Seat
No.

B.E. (C.S.E.) (Semester - VIII) Examination, November - 2019
INTERNET OF THINGS (Elective - II)
Sub. Code : 67827

Day and Date : Tuesday, 19 - 11 - 2019   **Total Marks : 100**
Time : 2.30 p.m. to 5.30 p.m.

Instructions :   1)   Questions 4 and 8 are compulsory.
                     2)   Solve any 2 Questions from 1 to 3 and any 2 questions from 5 to 7.
                     3)   Figures to the right indicate full marks.

Q1) a)   Explain MiH and H2M communication in detail.   [8]

b)   Explain the working definitions of IoT.   [8]

Q2) a)   List and explain Key IoT technologies.   [8]

b)   Draw a neat diagram of RFID reader and explain its operation.   [8]

Q3) a)   List and explain various issues in RFID system.   [8]

b)   List and explain challenges faced by modern WSN.   [8]

Q4) Write short notes on any 3 of the following.   [3×6=18]

a)   ITU-T views.

b)   Security and privacy in IoT.

c)   M2M communication.

d)   Wireless Node or Mote in WSN.

Q5) a)   Compare between Bluetooth technologies and cellular network technologies.   [8]

b)   Explain in detail radio frequency for consumer electronics.   [8]

P.T.O.

Q6) a) Explain Substantive principles for IoT Governance. **[8]**

    b) How reliability and interoperability can be achieved in IoT system? **[8]**

Q7) a) List and explain any two applications of IoT in automotive sector. **[8]**

    b) Discuss in detail city automation in IoT/M2M context. **[8]**

Q8) Write short notes on any 3 of the following. **[3×6=18]**

    a) Zigbee

    b) IoT infrastructure governance

    c) NFC

    d) Over the air passive surveillance

Seat
No.

B.E. (CSE) (Semester - VIII)
Examination, November - 2019
DATA ANALYTICS
Sub. Code : 67824

Day and Date : Wednesday 13-11-2019   **Total Marks :100**
Time : 2.30 p.m.to 5.30 p.m.

Instructions :   1)   Figures to the right indicates full marks.
                  2)   Question no.4 & Question no.8 are compulsory.
                  3)   Attempt any Two Questions from Q.1 to Q.3 and from Q.5 to Q.7.

Q1) a)   Discuss the phases in the development of Decision - support system?
                                                                              [8]

      b)   Explain the architecture of Data Warehouse.   **[8]**

Q2) a)   List and explain classes of Mathematical models?   **[8]**

      b)   Explain data validation process in data preparation?   **[8]**

Q3) a)   Describe Map-Reduce Programming model with example?   **[8]**

      b)   Explain HDFS Architecture and the working of Hadoop Heartbeat
            message in HDFS with diagram?   **[8]**

Q4) Attempt Any Three: **[18]**

      a)   Discuss various applications of data mining.

      b)   Explain cube & Multidimensional Analysis

      c)   Write a note on types of decision

      d)   Write a note on YARN

                                                                    P.T.O.

Q5) a) Explain structure of regression model along with simple linear regression [8]

    b) Describe classification problem in data mining along with neat diagram?[8]

Q6) a) Explain single dimensional association rule? [8]

    b) Explain K-means clustering Algorithm? [8]

Q7) a) Describe a matrix in R & manipulate with different commands? [8]

    b) Write a note on reading and exporting Data from R? [8]

Q8) Attempt Any Three: [18]

    a) Write a short note on different clustering techniques

    b) Explain k-medoids clustering Algorithm

    c) Describe Splitting rules in classification trees.

    d) Explain creation of a matrix in R & manipulate with different commands

-2-

Total No. of Pages : 2

B.E. (Computer Science and Engineering) (Semester - VII)
Examination, November - 2019
DISTRIBUTED SYSTEMS - I
Sub. Code : 67542

Day and Date : Tuesday, 26 - 11 - 2019

Time : 10.00 a.m. to 1.00 p.m.

Total Marks : 100

Instructions :
1) Solve any three questions from Q.No.1 to Q.No.4.
2) Solve any three questions from Q. No.5 to Q.No. 8.
3) Assume suitable data wherever necessary.
4) Figures to the right indicate full marks.

