Unit IV

8. (a) What is multiplexer ? What is its application ? Explain its working by considering a basic four-input multiplexer. **8**

   (b) What is a decoder ? How is it different from demultiplexer ? Explain working of a 3-to-8 decoder. **7**

9. (a) What is a magnitude comparator ? Explain its working. **5**

   (b) Explain working of a full adder. Draw its logic symbol, symbol using 2-half adders and logic diagram. **10**

B-211

B.C.A. EXAMINATION, May 2016

(Second Semester)

(B. Scheme) (Main & Re-appear)

DIGITAL CIRCUITS AND LOGIC DESIGN

BCA-102-B

Time : 3 Hours]   [*Maximum Marks : 75*

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all. Q. No. **1** is compulsory. Attempt *one* question from each Unit.

1. (a) Express $(101100101)_2$ in decimal.

   (b) Obtain 1's and 2's complements of binary number $(1000010)_2$.

(c) Prove the Boolean theorem $x(x+y)=x$ by truth table.

(d) Why universal gates are important ? Write names of these gates.

(e) Give one example of combination circuit.

Unit I

2. (a) Convert $(115)_{10}$ and $(235)_{10}$ hexadecimal numbers. **8**

(b) What is the role of error-detecting codes and error correcting codes in data transmission ? Explain. **7**

3. (a) A 7-bit Hamming code is received as 0101101. What is its correct code ? **9**

(b) Define EBCDIC code. How is it different from ASCII codes ? **6**

Unit II

4. (a) Write basic laws of Boolean Algebra. **5**

(b) If $\bar{A}B + C\bar{D} = 0$ then prove that : **10**
$$AB + \bar{C}(\bar{A}+\bar{D}) = AB + BD + \bar{B}\bar{D} + \bar{A}CD$$

5. (a) Convert the function, $AB + B\bar{C}D + \bar{A}D$ into canonical form. **6**

(b) Simplify the expression $Y = \Pi(0, 1, 4, 5, 6, 8, 9, 12, 13, 14)$, using the K-map method. **9**

Unit III

6. (a) What are universal gates ? Draw their logic symbol and truth table. Realize AND gate using any *one* universal gate. **9**

(b) Realize NAND using NOR gate. **6**

7. (a) Realize logic expression
$$Y = (A+B)(\bar{A}+C)(B+D)$$
using basic gates. **7**

(b) Minimize the given Boolean expression using K-map and implement and simplified function using NOR gates only : **8**
$$F(w, x, y, z) = \Sigma_m(0, 1, 2, 9, 11, 15) + \Sigma_d(8, 10, 14)$$

7. (a) Differentiate between structure and unions in detail. **5**

(b) What is the concept of pointers ? Also explain self-referential structures in detail. **10**

Unit IV

8. (a) Discuss the concept of storage classes in detail. **8**

(b) Write a program to sort the elements of an array using bubble sort technique. **7**

9. (a) Differentiate between the concept of linear search and binary search. Also specify which type of searching is more efficient. **7**

(b) Write a program to count the number of words present in text file 'abc.txt'. **8**

B-212

B.C.A. EXAMINATION, May 2016

(Second Semester)

(B. Scheme) (Main & Re-appear)

PROGRAMMING IN C

BCA-104-B

Time : 3 *Hours*]   [*Maximum Marks* : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Q. No. **1** is compulsory. Attempt any *Four* questions from unit by selecting *one* question from each Unit.

1. (a) Discuss the following terms : **15**

    (i) Identifiers

    (ii) Type Conversion

    (iii) Prototypes

(b) Differentiate between the following :

    (i) getch() and getche()

    (ii) #include<filename>and#include" filename"

    (iii) strcpy() and strncpy()

    (iv) call by value and call by reference.

(c) What do you mean by standard in library/ user-defined functions ?

(d) What are unary operators ? Give example.

(e) What is the significance of main() function ?

Unit I

2. (a) What do you mean by Preprocessor directives ? Explain. **7**

(b) Write short notes on the following : **8**

    (i) Flow charts

    (ii) Modular Programming.

M-B-212   2

3. (a) Differentiate between functions and macros with suitable example. **6**

(b) Explain various data types supported by C. **9**

Unit II

4. (a) Write a program to find the roots of a quadratic equation. **7**

(b) Write a function which receives an integer number and returns the factorial of this integer number. Call this function from main() and print the result in main(). **8**

5. (a) What do you mean by recursion ? Explain with example. **6**

(b) What is the significance of 'break', 'continue' and 'goto' statements ? **9**

Unit III

6. (a) What are arrays and how that are processed ? Also explain various types of arrays in detail. **8**

(b) Define Strings. Also write a program to concatenate two strings. **7**

(3-34) M-B-212   3   P.T.O.

