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B.E. (CSE) (Semester - VIII) (Revised) Examination, May - 2019

DATA ANALYTICS

Sub. Code : 67824

Day and Date : Tuesday, 14 - 05 - 2019 **Total Marks : 100**

Time : 10.00 a.m. to 01.00 p.m.

Instructions : 1) Figures to the right indicate 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.

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]**

P.T.O.

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.

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

Day and Date : Friday, 26 - 04 - 2019 **Total Marks : 100**

Time : 02.30 p.m. to 05.30 p.m.

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

SECTION - I

Q1) a) What are different shared memory multiprocessor models? What is symmetric multiprocessors? State it's features. **[8]**

b) What is dependability? How it is measured?. **[8]**

Q2) a) What is the concept of linear pipelining? How it will help to increase throughput rate. **[8]**

b) Derive the equation for Speedup? What happen with Speedup as number of stages in pipeline stages increases? **[8]**

Q3) a) Why associative memory is called as content addressable memory? What is the significance of Bij in an associative memory? How it is different from RAM?. **[8]**

b) How multithreaded system is modeled? How the performance of these systems is analyzed?. **[8]**

Q4) Write Short Notes on Following (any three) : **[3 × 6 = 18]**

a) Cray-1 Architecture

b) Systolic Arrays and its applications

c) Unification and Multifunction pipeline

d) SIMD array processor

P.T.O

SECTION - II

Q5) a) What is the difference between multiprocessor and multicomputer system? What are architectural models for multiprocessor systems. **[8]**

b) What are loosely coupled systems? Explain how loosely coupled systems (LCS) are efficient when the interaction between tasks are minimized. **[8]**

Q6) a) What is GPU? Where it is used? How GPU memory is shared by all vector loops. **[8]**

b) With steps explain intra cluster memory access in Cm* Architecture. **[8]**

Q7) a) What is the need to check data and resource dependencies before execution of several programs in parallel? What are different types of data dependences? **[8]**

b) What is hardware and software parallelism? With suitable example explain mismatch between them. **[8]**

Q8) Write Short Notes on Following (any three) **[3 × 6 = 18]**

a) Vector Architecture VMIPS

b) Grain Size

c) Latency hiding techniques

d) Grain Packing & scheduling

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B.E. (CSE) (Semester - VII) (Revised) Examination, May - 2019

ADVANCED DATABASE SYSTEMS

Sub. Code : 67543

Day and Date : Saturday, 04 - 05 - 2019 **Total Marks : 100**

Time : 02.30 p.m. to 05.30 p.m.

Instructions : 1) **Attempt any three questions from each section.**
2) **Q4 and Q8 are compulsory.**
3) **Figures to the right indicate full marks.**
4) **Assume suitable data wherever necessary.**

SECTION - I

Q1) a) With the help of a suitable diagram, explain a typical transaction server system accessing data in a shared memory. **[8]**

b) Explain linear scaleup in case of parallel systems. **[8]**

Q2) a) Describe how the two-phase commit protocol operates during normal operations. **[8]**

b) What are persistent objects? Explain any two concepts to make the object persistent. **[8]**

Q3) a) What do you mean by embedded SQL and dynamic SQL? State the advantages and disadvantages of dynamic SQL. **[8]**

b) Explain database software development life cycle with suitable figure. **[8]**

Q4) Write short notes on any three **[6+6+6]**

a) Reflection

b) ODL

c) Intra query parallelism

d) Object Identity and Structure

SECTION - II

Q5) a) State and briefly explain database security mechanisms against unauthorized access. **[8]**

b) State the DBA's responsibilities to maintain database security. What actions are created by DBA-privileged commands. **[8]**

Q6) a) Explain the structure of XML data and XML schema. **[8]**

b) What do you mean by sensitivity of data? Specify those factors that make data sensitive. **[8]**

Q7) a) What is business intelligence? State the general steps involved in BI. **[8]**

b) What is star schema? Explain factor and dimensions as its components. **[8]**

Q8) Write short notes on any three **[6+6+6]**

a) OLAP client server architecture

b) Audit trials in database

c) Covert channels

d) Data mining

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

Day and Date : Thursday, 16 - 05 - 2019 **Total Marks : 100**

Time : 10.00 a.m. to 01.00 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.**

Q1) a) Explain types of organizational structures in detail. **[8]**

b) What is deliverable? Explain phases of traditional project life cycle. **[8]**

Q2) a) What is project integration management? Explain processes involved in it. **[8]**

b) Explain weighted scoring model. **[8]**

Q3) a) What is WBS? Explain different approaches to develop WBS. **[8]**

b) Explain various tools and techniques used in schedule development. **[8]**

Q4) Write a short note on (Any Three) : **[3 × 6 = 18]**

a) Project constraints.

b) Project charter.

c) Project network diagrams.

d) Earned value management.

Q5) a) What is quality? Explain processes involved in project quality Management. **[8]**

b) Draw and explain cause and effect diagrams with suitable example. **[8]**

P.T.O.

Q6) a) Explain Tuckman model of team development. **[8]**

b) Explain the process "Developing the human resource plan" in detail. **[8]**

Q7) a) Discuss common sources of risk on IT projects. **[8]**

b) List and explain techniques of risk identification. **[8]**

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

a) Maturity models

b) Importance of project risk management

c) Resource loading

d) Checksheet

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B.E. (CSE) (Semester - VII) Examination, May - 2019
DISTRIBUTED SYSTEMS (Revised)
Sub. Code : 67542

Day and Date : Thursday, 02 - 05 - 2019 **Total Marks : 100**

Time : 02.30 p.m. to 05.30 p.m.

