E 9757 (Pages : 3) Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, NOVEMBER 2014

First Semester

Vocational Course—COMPUTER FUNDAMENTALS

(For Model II B.Sc. Mathematics)

[2013 Admission onwards]

Time : Three Hours Maximum : 80 Marks

Part A (Very Short Answer Questions)

Answer **all** *questions briefly.*
Each carries 1 mark.

1. Write any *four* different types of applications of computers.
2. What are fixed point and floating point numbers ? Give one example each.
3. What are non-weighted codes ? Give an example.
4. Why secondary memories are essential ?
5. What is cache memory ?
6. Define hardware and software.
7. Define system software and application software.
8. What is entertainment software ? Give three examples.
9. Explain the terms : "bandwidth" and "baud".
10. List some uses of Internet in education sector.

(10 × 1 = 10)

Part B (Brief Answer Questions)

Answer any **eight** *questions.*
Each question carries 2 marks.

11. Describe the key features of third generation computers.
12. Write an example for octal number system to show that the same digit may signify different values depending on the position it occupies in the number.
13. With appropriate examples, explain how binary digits are used to express the integer and fractional parts of a number ?
14. With appropriate examples, explain the rules for binary subtraction using the 1's and 2's complement methods.

15. Describe how a word is stored in a memory and discuss what is meant by its address ?
16. Describe and compare sequential access memories, random access memories and read only memories.
17. What is an optical disk ? How are data recorded / read from an optical disk ?
18. What is disk formatting ? Why it is needed ?
19. What is a mneumonic ? How it is helpful in case of computer languages ? Give examples.
20. A machine language instruction has two-part format. Identify these parts and discuss the function of each.
21. What is an optical fiber ? How it is used for data communication ? What are its merits ?
22. What is a LAN ? What are its objectives ?

(8 × 2 = 16)

Part C (Descriptive / Short Essays)

Answer any **six** *questions.*
Each question carries **4** *marks.*

23. Explain the main functions and characteristics of computers. What are the limitations ?
24. Perform the following conversions :
    (i) 1001.1001_2 to hexadecimal and decimal.
    (ii) 1001.1001_{16} to octal and decimal.
25 (a) Add the following decimal numbers using 2's complement method : – 48 and – 32.
    (b) Subtract the decimal + 59 – (+ 77) using 2's complement method.
26 Explain how the addition of the decimal numbers 2 and 3 takes place with the help of ALU in a computer ?
27 What is a mouse ? Explain how it is used to notify the system of a particular user choice out of a given set of choices on a monitor's screen ?
28 Explain the printing mechanism of an ink-jet printer ? Compare its performance with laser printer.
29 With an example, explain the role of control unit in the execution of an instruction.
30 What is a communication protocol ? What normal functions are performed by these protocols ?
31 What is FTP ? List the steps involved in downloading a file by using FTP service ?

(6 × 4 = 24)

Part D (Long Essays)

Answer any **two** *questions.*
Each question carries 15 *marks.*

32. Discuss the different hardware technologies used in the five different generations of computers ? Compare their performances.

33. Explain the working of dot matrix and laser printers and plotter used as the output units of a digital computer ?

34. Discuss the important features of high level, assembly level and machine level languages in programming computers. Explain how and in what context each one of the above languages are used ?

35. What is network topology ? Describe any four different types of network topologies in common use. Write their important features, advantages and disadvantages.

(2 × 15 = 30)