

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2024  
(First Semester)

Branch – APPLIED ELECTRONICS

MICROCONTROLLER

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 × 1 = 10)

- 1 How many types of architectures are available, for designing a device that is able to work on its own?  
a) 3                      b) 2                      c) 1                      d) 4
- 2 Which architecture is followed by general purpose microprocessors?  
a) Harvard architecture    b) Von Neumann architecture  
c) None of the mentioned    d) All of the mentioned
- 3 Which activity is concerned with identifying the task at the final embedded systems?  
a) scheduling  
b) task-level concurrency management  
c) high-level transformation  
d) compilation
- 4 Which level simulates the algorithms that are used within the embedded systems?  
a) algorithmic level                      b) switch level  
c) gate level                                      d) circuit level
- 5 Which of the following devices are specifically being used for converting serial to parallel and from parallel to serial respectively?  
a) microcontroller    b) timers    c) counters    d) registers
- 6 Why are solid-state relays advantageous over electromechanical relays?  
a) they need less voltage to be energised  
b) they need zero voltage circuit  
c) they need less current to be energised  
d) none of the mentioned
- 7 What condition error occurs in the servo tracking A/D Converter?  
a) Slow change input                      b) Rapid change in input  
c) No change in input                      d) All of the mentioned
- 8 How many clock pulses do a successive approximation converter requires for obtaining a digital output.  
a) Twelve                                      b) Six  
c) Eight    d) None of the mentioned
- 9 Which operations are not feasible to perform by simulator programs in accordance to real time programming?  
a) Memory Operations                      b) I/O Operations  
c) Register Operations                      d) Debugging Operations
- 10 What is/are the consequences of driving the LED in the form of an output function?  
a) Pin sources the current when made low without glowing LED  
b) Pin sinks the current when made high without glowing LED  
c) Pin sources the current when made high by glowing LED  
d) Pin sinks the current when made low by glowing LED

Cont...

**SECTION - B (35 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

11.a. Explain about PIC Microcontroller Family.

(OR)

11.b. Discuss about Status Register.

12.a. Describe the function Control statement.

(OR)

12.b. State the functions of pointer and arrays.

13.a. Explain the timers programming.

(OR)

13.b. Classify the function of TRIS Registers.

14.a. Classify the function of Interrupt Programming.

(OR)

14.b. Discuss the function about Interrupt Operation.

15.a. Explain the advantages of LCD Interface.

(OR)

15.b. Elucidate the term DC Motor interface.

**SECTION -C (30 Marks)**

Answer **ANY THREE** questions

**ALL** questions carry **EQUAL** Marks

(3 × 10 = 30)

16 Compare Harvard Architecture and Von Neumann Architecture.

17 Give the details about PIC16 C function and structure.

18 Draw with neat sketch I/O Ports diagram.

19 Analyze about Priority of interrupts and Peripheral Interrupts.

20 Explain the function of Stepper motor interface.

Z-Z-Z

END