

KATHMANDU UNIVERSITY
End Semester Examinations
August, 2018

Level : B.E.
Year : III
Time : 2 hrs. 30 mins.

Course : COMP 306
Semester: II
F.M. : 40

SECTION "B"
[6Q×4=24 marks]

Attempt *ANY SIX* questions.

1. Briefly describe how signals are converted from analog signals to digital signals.
2. Explain in detail about different specifications considered, while evaluating the processor.
3. Describe the process of boot sequence while executing from ROM using RAM for data.
4. Discuss memory cell operation and SRAM cell structure in detail.
5. Briefly explain the basic layers of Infrared protocol architecture.
6. What do you understand by co-design process while designing embedded system, discuss in detail.
7. Explain different testing method while evaluating embedded system.

SECTION "C"
[2Q.×8=16 marks]

Attempt *ANY TWO* questions.

8. How communication is established between Bluetooth devices? Discuss Bluetooth specification in detail. [4+4]
9. a. Discuss how processors are categorized into RISC and CISC architecture. [4]
b. For an 8051 microcontroller, calculate the total time delay of the program assuming two crystal frequencies of 11.0592 MHz and 16 MHz. [4]

```
MOV P2, 11110000B
CLR P2.1
MOV A,#05
MOV R0,#10
dd: MOV P1, #11111001B
    MOV P2, #11110000B
    DJNZ R0,dd
```

10. If you are assigned to design a Smart Phone with the following features
 - a. Support Java Application.
 - b. Wireless LAN, WAN Support.
 - c. Multimedia Support.

Choose the proper hardware and software specifications needed to design such system. Assume other technical features if you think you can better design such system and justify your design.

