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PGIIS-822 B-19
M.Sc. III Semester (CBCS) Degree Examination
ELECTRONICS AND INSTRUMENTATION
Embedded Systems
Paper : HCT 3.1

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

1. Answer the questions as per the instructions
2. Write the question numbers clearly.

PART - A

1. Answer any **Eight** of the following : **(8×2=16)**
- a. Mention any two characteristics of an Embedded system.
 - b. What is the purpose of Embedded system?
 - c. What is the difference between ASIC and general purpose processor?
 - d. Write an embedded 'C' program to generate 8 - bit binary counter sequence through port of 8051.
 - e. What is the role of kernel?
 - f. What is task control block?
 - g. What are the resolutions of ADC0 and ADC1 of C8051F020?
 - h. Write the bit pattern of TMOD register.
 - i. Draw the internal diagram of PLD port line.
 - j. Draw the block diagram of Air quality monitoring system.

PART - B

Answer any **Four** of the following : **(4×7=28)**

2. Draw the block diagram of typical embedded system and explain.
3. Explain the application areas of embedded system with examples.
4. Write a note on the processor selection in embedded systems.
5. Explain the working of on - chip UART0 of C8051F020.
6. Discuss the comparative features of C8051F020, C8051F060 and C8051F350.
7. With diagram, explain C8051F60 based level control system.

PART - C

Answer any **Three** of the following :

(3×12=36)

8. Discuss the classification of Embedded systems with examples?
 9. Describe the Hardware and software features of Automatic chocolate vending machine.
 10. With the help of diagram, explain the Architectural features of C8051F020.
 11. With neat schematic, explain working of C8051F020 based DC motor position control system.
 12. Write short notes on any **two** of the following : **(2×6=12)**
 - a. System - on - Chip (SoC)
 - b. RTOS
 - c. ADCO Module.
 - d. Lock - in Amplifier.
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