SECTION - I

Q1) a) Explain types of transparencies in distributed systems. **[8]**

b) Explain principle of RPC between client and server program with example. **[8]**

Q2) a) Explain layered architecture and object based architecture in distributed systems. **[8]**

b) Explain election algorithms (Bully and Ring). **[8]**

Q3) a) Explain Unix semantics and Session semantics of file sharing. **[8]**

b) Explain the design issues of process groups for fault tolerance in distributed systems. **[8]**

Q4) Write a short note on (Any 3). **[18]**

a) Types of failure models in distributed systems.

b) Three phase commit protocol.

c) Berkeley Algorithm.

d) Client side caching in Coda file systems.

P.T.O.

SECTION - II

Q5) a) Describe different components of cloud computing. [8]

b) What are different challenges with cloud security? [8]

Q6) a) Explain Virtualization at operating System level. [8]

b) State the difference between public cloud & hybrid cloud. [8]

Q7) a) Explain data Confidentiality and Encryption in cloud. [8]

b) Explain Binary Translation with Full Virtualization. [8]

Q8) Write a short note on (Any 3). [18]

a) Community Clouds

b) Open Source Virtualization Technology

c) Infrastructure as a Service

d) Data Integrity

♦ ♦ ♦

B.E. (Computer Science and Engineering) (Part - IV)
(Semester - VIII) (Revised) Examination, November- 2019
PROJECT MANAGEMENT
Sub. Code : 67825

Day and Date : Thursday, 14- 11 -2019   **Total Marks : 100**

Time : 2.30 p.m to 5.30 p.m.

Instructions :
1) Question No. 4 and 8 is compulsory.
2) Attempt any two questions from question no. 1, 2 and 3.
3) Attempt any two questions from question no. 5, 6 and 7.
4) Figures to the right indicate full marks.

SECTION-I

Q1) a) Explain Organizations Frames and organizational structure and culture.**[8]**

     b) Explain Context of IT projects and Project management process groups and mapping.   **[8]**

Q2) a) Explain net present value analysis.   **[8]**

     b) Discuss systems view of project. Explain three sphere models for systems management.   **[8]**

Q3) a) Explain approaches to developing Work Breakdown structure.   **[8]**

     b) Discuss Precedence diagramming method for network diagram.   **[8]**

Q4) Write a short note on (Any Three)   **[3×6=18]**
     a) Gantt Chart
     b) Critical Path Method
     c) Cost Control mechanism
     d) Activity Resource Estimation.

P.T.O.

SECTION-II

Q5) a) Explain types of cost estimates and cost estimation tools and techniques. **[8]**

b) List and Explain tools and techniques for quality control. **[8]**

Q6) a) Discuss Team-Building activities in detail. **[8]**

b) Explain the process "Acquiring the project team" in detail. **[8]**

Q7) a) Explain the contents of risk register with example. **[8]**

b) Describe with respect to Human Resource Management. **[8]**

    i) Maslow's Hierarchy of needs.

    ii) Herzberg's motivation Hygiene theory.

    iii) Mc Clelland's Acquired-Needs Theory.

    iv) Mc Gregor's Theory X and Theory Y.

Q8) Write a short note on (Any Three) **[3×6=18]**

a) Responsibility Assignment Matrices.

b) RACI chart.

c) Planning risk management.

d) Resource Loading.

👍 👍 👍

B.E. (Computer Sc. & Engineering) (Semester - VII) (Revised) Examination, November - 2019
ADVANCED COMPUTER ARCHITECTURE
Sub. Code : 67541

Day and Date : Saturday, 23 - 11 - 2019   **Total Marks : 100**
Time : 10.00 a.m. to 1.00 p.m.

Instructions :   1)   Attempt any three questions from each section.
                 2)   Figures to the right indicates full marks.
                 3)   Assume suitable data if necessary.

