Seat No.	

Total No. of Pages : 2

B.E. (Computer Science & Engineering) (Semester-VII) (Revised) Examination, November - 2018
ADVANCED COMPUTER ARCHITECTURE
Sub. Code : 67541

Day and Date : Tuesday, 20 - 11 - 2018 **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? Draw and explain cache only memory architecture . State its applications. **[8]**

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

Q2) a) Explain interleaved memory organization. Draw and explain C- access architecture. state its advantages. **[8]**

b) Which factors affects program behavior ? Explain following performance measures. **[8]**

i) Clock rate and CPI
ii) MIPS rate
iii) Throughput rate
iv) Execution Time

Q3) a) Draw and explain Cray type Vector Processor. Explain any five vector instructions. **[8]**

b) What are latency hiding techniques ? Explain perfecting technique in detail. State its advantages. **[8]**

Q4) Write Short Notes on Following (ANY THREE) **[3 × 6 = 18]**

i) Multithreaded Architectures
ii) Associative memory processor
iii) Systollic arrays
iv) Array Processors

P.T.O.

SECTION - II

Q5) a) Draw and explain Cm* cluster architecture . How communication between multiple clusters takes place ? [8]

b) What is GPU? How it is different from CPU? Draw the format for PTX (Parallel Thread Execution) instruction. [8]

Q6) a) Draw and explain tightly coupled architecture. State its applications [8]

b) Compare control-flow, dataflow computers in terms of the program flow mechanism used. [8]

Q7) a) Draw basic structure of a vector architecture VMIPS. Explain following vector instructions [8]

i) ADDVS .D V1,V2,F0

ii) SUBVV.D V1,V2,V3

iii) ADDVV.D V1,V2,V3

iv) SUBSV.D V, F0,V2

b) Analyze the data dependences among the following statements in a given program [8]

S1 : Load R1,1120

S2 : Load R2,M(20)

S3:Add R1,R2

S4: Store M(1124),R1

Q8) Write Short Notes on Following (ANY THREE) [3 × 6 = 18]

i) Grain Size

ii) Hard ware and Software parallelism

iii) Grain packing and Scheduling

iv) Bernstein's conditions

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Seat No.	

B.E. (CSE) (Semester-VII) (Revised) Examination, November - 2018
DISTRIBUTED SYSTEMS
Sub. Code : 67542

Day and Date : Saturday, 24 - 11 - 2018 **Total Marks : 100**

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

Instructions: 1) **Question 4 and question 5 are compulsory, attempt any two questions from que.1 to 3 from section I and que. 6 to 8 from section II**

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

SECTION - I

Q1) a) Explain the process of binding a client to a server in DCE RPC. **[8]**

b) What are different steps involved in writing a client and a server in DCE RPC? **[8]**

Q2) a) Explain Lamport's logical Clocks in detail. **[8]**

b) Explain centralized mutual exclusion algorithm in detail. **[8]**

Q3) a) How failures are masked by applying redundancy? Explain triple modular redundancy. **[8]**

b) How failures are detected to achieve fault tolerance in distributed systems? **[8]**

Q4) Attempt any three **[18]**

a) A ring algorithm

b) Network Time protocol

c) Process resilience

d) Compound procedures used in ONC RPC in NFS v4

P.T.O.

SECTION - II

Q5) a) List out and explain components of Cloud Computing. **[9]**

b) What are the benefits using virtualization in Cloud Computing? **[9]**

Q6) a) Explain virtualization at OS level. **[8]**

b) Why Cloud Computing brings new threats? **[8]**

Q7) a) What are the properties of Cloud Computing? **[8]**

b) Discuss "Infrastructure as a Service" (IaaS) in Cloud Computing. **[8]**

Q8) a) What are the different challenges with data redundancy and data backup with respect to Cloud data? **[8]**

b) Write note on cloud storage gateways (CGS). **[8]**

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SE - 212

Total No. of Pages : 3

Seat No.	

B.E. (Computer Sci. & Engg.) (Semester - VII) (Revised) Examination, November - 2018

ADVANCED DATABASE SYSTEM

Sub. Code : 67543

Day and Date : Tuesday, 27 - 11 - 2018 **Total Marks : 100**

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

Instructions :
1) Q.4 & Q.8 are compulsory.
2) Attempt any two questions from Q1,Q2,Q3.
3) Attempt any two questions from Q5,Q6,Q7.
4) Figures to the right indicate full marks.

