(Faculty of Science)

SECOND PAPER

Internet and Web Technology

Paper Code : 2621

Time Allowed: Three Hours **Maximum Marks : 70**

No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.

(Attempt all six questions)

Part I (Question No. 1& 2) is compulsory & Part II (Question No. 3, 4, 5 & 6) has internal choice.

PART-I

1. Answer any 10 questions. Each question carries 1 mark. **10x1= 10**

(Words limit up to 20 words each)

a) Define the term 'Internet'.
b) What is 'Web server'?
c) What is 'HTML'?
d) What is 'CSS'?
e) What is the use of DIV Tag?
f) Differentiate between HTML and XML.
g) Give any two advantages of JAVA Script.
h) Give the name of various 'Control Structures' in Java Script.
i) What is 'DNS'?
j) What is 'Web Crawling'?
k) Discuss the function of 'Transmission Control Protocol'.
l) Name the used to align center a section of text.

2. Attempt all questions. Each question carries 5 marks. **4x5=20**

(Word limit up to 50 words each)

a) Discuss various services provided by TCP/IP model.
b) What is XML? Discuss various features of XML.
c) How to use Java Script with CSS?
d) What do you understand by 'Event Ladling' in Java Script?

PART-II

UNIT I

3. How does a web server works? Explain the steps to publish a website. **10**

OR

How to make bulleted list using html? Discuss with the help of suitable example. **10**

UNIT II

4. What is XML DOM Document? Discuss about advantages of XML DOM Document in brief. **10**

OR

How to handle events with DHTML? Discuss with the help of suitable example. **10**

UNIT III

5. What is 'Java Script'? Enumerate the difference between Java and Java Script? It is possible to break Java Script code into several lines? Discuss with the help of example. **10**

OR

What are the undeclared and undefined variables in Java Script? Write the code for adding new elements dynamically? **10**

UNIT IV

6. Discuss various levels of DOM in detail. **10**

OR

What is 'Document Object Model'? Discuss its structure and properties in brief. **10**

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BCA Second Semester Examination, May-2019

THIRD PAPER

Digital Electronics & Circuits

Paper Code:- 2631

Time Allowed: Three Hours **Maximum Marks.70**

(1) No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.

(2)All the parts of one question should be answered at one place in the answer book.

(Attempt all six questions.)

Part I (Question No. 1& 2) is compulsory & Part II (Question No. 3, 4, 5 & 6) has internal choice.

Part-I

1. Answer any 10 questions. Each question carries 1 mark. 10x1= 10

(Word limit up to 20 words each)

a) State De-Morgan's theorem.
b) Write truth table for AND gate.
c) What is Maxterm?
d) What do mean by Multiplexer?
e) What are Sequential Circuits?
f) What is DCTL logic family?
g) What are ECL characteristics?
h) What is Parity Checker?
i) What is D Flip-Flop?
j) Write two characteristics of Amplifier.
k) What do you mean by Asynchronous counters?
l) What do you mean by Latch?

2. Answer all the questions. Each question carries 5 marks. 4x5 = 20

(Words limit up to 50 words each)

a) What is EX-NOR gate? Give its circuit diagram and truth table. Also write Boolean expression for it.

b) Explain the working of Resistance Transistor Logic (RTL) AND gate.

c) Describe the function of BCD to Seven Segment Decoder.

d) Explain the modes of operation of Shift Registrar.

Part-II

Unit-I

3. (a) Simplify the following Boolean Expression using De-Morgan's theorem **5**

$$\overline{\overline{AB}(CD + \overline{E}\,F)(\overline{AB} + \overline{CD})}$$

(b) Minimize the given function using K-map: **5**

$f(A,B,C,D) = \sum_m(1,4,6,8,11,13,15)$

P.T.O.

OR

(a) Reduce the given function with the help of $K-map$: **5**
$f = AB + A\overline{C} + C + AD + A\overline{B}\,C + ABC$

(b) Draw the logic diagram of given function using NOR gates only: **5**
$Y = A\overline{B} + ABC + B\overline{C}$

Unit-II

4. (a) Explain the logical function of TTL or gate. **5**

(b) Explain the I-V characteristics of Field Effect Transistor (FET). **5**

OR

(a) Write the advantages of CMOS over the TTL at the following features: Fan in, Fan out, Noise margin, Propagation delay and Power dissipation. **5**

(b) Draw 2 input ECL AND gate and explain its working. **5**

Unit-III

5. (a) Explain the construction and working of 1:16 Demultiplexer. **5**

(b) Explain the working function of Magnitude Comparator IC 7485. **5**

OR

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

(b) Write the differences between Multiplexer and Demultiplexer. **5**

Unit-IV

6. (a) Explain the working of JK Flip Flop. Describe its merits over clocked RS Flip Flop. **5**

(b) Describe Master-Slave Flip Flop. How race around condition is removed? **5**

OR

(a) Explain 4-bit asynchronous binary counter. **5**

(b) Explain how a J-K Flip Flop can be used as D Flip-Flop and T Flip-Flop? **5**

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BCA Second Semester Examination, May-2019

FOURTH PAPER

Computer Architecture

Paper Code:- 2641

Time Allowed: Three Hours **Maximum Marks.70**

(1) No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.

(2)All the parts of one question should be answered at one place in the answer book.

(Attempt all six questions.)

Part I (Question No. 1& 2) is compulsory & Part II (Question No. 3, 4 , 5 & 6) has internal choice.

Part-I

1. Answer any 10 questions. Each question carries 1 mark. **10x1= 10**

a) What is Logical Operation?

b) What is Sequential Circuit?

c) What is output of $\overline{A} + \overline{B}$ as per D-Morgan's Law?

d) What is meaning of T in T-flip flop?

e) What does PISO stand for?

f) What do you understand by a Flip Flop?

g) What is meant by 'Instruction Cycle'?

h) What is the task of ALU?

i) What is 'Indirect Address Mode'?

j) Why Cache Memory is Faster?

k) What does RISC stand for?

l) What is I/O processor?

2. Answer all the questions. Each question carries 5 marks. **4x5 = 20**

a) What do you understand by the principle of duality? Explain.

b) Discuss the edge triggered flip flops by taking suitable example.

c) Explain the Interrupt with example.

d) What is meant by DMA? Explain.

Part - II

Unit-I

3. (i) Discuss the Laws of Boolean Algebra by taking suitable examples. **5**

(ii) Explain the Combination Circuits. **5**

P.T.O.

OR

(i) Explain Half Adder and Full Adder. **5**

(ii) What is the use of Multiplexer? Explain. **5**

Unit-II

4. (i) Describe the JK flip flops by showing the truth tables. **5**

(ii) Explain BCD Counter. **5**

OR

(i) Explain the "Counters" and their uses. **5**

(ii) Discuss the types of 'Registers'. **5**

Unit-III

5. Describe the memory reference instructions by providing suitable examples. **10**

OR

Discuss various Addressing modes by giving appropriate examples. **10**

Unit-IV

6. (i) Differentiate between Main Memory and Cache Memory. **5**

(ii) What is meant by 'Interfacing'? Explain. **5**

OR

What do you understand by Virtual Memory? Describe its need and functioning by giving suitable example. **10**

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