**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, November 2022**

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|  | **3BC5120** | Roll No. | Total Printed Pages: 1 |
| **3BC5120** |  |
| BCA III Year V-Semester (Main/Back) End Semester Examination, November 2022  **(AIPA & DS)** | |
| **BAP05108.2 / BCD05108.2 : Embedded Systems** | | | |

# Time: **3** Hours. Total Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of following supporting material is permitted during examination for this subject.

# **1.--------------------------Nil--------------------** **2.------------------Nil-----------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** | **Bloom Level** |
| **Q.1** | **(a)** | Ensure how AVR Microcontroller is used as embedded systems? | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | Elaborate the term Microprocessor in detail? | **(6)** | **Knowledge** |
|  |  | **OR** |  |  |
| **Q.2** | **(a)** | Demonstrate the difference between microprocessor and microcontroller. | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | Justify the features of Arduino as an Embedded | **(6)** | **Create** |
|  |  | **UNIT-II (CO2)** |  |  |
| **Q.3** | **(a)** | Write a short note on Arduino IDE based File, Edit, Sketch and Tools | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Express functional pin diagram of Arduino along with pin functions | **(6)** | **Create** |
|  |  | **OR** |  |  |
| **Q.4** | **(a)** | Compare C Programme and Embedded C Programming? | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | Explain any simple IDE Programme for LED Blinking. Or “Hello World” | **(6)** | **Evaluate** |
|  |  | **UNIT-III (CO3)** |  |  |
| **Q.5** | **(a)** | Construct a program for IR sensor for LED connected for pin 13 and sensor output pin 2. | **(6)** | **Create** |
|  |  |  |  |  |
|  | **(b)** | Prepare an analog input program using pot. | **(6)** | **Evaluate** |
|  |  | **OR** |  |  |
| **Q.6** | **(a)** | Sketch the interfacing diagram of seven segment display and explain it’s functioning. | **(6)** | **Apply** |
|  |  |  |  |  |
|  | **(b)** | Write a program to show 0 to 9 on seven segment display. | **(6)** | **Create** |
|  |  | **UNIT-IV (CO4)** |  |  |
| **Q.7** | **(a)** | Write short note on local and global variable | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Explain switch case with example. | **(6)** | **Understand** |
|  |  | **OR** |  |  |
| **Q.8** | **(a)** | Write short note on function. | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | Give the example of condition base switch case | **(6)** | **Apply** |
|  |  | **UNIT V (CO5)** |  |  |
| **Q.9** | **(a)** | What is serial communication in RS 232? | **(6)** | **Knowledge** |
|  |  |  |  |  |
|  | **(b)** | What are the modes of data transfer in serial communication and characteristics of serial communication? | **(6)** | **Understand** |
|  |  | **OR** |  |  |
| **Q.10** | **(a)** | Explain handshaking in RS232. | **(6)** | **Analyze** |
|  |  |  |  |  |
|  | **(b)** | Explain Xon/Xoff protocol with flow chart. | **(6)** | **Create** |