

# CBCS SCHEME

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15CS81

## Eighth Semester B.E. Degree Examination, July/August 2021 Internet of Things and Applications

Time: 3 hrs.

Max. Marks: 80

*Note: Answer any FIVE full questions.*

- 1 a. What is IOT? Explain in detail on genesis of IOT. (08 Marks)  
b. Explain access network sublayer with neat diagram. (08 Marks)
- 2 a. Describe IOT World Forum (IOTWF) standardized architecture. (08 Marks)  
b. Write a short note on IOT impact in real world. (08 Marks)
- 3 a. What is Zigbee? Explain high level zigbee protocol stack. (08 Marks)  
b. Discuss the universal deployments categories of IEEE 802.15.4 protocol. (08 Marks)
- 4 a. Explain LoRaWAN layers architecture and LoRaWAN security. (08 Marks)  
b. What are Actuators? Give the comparison of sensors and actuator functionalities with humans. (08 Marks)
- 5 a. What are the key advantages of Internet Protocol (IP)? Explain each of them. (08 Marks)  
b. Explain DIO and DAO messages movement through RPL overview. (08 Marks)
- 6 a. Discuss the IOT application transport methods (i) Rawsocket scenario for legacy SCADA server. (08 Marks)  
b. Discuss the IOT application transport method (i) Message Queuing Telemetry Transport (MQTT). (08 Marks)
- 7 a. Explain different types of data analytics. (08 Marks)  
b. Illustrate Lambda Architecture. (08 Marks)
- 8 a. List the common challenges in OT security, explain any four of them. (08 Marks)  
b. Describe the Perdue model for control hierarchy. (08 Marks)
- 9 a. Demonstrate the Arduino programming fundamental and pin configurations. (08 Marks)  
b. Interface temperature sensor to the Arduino. (08 Marks)
- 10 a. Describe the Rasberry Pi architecture. (08 Marks)  
b. Write about Python syntax. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

# CBCS SCHEME

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15CS832

## Eighth Semester B.E. Degree Examination, July/August 2021 Modern Interface Design

Time: 3 hrs.

Max. Marks: 80

*Note: Answer any FIVE full questions.*

- 1 a. Discuss any four general principles of UID. (08 Marks)  
b. Write any four differences between GUI and Web Page Design. (08 Marks)
- 2 a. List and explain the characteristics of GUI. (09 Marks)  
b. Explain any four advantages and disadvantages of graphical systems. (07 Marks)
- 3 a. Explain five commandments that are considered for designing for the people. (08 Marks)  
b. According to Theo Mandel, which are the most common usability problems? List them. Explain any three. (08 Marks)
- 4 a. Explain the techniques for determining the user requirements using indirect method. (08 Marks)  
b. What are the guidelines to be followed during detailed interface design that are valuable to the users and developer? Explain. (08 Marks)
- 5 a. Explain the functions of menus. (06 Marks)  
b. Explain briefly any two kinds of graphical menus with neat diagrams. (10 Marks)
- 6 a. Describe the components of a web navigation system with illustration. (08 Marks)  
b. What are the elements of menu content? Explain. (08 Marks)
- 7 a. Explain any two window management schemes. (08 Marks)  
b. Explain how windows are useful. (08 Marks)
- 8 a. Write the advantages and disadvantages of Fransus in web systems. (08 Marks)  
b. Write a note on: (i) Touch screen (ii) Trackball (08 Marks)
- 9 a. Explain the following controls with an example for each:  
(i) Check Boxes  
(ii) Spin Boxes  
(iii) Scroll Bars  
(iv) Balloon tips (08 Marks)  
b. What are operable controls? Explain the purpose, advantages, disadvantages and usage of text boxes. (08 Marks)
- 10 a. Explain cognitive walkthroughs, think aloud evaluation tests conducted in UID. (08 Marks)  
b. Explain any two types of testing prototypes. (08 Marks)

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15IS832

## Eighth Semester B.E. Degree Examination, July/August 2021 Interface Design

Time: 3 hrs.

Max. Marks: 80

*Note: Answer any FIVE full questions.*

- 1 a. What is human computer interaction? Briefly describe the importance and benefits of good interface design. (08 Marks)  
b. Explain the concept of direct manipulation for graphical systems. (04 Marks)  
c. Discuss in detail the characteristics of graphical user interface. (04 Marks)
- 2 a. Discuss the general principles of user interface design (any eight). (10 Marks)  
b. Discuss the characteristics of intranet and internet. Bring out the differences between them. (06 Marks)
- 3 a. Explain in detail the important human characteristics in user interface design (any six). (06 Marks)  
b. List and explain five commandments for design decisions. (05 Marks)  
c. Explain the techniques for determining user requirements using indirect methods (any five). (05 Marks)
- 4 a. List all kinds of graphical menus. Explain any five in detail. (10 Marks)  
b. Explain the structures of menus with illustrations. (06 Marks)
- 5 a. Explain tiled windows and overlapping windows presentation styles with examples. (08 Marks)  
b. Explain radio buttons and check boxes selection controls in detail. (08 Marks)
- 6 a. Explain the characteristics of joystick and touch screen in detail. (08 Marks)  
b. Explain components of window with examples (any eight) (08 Marks)
- 7 a. Explain uses of color and possible problems with color. (08 Marks)  
b. Explain various methods for providing effective feedback to the user. (08 Marks)
- 8 a. Explain the guidelines for using words, sentences, messages and error messages. (08 Marks)  
b. Explain the various factors influencing an icon's usability (any eight). (08 Marks)
- 9 a. Describe the general guidelines for organizing and laying out screens. (08 Marks)  
b. What is usability testing? Explain its importance. (08 Marks)
- 10 a. Explain interactive paper and programmes facades prototypes. (08 Marks)  
b. Write short notes on the following :  
i) Cognitive walkthroughs  
ii) Think aloud evaluations. (08 Marks)

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