

CBCS SCHEME

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17CS81

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

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. What does IOT and digitization mean? Elaborate. (08 Marks)
b. Explain with neat diagram, the one M2M IOT standardized architecture. (06 Marks)
c. What are the different challenges in IOT? (06 Marks)
- 2 a. Discuss IOT World Forum (IOTWF) standardized architecture. (08 Marks)
b. Explain IOT Data Management and compute stack. (06 Marks)
c. Define IOT. Explain the evolutionary phases of Internet. (06 Marks)
- 3 a. List and explain the characteristics and attributes concerned when selecting and dealing with connecting smart object. (10 Marks)
b. What is Zigbee? Explain 802.15.4 physical layer, MAC layer and security. (10 Marks)
- 4 a. Explain in detail wireless sensors network, communication protocol and its limitations. (08 Marks)
b. List and explain different types of sensors. (06 Marks)
c. Write a note on LoRaWAN security. (06 Marks)
- 5 a. Discuss various IOT application transport methods. (10 Marks)
b. Explain 6TiSCH in detail. (10 Marks)
- 6 a. Discuss the need for optimization. (08 Marks)
b. Explain CoAP IOT application layer protocol. (06 Marks)
c. What are the key advantages of Internet protocol? (06 Marks)
- 7 a. Explain the challenges in IOT security. (10 Marks)
b. Explain different components of flexible Net Flow Architecture (FNF). (10 Marks)
- 8 a. Discuss Hadoop Eco-System-Lambda architecture. (08 Marks)
b. Discuss OCTAVE and FAIR formal Risk Analysis. (06 Marks)
c. Compare Big Data and Edge Analytics. (06 Marks)
- 9 a. Explain the following with respect to Arduino programming:
(i) Structure (ii) Function.
(iii) Variables and Data types. (iv) Digital I/O. (10 Marks)
b. Explain different layers of Smart City IOT architecture. (10 Marks)
- 10 a. Explain Smart City security architecture. (08 Marks)
b. Explain Smart City Traffic control architecture. (06 Marks)
c. Write short note on Raspberry Pi operating system. (06 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.

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17CS82

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

Big Data Analytics

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. What is HDFS? Explain its components with a neat diagram. (10 Marks)
b. Explain HDFS safemode and rack awareness, with neat diagram. (10 Marks)
- 2 a. What is MapReduce Program? Explain MapReduce parallel data flow, with neat functional diagram. (10 Marks)
b. What is Nano node federation? Explain NaneNode high availability design with diagram. (10 Marks)
- 3 a. Explain Apache Sqoop Import and Export methods, with neat diagram. (10 Marks)
b. How do you run MapReduce and message passing interface on Yarn architecture?(10 Marks)
- 4 a. Explain with a neat diagram, the Apache Oozie work flow for Hadoop architecture. (10 Marks)
b. What is YARN? Explain Yarn application frame work. (10 Marks)
- 5 a. What is Business Intelligence? List the different BI applications and explain in detail any four applications. (10 Marks)
b. Draw and explain flow of BIDM cycle. Explain the Strategic and Operational decisions. (10 Marks)
- 6 a. Explain CRISP DM cycle, with neat diagram. (10 Marks)
b. Define Data warehouse and illustrate design considerations for data warehouse. (10 Marks)
- 7 a. What is Association Rule? Explain below given rules with suitable examples :
i) Support ii) Confidence iii) Lift. (10 Marks)
b. What is Unsupervised Machine Learning concept? Explain K – Means clustering techniques, with suitable example. (10 Marks)
- 8 a. Write and explain Apriori Algorithm with example. (10 Marks)
b. List and explain the steps for developing an ANN (Artificial Neural Network). (10 Marks)
- 9 a. Discuss the application and practical consideration of Social network Analysis. (10 Marks)
b. Explain the 3 types of Web mining. Use appropriate flow diagrams to represent the same. (10 Marks)
- 10 a. Explain the Text Mining process and the architecture. (10 Marks)
b. Briefly explain the Data Mining. Compare text mining and data mining. (10 Marks)

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17CS832

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

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. Define User Interface Design. Explain the importance and benefits of a good design. (08 Marks)
b. Discuss Direct and Indirect Manipulation. (06 Marks)
c. List the advantages and disadvantages of graphical system. (06 Marks)
- 2 a. Explain the general principles of user interface design. (08 Marks)
b. Explain the characteristics of graphical user interface. (06 Marks)
c. Differentiate the characteristics of intranet and internet. (06 Marks)
- 3 a. Write a note on guidelines that must be followed during Interface design that are valuable for user. (08 Marks)
b. Explain the five commandments in designing for people. (06 Marks)
c. Write short notes on Human Interaction speed. (06 Marks)
- 4 a. Discuss with suitable examples the human characteristics on design. (10 Marks)
b. Discuss the models for determining basic business function. (10 Marks)
- 5 a. Explain the structures of Menus in detail. (10 Marks)
b. Discuss Website Navigation in detail. (10 Marks)
- 6 a. Explain functions of menus. (08 Marks)
b. Explain any four graphical menus in detail. (06 Marks)
c. Write notes on :
(i) Formatting of menus. (ii) Phrasing the menus. (06 Marks)
- 7 a. Discuss windows presentation styles. (10 Marks)
b. List the components of windows and explain its importance. (10 Marks)
- 8 a. Write the characteristics of Touch screen and keyboard. (08 Marks)
b. Discuss the process to select proper interaction devices. (06 Marks)
c. Compare different GUI controls. (06 Marks)
- 9 a. Write notes on different prototypes used in User Interface Design. (08 Marks)
b. Discuss presentation controls in detail. (06 Marks)
c. Write notes on:
(i) Think –Aloud Evaluation. (ii) Cognitive Walk – Throughs. (06 Marks)
- 10 a. What is the need of usability test? Explain the process involved in developing and conducting a test. (10 Marks)
b. Write notes on:
(i) Slider (ii) Tree-view (iii) Tabs (iv) Scroll bars. (10 Marks)

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