Reg. No. : ....

Name : ....

V Semester B.Sc. Degree (CCSS-Reg./Supple./Imp.)
Examination, November 2015
CORE COURSE IN COMPUTER SCIENCE
5B11 CSC(E06) : Digital Systems and Microprocessors (Elective)

Time : 3 Hours   Max. Weightage : 21

Instructions :   Section **A** : Answer **all** questions.
Section **B** : Answer **any five** – Weightage **1** for **each** question.
Section **C** : Answer **any five** – Weightage **2** for **each** question.
Section **D** : Answer **any one** – Weightage **4**.

SECTION – A

Answer **all** question. Weightage for a bunch of **4** questions is **1**.

1. Given any logic circuit with NOR gates, one can replace it with a bubbled _____ gate.

2. _____ is a visual display of SOP solution.

3. If the inputs to a BCD to decimal decoder is 1010 the output will be _____

4. _____ is an example of asynchronous counter.   **(W =1)**

5. Physical address in 8086 has _____ bits.

6. Interrupt INTR can be masked using _____ bit in PSW.

7. 8255 has _____ programmable I/O pin connections.

8. How many 8259A IC are required to have 64 interrupt inputs ?   **(W =1)**

P.T.O.

SECTION – B

Answer **any five** questions. Weightage **1** for **each**.

9. What is a logic gate ?

10. State the associative property of Boolean algebra.

11. Mention two uses of decoder.

12. Define race around condition.

13. How many interrupt lines does 8086 have ? What do they do ?

14. What is the purpose of MN/MX pin ?

15. What is priority resolver ?

16. What is the advantage of using DMA in data transfer ?   (5×1=5)

SECTION – C

Answer **any five** questions. Weightage **2** for **each**.

17. Differentiate a demultiplexer and a decoder on the basis of their design and function.

18. Draw the logic circuit for

    $Y = (\overline{A} + B + C)(A + B + \overline{C})$.

    Use Boolean algebra to simplify the equation. Then draw the corresponding logic circuit.

19. How an SR flip-flop can be converted to J-K flip-flop ?

20. What are synchronous and asynchronous counters ?

21. Explain the functions of various registers in 8086.

22. Why 8086 uses 20 bit address bus ? How I/O devices are addressed ?

23. What are the addressing modes of 8086 ? Explain.

24. How 8255 IC act as a peripheral interface with 8086 microprocessor ?   (5×2=10)

SECTION – D

Answer **any one** question. Weightage **4** for **each**.

25. a) What is propagation delay ? How it affects the digital circuits ?

    b) With neat diagrams explain mod-3 counter.

26. What is 8254 ? Discuss its various operating modes and areas of applications.   (1×4=4)

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