9. (a) Explain, how you can give different 3D effects to text in CorelDraw. **10**

(b) What is the use of transformations ? Explain briefly. **5**

B-214

B.C.A. EXAMINATION, May 2016

(Second Semester)

(B. Scheme) (Main & Re-appear)

BCA-108-B

DESKTOP PUBLISHING

Time : 3 Hours]   [*Maximum Marks : 75*

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Four* questions from Sections A, B, C and D, selecting at least *one* question from each Section. Q. No. **1** is compulsory. All questions carry equal marks.

1. (a) Name *three* national dailies published in our country in English.

   (b) Write *three* sentences in support of visual communication.

   (c) Define sub path ? Give *one* example.

   (d) Write *three* uses of natural pen in Coral.

   (e) Write different image modes used in photoshop. 5×3=15

Section A

2. Write and briefly explain any *two* digital printing technologies being used nowadays. 15

3. (a) How is screen printing different from offset printing ? 5

   (b) Compare and contrast the features of Inkjet printer and Laser printer. 10

Section B

4. Is it necessary to have right visual hierarchy in the designs ? How is it tested ? 15

5. Explain the role of harmony, veriety and balance in the design of a good visual interface. 15

Section C

6. What is the need to resize/down-sample the images ? Explain the process of resizing the image in photoshop. 15

7. (a) Write the names of any *five* color mocks supported by photoshop. 7½

   (b) How does dpi affect the quality of an image ? Explain with suitable example. 7½

Section D

8. Explain the use of the following Corel tools :
   (a) Knife
   (b) Eraser
   (c) Freehand
   (d) Shape
   (e) Pick. 15

B-215

B.C.A. EXAMINATION, May 2016

(Second Semester)

(B. Scheme) (Main & Re-appear)

ENGLISH-II

HUM-502-B

Time : 3 *Hours*]   [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : All questions are compulsory.

Unit I

1. Do as directed. (Attempt any *ten*) : 10×2=20
   (a) Correct/complete the sentences :
      (i) If you had worked hard, you should get passed.

(ii) Unless Geeta is invited, she may attend the party.

(iii) The test will be postponed if it rained.

(iv) He wept............he heard the news.

(v) Wait here............I come back.

(vi) The main............gave me this information refused to disclose his name.

(b) Change the voice :

(i) Quinine teates bitter.

(ii) Someone was knocking at the door.

(iii) One ought to do one's duties.

(iv) Why have you missed the train ?

(v) The ball did not hit me on the head.

(vi) May you live long !

Unit II

2. (a) One word substitution (attempt any *four*) :

(i) One who is unable to pay one's debts.

(ii) A person who leaves his country to settle into in some other country.

(iii) One who his is indifferent to pain and pleasure.

(iv) That which cannot be read.

(v) One who is able to make an eloquent speech.

(vi) That cannot be reached.   4

(b) Write the meaning of the given etymological roots/prefix/suffix and make a word (attempt any *four*) :

intra, sub, bene, mal, hyper, micro, semi, multy.   4×2=8

(c) Distinguish between the following word by using them in sentences (attempt any *four* pair) :   4×2=8

Adapt and adopt, allusion and illusion, formally and formerly, lose and loose, stationary and stationery.

Unit III

3. (a) Transcribe the following into IPA : (any *five*)   5

    (i)   chair

    (ii)   garaga

    (iii) tour

    (iv) music

    (v)   autumn

    (vi) honour

    (vii) cassette.

  (b) Mark primary stress on the following words (any *five*) :   5

    (i)   remove

    (ii)   unhappy

    (iii) commit

    (iv) needle

    (v)   honour

    (vi) invoice.

  (c) Write the weak form of the underlined words (any *five*) :   5

    (i)   Give it to <u>him</u>.

    (ii) I <u>have</u> done my work.

    (iii) How <u>do</u> you do ?

    (iv) This is <u>her</u> book.

    (v) We <u>had</u> never seen this before.

    (vi) The <u>old</u> is gold.

  (d) Make a formal speed on the topic of Islamic Terrorism.   5

Unit IV

4. (a) Discuss different modes of listening. Which one among them is the best mode and why ?   5

  (b) Discuss any dialogue of a Hindi Movie in English in about 200 words.   5

  (c) What do you mean by effective listening ? How is listening different from speaking ?   5