

BCA Second Semester Examination, May-2018

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 for NOR gate.
- b) What is the difference between positive and negative logic?
- c) What is Minterm?
- d) What is RTL logic family?
- e) Which is the fastest logic family?
- f) What is the figure of merit in logic family?
- g) What is Demultiplexer?
- h) What do you mean by Encoder ?
- i) Define a Decoder.
- j) What do you mean by edge triggering in Flip – Flops ?
- k) What is Shift Register?
- l) What is a Counter?

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

(Words limit up to 50 words each)

- a) Prove that NOR logic gate is universal gate.
- b) Write the difference between NMOS, PMOS and CMOS gates.
- c) Explain the working of Magnitude Comparator.
- d) Explain the difference between the performance of asynchronous and synchronous counters.

Part-II
Unit-I

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

$$\overline{ABC} + \overline{A}\overline{B} + AC$$

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

$$f(A,B,C,D) = \sum_m(0,1,2,3,5,7,8,9,10,12,13)$$

OR

- (a) Convert the following Boolean expression into canonical SOP form: 5

$$f(A,B,C) = (A+BC).(B+\bar{C}A)$$

- (b) Draw the logical diagram of the following expression using NAND gates only: 5

$$Y = \bar{A}\bar{B}C + \bar{A}B\bar{C} + \bar{A}BC + AB\bar{C}$$

Unit-II

4. (a) Draw a 3 input ECL OR/NOR gate and explain its working. 5
(b) Explain the working of CMOS inverter. 5

OR

- (a) Compare the characteristics of RTL, TTL, ECL and CMOS logic families. 5

- (b) Explain the working of tri-state TTL NAND gate. 5

Unit-III

5. (a) Define Multiplexer. Draw the pin out diagram, logic diagram and truth table of 8 to 1 multiplexer IC 74151. 5

- (b) Explain the working of Decimal to BCD priority encoder IC74147. 5

OR

- (a) Write a short note on Parity checkers. 5

- (b) Explain the working of a 1 to16 demultiplexer IC74154. Draw pin out diagram and truth table for it. 5

Unit-IV

6. (a) Write a short note on edge triggered D Flip – Flop. 5
(b) Explain the working of asynchronous Up/Down counters. 5

OR

- (a) Explain the working of RS Flip-flop. 5

- (b) Write short note on parallel in-parallel out shift register IC 7496. 5

BCA Second Semester Examination, May - 2018
(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) What do you understand by IP address of a system over internet?
- b) What is DNS?
- c) What is Client Server?
- d) What is Web Browser?
- e) What is XML?
- f) Define Data types.
- g) Write a tag to display an image in HTML.
- h) What is Type Casting in Java script?
- i) Define Protocol.
- j) Write any one advantage of script languages.
- k) What is Search Engine?
- l) What is the use of Body Tag in HTML?

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

(Word limit up to 50 words each)

- a) Explain the use of Internet in Business & Networking?
- b) Write an HTML code to display “Internet & Web technology” in Bold, Italic with Arial font in size 6 with GREEN colour.
- c) Create a Java Script Program to accept the first, middle, last name of the user and print them.
- d) What is CSS? Write the importance of CSS.

PART-II

UNIT I

3. What is Frame Set? Explain its advantages & disadvantages. Write a code to show frameset command. 10

OR

- ✓ Explain TCP/IP Model and its services. 10

UNIT II

4. What is Style Sheet? Write code to display functionality of Internal CSS? 10

OR

- ✓ Write an External CSS and display its use in HTML file Use atleast 4 tags in CSS file. Differentiate between XML and HTML. 10

UNIT III

5. What are Operators? Explain different types of operators available in Javascript. Create a Java script code to add values entered by user in HTML page. 10

OR

- ✓ Write a Java script code to validate the name & email-Id of the user entered in HTML Text box. 10

UNIT IV

6. What do you understand by Event Handling in Java script? Write a Java script function to check on a button click that the given number is Palindrome? 10

OR

- ✗ Explain different objects: Windows history, frames and form in detail. 10

BCA Second Semester Examination, May-2018
FOURTH PAPER
Computer Architecture
Paper Code:- 2641**Time Allowed: Three Hours**

- (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.

Maximum Marks.70

(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.
- a) What is Distributive Law of Boolean Algebra?
 - b) Draw the circuit diagram and truth table of X-OR operation.
 - c) What is Interrupt?
 - d) What do you mean by Virtual Memory?
 - e) What is meant by Sequential Logic Circuit?
 - f) What is Non-Volatile Memory?
 - g) What is Flip-Flop?
 - h) What are the functions of address bus?
 - i) What is DMA?
 - j) What is Random Access Memory?
 - k) What is Toggle condition in JK Flip-Flop?

10x1 = 10

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

4x5 = 20

- a) What do you mean by Standard Forms? Explain each form with example.
- b) Compare SR and JK Flip-Flops.
- c) Explain Associative Memory Concept.
- d) Explain various addressing modes.

Part-II
Unit-I

- 3** (i) What is the principle of Duality? **2.5**
(ii) State De-Morgan's theorem. **2.5**
(iii) Simplify the given Boolean function **5**

$$F = xy + \bar{x}\bar{y} + \bar{y}z$$

Implement it with AND, OR and NOT gates.

OR

- (a) Explain Half Adder and Half Subtractor with the help of truth table. **5**
(b) Explain Decoders with truth table. **5**

Unit-II

- 4.** What are Registers? Explain different types of Registers. **10**

OR

What is Counter? Explain the following **2**

(i) Synchronous Counter **4**

(ii) BCD Counter **4**

Unit-III

- 5** (i) Explain types of Instruction **5**
(ii) What is Instruction Execution Cycle **5**

OR

Discuss functions and design of Control Unit in detail. **10**

Unit-IV

- 6.** What is Cache Memory? How Cache Memory works. Explain with the help of diagrams. **10**

OR

- (a) What is an Input/Output processor? **5**
(b) What is Paging? Explain. **5**

BCA Second Semester Examination , May- 2018**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.

 $10 \times 1 = 10$

- a) What are user defined data types?
- b) What is Function Prototype?
- c) What is Pointer?
- d) List some of the special properties of the constructor functions.
- e) What is Destructor?
- f) Explain 'this' pointer.
- g) Define Inheritance.
- h) Define Pure Virtual Function.
- i) Explain derived class.
- j) Define opening and closing functions in file.
- k) Define the File.
- l) What is the use of templates in C++?

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

 $4 \times 5 = 20$

- a) Write a detailed note on characteristics of Object Oriented Programming Language.
- b) Explain access modifiers with a suitable example.
- c) Explain function overloading with a suitable example.
- d) Write notes on the following:
 - i) Sequential and random file handling
 - ii) Stream state member functions.

PART-II

Unit-I

3. Write a C++ program to find the largest and smallest element of an array.

10

OR

Demonstrate Polymorphism using any suitable example.

10

Unit-II

4. Explain 'friend function' with a suitable example.

10

OR

Discuss about the concept of pointer and classes with a suitable example.

10

Unit-III

5. Write a C++ program using, the concept of operator overloading.

10

OR

Explain the various types of Inheritance using a suitable example.

10

Unit-IV

6. Explain exception handling mechanism in C++ with an example.

10

OR

Writes notes on the following :

- a) Try, catch, throw block of exception handling
- b) Explain file mode operations.
