

BCA Second Semester Examination, May-2017

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

(Word limit up to 20 words each)

- What do you mean by USB Port?
- What is principle of Duality?
- What is Associative Laws of Boolean Algebra?
- What is meant by Combinational Logic Circuit?
- What is the use of registers in CPU?
- Draw the circuit and Truth table of NAND gate.
- Define Dynamic RAM.
- What is Buffer Memory?
- What are the uses of Cache memory?
- What are the functions of control bus?
- What is DMA?

2. Answer all the questions. Each question carries 5 marks.

4x5 = 20

(Words limit up to 50 words each)

- State and prove De-Morgans's Theorems.
- Differentiate between Synchronous and Asynchronous Counters.
- What do you know by Instruction Execution Cycle? Define each of them.
- Compare RISC and CISC architecture.

P.T.O.

Part-II

Unit-I

3. Simplify the following expression using Boolean Algebra and draw logic diagram for simplified expression:

(a) $A'B + ABC' + ABC$

(b) $AB + A(CD + CD')$

5+5

OR

(a) Explain Full Adder with the help of logic diagram and truth table.

5

(b) Explain De-multiplexer with logic diagram.

5

Unit-II

4. What is Flip-Flop? Explain J-K Master Slave Flip-Flop with their execution table and logic circuit diagram.

10

OR

What is Counter? Explain Decade Counter with the help of working process & logic diagram.

10

Unit-III

5. Discuss Instruction Format and types of instructions in detail.

10

OR

Explain various addressing modes with an example of each.

10

Unit-IV

6. What is Associative Memory concept? Explain Associative Memory with the help of block diagram and match-logic.

2+4+4

OR

Explain the following interrupts with the help of logic diagram.

5+5

(a) Priority Interrupt (polling)

(b) Daisy-Chaining priority

BCA Second Semester Examination, May-2017

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) Write the truth table and symbol for NAND gate.
- b) Write de Morgan's theorems.
- c) What do you mean by Don't Care statement.
- d) What is DCTL logic family ?
- e) What is Field - Effect Transistor (FET) ?
- f) What do you mean by 7400 IC series ?
- g) What is Multiplexer ?
- h) What do you mean by Parity Checker ?
- i) What do you mean by Priority Encoder ?
- j) What is the difference between Latch and Flip - Flop ?
- k) What is D Flip - Flop ?
- l) What is Shift Register ?

2. Answer all the questions. Each question carries 5 marks.

4x5 = 20

(Words limit up to 50 words each)

- a) What are Logic Gates ? Realize NOT, OR, AND gates with the help of NAND logic gate.
- b) Explain the working of DCTL logic family.
- c) Explain the construction and working of UP counter.
- d) Explain the working of clocked R - S flip - flop.

P.T.O.

Part-II

Unit-I

5

3. (a) Simplify the following Boolean expression in its SOP form
 $f(A, B, C, D) = \sum m(1, 3, 4, 5, 6, 7, 9, 12, 13, 14, 15)$

5

- (b) Simplify the following Boolean expression

$$\overline{A\overline{B}} + ABC + A(B + \overline{A\overline{B}})$$

OR

5

- (a) Using K - map minimize the given function in its SOP form

$$F = \prod_M (4, 5, 6, 7, 9, 13)$$

5

- (b) Draw the logic diagram by using NOR gates only

$$Y = \overline{A + (B + C)} \cdot D$$

Unit-II

5

4. (a) Draw a 2 - input TTL NAND gate and explain it's working.

5

- (b) Compare and tabulate the ECL, CMOS and TTL families.

OR

5

- (a) Explain the working of Transistor Amplifier.

5

- (b) State advantages and disadvantage of DCTL logic families over other logic families.

Unit-III

5

5. (a) Explain the working of BCD to seven segment Decoder driver.

5

- (b) Write the differences between multiplexer and demultiplexer.

OR

- (a) Explain the working of Decimal to BCD Priority Encoder.

5

- (b) Write a short note on Magnitude Comparator.

