



**UNIVERSITY OF NORTH BENGAL**  
BCA Honours 3rd Semester Examination, 2020

**SEC1 (P1)-BACHELOR OF COMPUTER APPLICATION (35)**

**ARDUINO SENSORS**

Full Marks: 60

**ASSIGNMENT**

*The figures in the margin indicate full marks.*

**The question paper contains SEC-35:E-1, SEC-35:E-2 and SEC-35:E-3.  
The candidates are required to answer any *one* from *three* courses.  
Candidates should mention it clearly on the Answer Book.**

**SEC-35:E-1**

**ARDUINO SENSORS**

**Answer any *three* Assignments from the following** 20×3 = 60

1. Discuss the Architecture of Arduino Sensors in detail with the help of a block diagram. What are the different applications where the Arduino sensors can be used? 12+8=20
2. Explain Arduino Control structure and Arduino Functions in detail. 20
3. Explain Arduino operators and Arduino Sketch Structure in detail. 20
4. Explain LED with Arduino, Working of LED and Sketch for blinking LED using delay function. 20
5. Explain Interfacing LCD display with Arduino and Interfacing different sensors with Arduino Sensor. 20
6. Discuss the working of IR sensor and Pinouts of IR sensor. 20

**SEC-35:E-2**

**WEBSITE DESIGN WITH HTML AND PHP**

**Answer any *three* Assignments from the following** 20×3 = 60

1. (a) Explain Relative Links and Absolute Links. What are Link Attributes? How do you Use the ID Attribute to Link within a Document? 5+2+3

- (b) Write down the HTML code to put an Image on a Page. Discuss the method of Using Images as Links and putting an Image in the Background of a webpage. 5+5
2. (a) Explain the method to create a Table in HTML. Write down the HTML code to create a table. 5+5  
(b) Explain XML and its Goals and also explain XML Structure and Syntax. 10
3. Explain Handling HTML form with PHP and also discuss Basic Input and Attributes, Other Kinds of Inputs, Styling forms with CSS, Where to Go from Here Capturing Form Data, GET and POST form methods. 20
4. Explain the significance of PHP. Discuss inventions and versions, scope, important tools and software requirements of PHP. Also explain PHP variables and constants and Types of data in PHP. 5+7+8
5. Explain PHP functions by giving example. Explain call by value and call by reference in functions. 10+10
6. (a) Discuss Markup Languages and HTML. Explain the need and use of Markup Language. 10  
(b) Explain the function of Head, the Body, Colors, Attributes, Lists, ordered and unordered. 10

**SEC-35:E-3**

**PYTHON PROGRAMMING**

**Answer any *three* questions**

20×3 = 60

1. (a) Design a python program to calculate area of triangle and circle and print the result. 10  
(b) What is an algorithm? Discuss the characteristic of an algorithm. Write some advantage of algorithm. Design an algorithm to find the area and perimeter of rectangle. 10
2. Explain the different flow control statement with a suitable example in python programme. 20
3. (a) Define flowchart. Design a flowchart to find the factorial of any number. 10  
(b) What do you mean by 'error' in programming? Discuss the different types of error that occurs in programming with example. 10
4. What do you mean by Programming Methodologies? Discuss the different types of programming methodologies with their advantages and disadvantages. 20
5. What is meant by Problem Solving? Discuss the different types of problem solving techniques in detail. 20
6. (a) Write a program to find the first 'n' terms of Fibonacci series. 10  
(b) What is Python? Discuss the different features of Python. 10

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