Reg. No……...…

Name.…….....……

B. Voc. DEGREE EXAMINATION, OCTOBER, 2016

FIRST SEMESTER- CORE COURSE (SOFTWARE DEVELOPMENT)

VSD1G02TB - COMPUTER FUNDAMENTALS

Time: Three Hours **Maximum: 80 Marks**

PART A

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

1. The number of digits in BINARY number system…….

   a.2 b.8

   c.16 d.1

2. How is a J-K flip-flop made to toggle?

   a. $J = 0, K = 0$ b. $J = 1, K = 0$

   c. $J = 0, K = 1$ d. $J = 1, K = 1$

3. The output of a NOT gate is LOW ……. ….

   a. all the time b. when the input is LOW

   c. when the input is HIGH d. when all inputs are HIGH

4. BINARY equivalent of $(25)_{10}$

   a.11011 b.11110

   c.11001 d.10011

5. A.A’ = ……
6. 1 BYTE consists of ….. bits.
7. In Digital Computers the negative numbers are represented in ……. Format.
8. K map, K stands for ……
9. Boolean Algebra was introduced by …….
10. Flip-Flops can store ……. Bit of information at one time.

(10×1=10)

Part B

*Answer any **Eight** questions in **one** or **two** sentences*
Each question carries 2 marks

11. Define Radix of a number system.

12. Give the Logic symbol and truth table of AND gate.

13. Which gates are called as the Universal gates?

14. State the commutative property of Boolean Algebra.

15. Find the Maxterm designator of A+B'+C+D.

16. Define CACHE Memory.

17. List the applications of flip-flop.

18. Give the applications of Demultiplexers.

19. Give two forms of Boolean Expression.

20. List the different number systems.

21. Explain the steps to convert binary to decimal.

22. Define a memory.

(8×2=16)

Part C

*Answer any **Six** questions in 50 words each*
*Each question carries **4** marks*

23. Explain triggering of flip-flops.

24. Apply DeMorgan's theorm to the following expressions.

    a. (A+B+C+D)' + (ABCD)'

    b. ((A+B)(C+D))'

25. Differentiate Static and Dynamic RAM.

26. State DeMorgan's Theorm with Truth Tables.

27. Distinguish between synchronous and asynchronous sequential circuits.

28. What is race around condition and how to avoid it?

29. Explain JK flip-flop.

30. What do you mean by analyzing a combinational circuit?

31. Explain Counter.

(6×4=24)

Part D

*Answer any **two** questions in 100 words*
Each question carries 15 marks.

32. Construct a truth table for the following standard POS expression.

Y=(A+B+C').(A+B'+C).(A'+B+C').(A'+B'+C')

33. Explain shift registers.

34. Discuss BCD addition with examples.

35. Explain full-adder circuit with block diagram and truth-table.

(2×15=30)