5

Unit-IV

6. (a) Show the logic diagram of a master slave flip - flop and discuss how it removes the race around condition ?

5

- (b) Explain how a J - K flip - flop can be used as a D - flip - flop and T - flip - flop ?

5

OR

- (a) Draw the four stages of shift left register and explain its working.

5

- (b) Explain 4 - bit asynchronous binary counter.

5

BCA Second Semester Examination, May - 2017

(Faculty of Science)

SECOND PAPER

Internet and Web Technologies

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 upto 20 words each)

- What do you mean by 'Web Client' ?
- Write code of different types of unordered list of HTML.
- Write importance of HEAD tag in HTML.
- How to display information using Java Script code ?
- How to define a Java Script functions ?
- What is XML ?
- What do you understand by Search Engine ?
- Give any two advantages of Internet.
- How one web document can be connected to another web document through HTML ?
- What is the use of Frameset ?
- What are the advantages of script languages ?
- Write any five tags used in text formatting in HTML ?

2. Attempt all questions. Each question carries 5 marks.

4x5=20

(Word limit upto 50 words each)

- Explain the importance of CSS in Dynamic HTML.
- What is a Frame in HTML ? Give its advantages and disadvantages.
- How array is declared and allocated in 'Java Script' ? Write Java Script code to pass an array to a function.
- Discuss event handling in Java Script.

P.T.O

PART-II
UNIT I

3. Write an HTML code to make a simple calculation, which performs basic arithmetic operations. Use Java Script on a button click to perform arithmetic operations and show result. **10**

OR

What is TCP/IP ? Discuss its various services in detail. **10**

UNIT II

4. Explain Dynamic positioning and mouse event in DHTML. **10**

OR

- (a) Differentiate between XML and HTML. **5**
(b) Different elements of style sheets. **5**

UNIT III

5. Write a Java Script function to validate the content of a text box, which accepts only ten digit mobile numbers and generates an alert if any characters are input by user. **10**

OR

Explain Control Statements in Java Script with example of each. **10**

UNIT IV

6. Discuss the following objects of DOM in brief : **5x2**
(a) Navigator
(b) Form

OR

Discuss the form validation in Java Script. **10**

BCA Second Semester Examination – May 2017**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****(Words limit up to 20 words each)**

- a) Mention the features of OOPs .
- b) Discuss about object in OOP concept .
- c) What is the purpose of reusability ?
- d) What is Type Conversion ?
- e) What are Variables and how they are declared ?
- f) Discuss about default constructor with an example .
- g) What is Multilevel Inheritance ?
- h) What is a Base Class ?
- i) What is the purpose of virtual function ?
- j) What are member functions ?
- k) What is the use of templates in OOP Concept ?
- l) Discuss briefly the usage of Exception Handling .

2. Answer all the questions. Each question carries 5 marks.**4x5 = 20****(Words limit up to 50 words each)**

- a) Differentiate between functional programming and OOP approach with suitable examples of each.
- b) Explain friend function with a suitable example .
- c) Write a note on inheritance .
- d) Write note on the following:
 - i) Sequential File Handling
 - ii) Opening and closing a file

P.T.O

PART-II

Unit-I

- 3. (i) Discuss the advantages of OOP .
- (ii) Write a program to show the usage of conditional statements.

5
5

OR

Write a program in C++ to find that whether a given string is a palindrome or not .

10

Unit-II

- 4. Discuss about the concept of arrays of class objects with the help of an example.

10

OR

Write a program to show use of different types of constructors.

10

Unit-III

- 5. Differentiate between single inheritance and multiple inheritance with suitable examples .

10

OR

Write a program to demonstrate the usage of function overloading.

10

Unit-IV

- 6. Write a program to do the following using random file handling concept :

10

- (i) Open a file
- (ii) Write data taken from user to the file
- (iii) Read data from the file and display on the screen
- (iv) Close the file

OR

Write notes on the following :

10

- a) Try, catch, throws block of exception handling
- b) Class template
