19CTU28

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Fifth Semester)

Branch – **COMPUTER TECHNOLOGY**

EMBEDDED SYSTEMS

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1. Embedded system is _____.
   (i) An Electronic System (ii) A Pure Mechanical System
   (iii) An electro Mechanical System (iv) (i) or (iii)

2. Which of the following memory type is suited for development purpose?
   (i) EEPROM (ii) FLASH
   (iii) UVEPROM (iv) (i) and (iii)

3. Which of 8051 can be broadly classified into CPU Registers and Scratchpad Registers?
   (i) Registers (ii) Interrupts
   (iii) Oscillator Unit (iv) Automotive

4. Which of the following does not have a stack frame building?
   (i) hardware interrupt (ii) software interrupt
   (iii) non-maskable interrupt (iv) fast interrupt

5. How an embedded system communicate with the outside world?
   (i) Memory (ii) Output
   (iii) Peripherals (iv) Input

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6. a) Explain Purpose of Embedded Systems.
   OR
   b) Classify PCB and Passive Components.

7. a) Point out characteristics of an Embedded System.
   OR
   b) Discuss HECUs.

8. a) State Interrupts.
   OR
   b) Design 8051 program memory Organization.

9. a) Point out Unified Modeling Language (UML).
   OR
   b) Classify Addressing models in 8051.

10 a) Prepare Emulator and Debugging.
   OR
   b) Produce the trends in embedded system.

Cont...

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a) Highlight the different Classification of Embedded Systems. Give an example for each.

OR

b) Differentiate between RISC vs. CICS Processors/ Controllers.

12 a) Elaborate the Non- Operational Quality Attributes.

OR

b) Design a functional Block diagram of Washing Machine.

13 a) Elucidate the Factors to be considered in selecting a controller.

OR

b) Dissect Oscillator Unit with Block diagram.

14 a) Categorize the different instruction sets in 8051.

OR

b) Differentiate Hardware and Software Trade-off.

15 a) Demonstrate Embedded Product Development Life Cycle.

OR

b) Point out the types of File Generated on Cross Compilation.

Z-Z-Z END