D 53550 **(Pages : 2)** **Name**

Reg. No. . . . . .

FIRST SEMESTER B.Sc. DEGREE EXAMINATION JANUARY 2014

(UG–CCSS)

Complementary Course – Computer Science

CS 1C 01— COMPUTER FUNDAMENTALS AND APPLICATION PACKAGES

Time : Three Hours Maximum : 30 Weightage

I. Answer *all* questions :

1. The total number of digits available in the number system determines the value of its _____
2. In EBCDIC, the character representation of letter S is _____
3. _____ coding scheme provides a unique number for every character independent of the platform, program and language.
4. $(1010110)_2 + (1011010)_2 = (\_\_\_\_\_)_2$.
5. When a key is pressed on the keyboard, _____ standard converts the keystroke into the corresponding bits.
6. _____ is a place where actual execution of instructions takes place during data processing.
7. RISC is _____
8. _____ is an electronic circuit that operates on one *or* more input signals to produce standard output signals.
9. The speed of a processor directly depends on _____
10. _____ provides a screen with graphic icons *or* menus to give instructions to the computer.
11. To interpret and executes various instructions, CPU uses a number of special memory units called _____
12. The technology used in banking industry for faster processing of large volumes of cheques is termed as _____

(12 x = 3 weightage)

Turn over

II. Answer *all* questions :

13. Define the term collating sequence.
14. Subtract $(011011)_2$ from $(110111)_2$ using 1' s complement method.
15. Find the complement of the Boolean expression A . *(B + C)* . *(B + C).*
16. State De Morgan's laws in Boolean algebra.
17. What are the two main components of CPU of a computer ?
18. What is Cache memory?
19. What is WORM?
20. What are peripheral devices ?
21. What is a non-impact printer ?

(9 x 1 = 9 weightage)

III. Answer any *five* questions :

22. Convert the following to binary: $(3BC)_{16}$, $(534)_8$, $(1243)_{10}$, $(1.234)_8$.
23. Multiply the binary numbers 101111 and 111.
24. Write the EBCDIC coding for the word 'HIT' in both binary and hexadecimal notations. How many bytes are required to store this word using EBCDIC ?
25. Construct the logic circuit diagram for the Boolean expression by using NAND gates only : $(A + \overline{B})$. *(A* + C). *(B + C).*
26. Express the Boolean function $F = A + B . C$ in sum-of-products form.
27. Differentiate between random access and sequential access storage units.
28. What are the limitations of image scanner ?

(5 x 2 = 10 weightage)

IV. Answer any *two* questions :

29. Write short notes on :
    (a) Unicode.
    (b) Canonical forms of Boolean functions.
    (c) Combinational circuits.
    (d) Storage evaluation criteria.
30. With the help of a neat diagram, explain the processor and memory architecture of a computer system.
31. Explain any *two* input and output devices.

(2 x 4 = 8 weightage)