SECTION - I

Q1) a) What are different elements of a modern computer systems. Explain different shared memory multiprocessor models. Which model has faster access to a local memory with a local processor?   **[8]**

   b) What are symmetric and asymmetric multiprocessor architectures? Explain in detail.   **[8]**

Q2) a) Explain following performance evaluation factors for pipeline architectures: **[8]**
   i)   MIPS Rate   ii)   Execution Time
   iii)   Throughput   iv)   Effective CPI

   b) What are systolic arrays? State any two applications of systolic arrays.**[8]**

Q3) a) Draw and explain associative memory architecture. Explain its working with suitable example.   **[8]**

   b) Explain basic principle of Multithreaded architecture? How performance of multithreaded architectures is analyzed?   **[8]**

Q4) Write short notes on following (any three).   **[3×6=18]**
   a)   The S-access memory organization
   b)   Multiprogramming
   c)   SIMD Array processor
   d)   Classification of pipeline architectures

SECTION - II

Q5) a) Draw network of clusters in Cm* architecture. how degree of memory conflict problem is handled in loosely coupled systems? **[8]**

b) Explain different components of Kmap processor in Cm* architecture. **[8]**

Q6) a) Draw basic structure of a vector architecture VMIPS. Explain following two vector instructions ADDVV.D V,V2,V3.

SUBVV.D V1, V2, V3.   **[8]**

b) Draw and explain NVIDIA GPU memory structure? How local memory is shared by all threads of SIMD instructions within a thread block. **[8]**

Q7) a) What are Bernstein's conditions for parallelism? How it is important to apply before execution of code in parallel? **[8]**

b) What are latency hiding techniques? Explain any one in detail. **[8]**

Q8) Write short notes on following (any three). **[3×6=18]**

a) Grain Size

b) Grain packing and scheduling

c) Resource dependences

d) Hardware parallelism

✪   ✪   ✪

Seat
No.

B.E. (C.S.E.) (Part - II) (Semester - VIII) (Revised)
(New) Examination, November - 2019
REAL-TIME OPERATING SYSTEM
Sub. Code : 67826

Day and Date : Friday, 15 - 11 - 2019   Total Marks : 100
Time : 2.30 p.m. to 5.30 p.m.

Instructions :   1)   Attempt any three questions from each section.
                   2)   Figures to the right indicate full marks.

SECTION - I

Q1) a)   How real time system is defined? State and explain real time system
            design issues.   **[8]**

     b)   Explain following concepts related to hardware interfacing in real time
          systems.   **[8]**
            i)   Latching
            ii)   Tristate Logic
            iii)   Edge/ Level Triggered
            iv)   Wait states

Q2) a)   With block diagram explain memory mapped input/output method for
            i/o interfacing in real time system.   **[8]**

     b)   What are interrupts in real time systems? How CPU respond to interrupt?
                                                                             [8]

Q3) a)   What is POSIX? How real time concurrent events are handled using
            POSIX?   **[8]**

     b)   Explain different criteria's for selection of real time Kernels?   **[8]**

Q4) Write short notes of following (Any Three).   **[3×6=18]**
     a)   Foreground and Background Systems.
     b)   Hybrid Systems.
     c)   POSIX
     d)   Interrupt Service routine.

P.T.O.

SECTION - II

Q5) a) With block diagram explain requirement engineering process for real time systems. **[8]**

b) What are formal methods in software specifications? State its limitations. **[8]**

Q6) a) How parameter passing is achieved in procedural languages? **[8]**

b) State the features of C++ and C# for real time system design. **[8]**

Q7) a) What is need of metrics in real time system engineering? Explain Line of Code Metric in detail. **[8]**

b) Explain how software complexity is measured using McCabe's Metric.**[8]**

Q8) Write short note on (Any Three). **[3×6=18]**

a) COCOMO II Model.

b) Architecture of RT Linux.

c) Real Time JAVA.

d) Procedural Languages.

🝔 🝔 🝔

B.E. (Computer Sc. & Engineering) (Semester - VII) (Revised) Examination, November - 2019
ADVANCED COMPUTER ARCHITECTURE
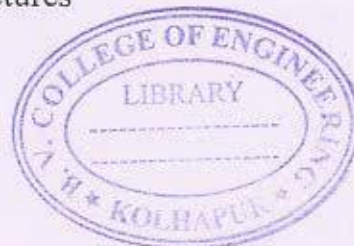### Sub. Code : 67541

Day and Date : Saturday, 23 - 11 - 2019   **Total Marks : 100**
Time : 10.00 a.m. to 1.00 p.m.

