Reg. No. :

Question Paper Code : 51511

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

First Semester

Civil Engineering

GE 2112/CS 16/080230001 — FUNDAMENTALS OF COMPUTING AND COMPUTER PROGRAMMING

(Common to All Branches)

(Regulation 2008)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List any two important characteristics of computers.

2. List some of the key hardware and software technologies of fifth generation computers.

3. How will you convert a binary number to a gray code? What is the gray code equivalent of 110011?

4. What do you mean by system software? Give examples.

5. Differentiate between Internet and World Wide Web.

6. What are the protocols used for mail transfer?

7. List any two characteristics and two advantages of pseudo code.

8. Illustrate the structure of a C program.

9. State any two library functions for string handling and their purpose.

10. List any two preprocessor directives in C.

PART B — (5 × 16 = 80 marks)

11. (a) What do you mean by Computer generations? Discuss in detail about all the generations of computer.

Or

(b) (i) Subtract 1010110 from 1101101 using 2's complement method. (5)

(ii) Subtract 153 from 277 using 10's complement method. (5)

(iii) Convert the binary number 101011110011 to hexadecimal number. (3)

(iv) Convert the octal number 45732 into its binary equivalent. (3)

12. (a) (i) List the different types of software. Explain and give examples. (8)

(ii) Define the terms compiler, preprocessor, interpreter, assembler. (8)

Or

(b) Discuss about
(i) Electronic mail (4)
(ii) HTTP (4)
(iii) FTP (4)
(iv) Usenet. (4)

13. (a) Discuss about algorithm, flowchart and pseudo code and elaborate their role while writing a program, Write an algorithm, draw a flowchart and write pseudocode for the problem of generating the triangular number sequence 1,3,6,10,15,21,28,36,45..... [Given value of the nth term = $n^*(n + 1)/2$].

Or

(b) Explain about word processing software and presentation software in detail.

14. (a) Discuss about the need and different types of looping statements in C. Illustrate through examples.

Or

(b) Discuss about the need and different types of branching statements in C. Illustrate through examples.

15. (a) Differentiate between the following concepts and give example for each.

(i) Structure and union (8)

(ii) Call by reference and call by value. (8)

Or

(b) (i) Discuss about functions in C. (4)

(ii) Write a C function to calculate the factorial of a given number and use it in the main program to calculate the binomial coefficient of a given number. Given binomial coefficient

$$\binom{n}{k} = n! \div \left(k! \times (n - k)!\right).$$ (12)