Instructions : 1) **Question 4 & 8 are compulsory, attempt any two questions from Questions 1 to 3 in section-I and Questions 5 to 7 in section- II.**

2) **Figures to the right side indicate full marks.**

SECTION - I

Q1) a) Explain distributed system architecture. **[8]**

b) Explain role of TP monitor in distributed systems. **[8]**

Q2) a) What is a socket? Explain different socket primitives for TCP/IP that are used in Berkeley Sockets. **[8]**

b) Compare two phase commit and three phase commit in distributed transaction. **[8]**

Q3) a) Explain basic RPC2 subsystem in Coda file system. **[8]**

b) How nested directories mount from multiple servers in NFS. **[8]**

Q4) Write notes on : **[3 × 6 = 18]**

a) Goals of distributed systems.

b) Berkeley Algorithm for clock synchronization in distributed system.

c) UNIX semantics and session semantics to share files in distributed systems.

SECTION - II

Q5) a) What do you mean by virtualization? What are the benefits of virtualization? **[8]**

b) Explain in detail different levels at which virtualization is implemented. **[8]**

P.T.O.

Q6) a) Explain-bare metal virtualization along with its benefits and drawbacks. **[8]**

b) Discuss various data-related challenges that occur in the cloud. **[8]**

Q7) a) Explain different primary mechanisms used for virtualization of the systems. **[8]**

b) How data confidentiality and encryption play important role in cloud? Explain in detail. **[8]**

Q8) Write Short notes (attempt any three) : **[3 × 6 = 18]**

a) Software as a service (SaaS).

b) Database as a Service (DbaaS).

c) Paravirtualization with compiler support.

d) Virtualization of CPU, Memory, and I/O devices.

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B.E. (Computer Science & Engineering) (Semester - VIII) (Revised) Examination, May - 2019

REAL-TIME OPERATING SYSTEM (New)

Sub. Code : 67826

Day and Date : Monday, 20 - 05 - 2019 **Total Marks : 100**

Time : 10.00 a.m. to 01.00 p.m.

Instructions : 1) **Attempt any three questions from each section**

2) **Figures to the right indicate full marks.**

SECTION - I

Q1) a) What are RISC and CISC processor architectures? Compare between RISC and CISC processor architectures. **[8]**

b) What are different input/output methods in real time systems? Explain any one in detail. **[8]**

Q2) a) What is important role of kernel in operating systems? Explain synchronous polled loop pseudo kernel. **[8]**

b) Explain interrupt driven systems? How context switching is achieved? **[8]**

Q3) a) How the problem of testing and storing to a particular memory location is achieved in real time systems? Explain with suitable example. **[8]**

b) How Semaphores are used to handle critical section problems? How mailboxes can be used to implement semaphores? **[8]**

Q4) Write Short Notes of Following (Any Three) : **[3 × 6 = 18]**

a) Round Robin Scheduling.

b) Priority Celling Protocol.

c) Cyclic Executives.

d) Intertask communication and synchronization.

P.T.O.

SECTION - II

Q5) a) What are petri nets? How Petri nets are used for requirement analysis? **[8]**

b) What are different elements of structured analysis and design? Illustrate structural analysis using suitable example. **[8]**

Q6) a) State advantages of object oriented languages over procedural languages for design of real time systems. **[8]**

b) What is recursion ? how it is important in real time software design? How recursion is implemented using procedural languages? **[8]**

Q7) a) State the difference between Feature point and Function point ? How feature point metric is computed? **[8]**

b) What are special real time languages ? State real time features of JAVA. **[8]**

Q8) Write Short Note on (Any Three) : **[3 × 6 = 18]**

a) Metric for object oriented software

b) Cost Estimation using COCOMO

c) RT Linux features

d) IC# Language

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B.E. (Computer Science and Engineering) (Semester - VII) Examination, May - 2019

Ad HOC Wireless Network (Elective - I)

Sub. Code : 67547

Day and Date : Tuesday, 07 - 05 - 2019 **Total Marks : 100**

Time : 02.30 p.m. to 05.30 p.m.

Instructions :
1) **Solve any three questions from each section.**
2) **Figure to right indicates marks.**
3) **Make necessary assumptions if required.**

SECTION - I

Q1) a) What are the deployment considerations for Ad Hoc network? **[8]**

b) Explain Receiver Initiated Busy Tone protocol for MAC layer. **[8]**

Q2) a) Explain CGSR protocol in detail. **[8]**

b) What is the effect of distributed nature/lack of central coordinator in Ad Hoc Network? **[8]**

Q3) a) Write note on Classifications of Routing Protocols. **[9]**

b) What is the major difference between DSR and AODV? Explain AODV protocol in detail. **[9]**

Q4) a) How MARCH works? Explain in details. **[8]**

b) ZRP belongs to which category of routing protocol? Explain ZRP protocol in detail. **[8]**

P.T.O.

SECTION - II

Q5) a) Explain Operations of Mutlicast routing protocols with Source Initiated and Receiver Initiated approach. **[9]**

b) What are the issues and challenges in security provisioning in Ad Hoc network. **[9]**

Q6) a) Explain Feedback-Based TCP protocol with example. **[8]**

b) What are device and processor energy management schemes? **[8]**

Q7) a) Explain SWAN QoS model in detail. **[8]**

b) Explain Mulitcast Zone Routing Protocol protocol in details. **[8]**

Q8) a) What are the classifications of Energy Management Schemes? **[8]**

b) What are the challenges in providing QoS in Ad Hoc network? **[8]**

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