Instructions :
1) Attempt any three questions from each section.
2) Figures to the right indicates full marks.
3) Assume suitable data if necessary.

SECTION - I

Q1) a) What are different elements of a modern computer systems. Explain different shared memory multiprocessor models. Which model has faster access to a local memory with a local processor? **[8]**

b) What are symmetric and asymmetric multiprocessor architectures? Explain in detail. **[8]**

Q2) a) Explain following performance evaluation factors for pipeline architectures: **[8]**
i) MIPS Rate
ii) Execution Time
iii) Throughput
iv) Effective CPI

b) What are systolic arrays? State any two applications of systolic arrays. **[8]**

Q3) a) Draw and explain associative memory architecture. Explain its working with suitable example. **[8]**

b) Explain basic principle of Multithreaded architecture? How performance of multithreaded architectures is analyzed? **[8]**

Q4) Write short notes on following (any three). **[3×6=18]**
a) The S-access memory organization
b) Multiprogramming
c) SIMD Array processor
d) Classification of pipeline architectures

P.T.O.

SECTION - II

Q5) a) Draw network of clusters in Cm* architecture. how degree of memory conflict problem is handled in loosely coupled systems? **[8]**

b) Explain different components of Kmap processor in Cm* architecture. **[8]**

Q6) a) Draw basic structure of a vector architecture VMIPS. Explain following two vector instructions ADDVV.D V,V2,V3.

SUBVV.D V1, V2, V3. **[8]**

b) Draw and explain NVIDIA GPU memory structure? How local memory is shared by all threads of SIMD instructions within a thread block. **[8]**

Q7) a) What are Bernstein's conditions for parallelism? How it is important to apply before execution of code in parallel? **[8]**

b) What are latency hiding techniques? Explain any one in detail. **[8]**

Q8) Write short notes on following (any three). **[3×6=18]**

    a) Grain Size

    b) Grain packing and scheduling

    c) Resource dependences

    d) Hardware parallelism

✪ ✪ ✪

Seat
No.

B.E. (Computer Science and Engineering) (Semester - VII)
Examination, November - 2019
DISTRIBUTED SYSTEMS - I
Sub. Code : 67542

Day and Date : Tuesday, 26 - 11 - 2019   **Total Marks : 100**
Time : 10.00 a.m. to 1.00 p.m.

Instructions :   1)   Solve any three questions from Q.No.1 to Q.No.4.
            2)   Solve any three questions from Q. No.5 to Q.No. 8.
            3)   Assume suitable data wherever necessary.
            4)   Figures to the right indicate full marks.

SECTION - I

Q1) a) Explain types of transparencies in distributed systems.   **[8]**

   b) Explain principle of RPC between client and server program with example.
                                                                          [8]

Q2) a) Explain layered architecture and object based architecture in distributed systems.   **[8]**

   b) Explain election algorithms (Bully and Ring).   **[8]**

Q3) a) Explain Unix semantics and Session semantics of file sharing.   **[8]**

   b) Explain the design issues of process groups for fault tolerance in distributed systems.   **[8]**

Q4) Write a short note on (Any 3).   **[18]**

   a) Types of failure models in distributed systems.

   b) Three phase commit protocol.

   c) Berkeley Algorithm.

   d) Client side caching in Coda file systems.

P.T.O.

SECTION - II

Q5) a) Describe different components of cloud computing. [8]

b) What are different challenges with cloud security? [8]

Q6) a) Explain Virtualization at operating System level. [8]

b) State the difference between public cloud & hybrid cloud. [8]

Q7) a) Explain data Confidentiality and Encryption in cloud. [8]

b) Explain Binary Translation with Full Virtualization. [8]

Q8) Write a short note on (Any 3). [18]

a) Community Clouds

b) Open Source Virtualization Technology

c) Infrastructure as a Service

d) Data Integrity

♦ ♦ ♦