SECTION - I

Q1) a) What is lock de-escalation, and under what conditions is it required? Why is it not required if the unit of data shipping is an item? **[8]**

b) Consider a failure that occurs during 2PC for a transaction. For each possible failure like site failure, disk failure or communication link failure, explain how 2PC ensures transaction atomicity despite the failure. **[8]**

Q2) a) A car-rental company maintains a vehicle database for all vehicles in its current fleet. For all vehicles, it includes the vehicle identification number, license number, manufacturer, model, date of purchase, and color. Special data are included for certain types of vehicles:

- Trucks: cargo capacity
- Sports cars: horsepower, renter age requirement
- Vans: number of passengers
- Off-road vehicles: ground clearance, drivetrain (four- or two-wheel drive)

Construct an SQL: 1999 schema definition for this database. Use inheritance where appropriate. **[8]**

b) What is object? What are the properties of object? Explain with example object structure? **[8]**

P.T.O

Q3) a) What is cursor? Write a cursor which update the salaries of an employee as follows: [8]

i) if sal<1000 then update the salary to 1500.

ii) if sal>=1000 and <2000 then update the salary to 2500.

iii) if sal>=2000 and <=3000 then update the salary to 4000.

And also count the no.of records have been updated.

b) What do you mean by systems development life cycle? Briefly explain each phase in the SDLC. [8]

Q4) Write a short notes on (Any Three) [18]

a) Range and Hash partitioning Techniques.

b) Semi and Bloom join strategies.

c) Embedded and Dynamic SQL.

d) ORDBMs Vs OODBMs

SECTION - II

Q5) a) Explain what is the need of granting and revoking privileges. [4]

b) Give an example of how covert channels can be used to defeat the Bell-LaPadula model. [4]

c) Describe a scenario in which discretionary access controls are required to enforce a security policy that cannot be enforced using only mandatory controls. [8]

Q6) a) Give the DTD for an XML representation of the following nested-relational schema : [8]

Emp = (ename, ChildrenSet setof(Children), SkillsSet setof(Skills))

Children = (name, Birthday)

Birthday = (day, month, year)

Skills = (type, ExamsSet setof(Exams))

Exams = (year, city)

b) What is Xquery? Explain with example FLWOR Expression? **[8]**

Q7) a) What is OLAP? Explain the different operations of olap with example? **[8]**

b) Discuss the features of Star, Snowflake and Fact Constellation schema of Data Warehouse, Compare the above three schemas. **[8]**

Q8) Write a short notes on (Any Three) : **[18]**

a) Audit Trails in Database.

b) Business intelligence Architecture.

c) Xml Schema.

d) Association Rule Mining.

Seat No.	

Total No. of Pages : 2

B.E. (Computer Science and Engineering) (Semester-VII) Examination, November - 2018

ADHOC WIRELESS NETWORKS (Elective - I)

Sub. Code : 67547

Day and Date : Thursday, 29 - 11 - 2018 **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 differences between cellular network and Ad Hoc wireless network? **[8]**

b) Explain MACA-By Invitation protocol in detail. **[8]**

Q2) a) How MARCH protocol works? Explain in details. **[8]**

b) Explain ABR protocol of routing in detail. **[8]**

Q3) a) What are the disadvantages of binary exponential back-off (BEB) mechanism used in MACA?

How are they overcome in MACAW? **[9]**

b) Explain WRP protocol in detail. **[9]**

Q4) a) What is the effect of distributed nature/lack of central coordinator in Ad Hoc Network? **[8]**

b) What are the different criterias used to classify the types of routing protocols? **[8]**

P.T.O.

SECTION - II

Q5) a) With a neat diagram explain Architectural Reference Model of Multicast routing protocols. **[9]**

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

Q6) a) Explain INORA QOS model in detail. **[8]**

b) Explain NSMP protocol in detail. **[8]**

Q7) a) Explain Split TCP protocol with example. **[8]**

b) Explain Processor Power Management Scheme in detail, **[8]**

Q8) a) Why it is important to do energy management in Ad Hoc wireless networks. **[8]**

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

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SE - 217

Total No. of Pages : 2

Seat No.	

B.E. (CSE) (Revised) (Semester - VIII) Examination, November - 2018

DATA ANALYTICS

Sub. Code : 67824

Day and Date : Monday, 12 - 11 - 2018 **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) Explain development of Business intelligence system with the help of neat diagram? **[8]**

b) Explain representation of the decision making process? **[8]**

Q2) a) Explain structure of mathematical models for decision making? **[8]**

b) Explain in detail Bivariate analysis with example? **[8]**

Q3) a) Explain Big data Stack with different layers? **[8]**

b) Describe working of Map-Reduce programming model? **[8]**

Q4) Attempt Any Three **[3 × 6 = 18]**

a) Write a note on Business intelligence.

b) Discuss various applications of data mining.

c) Define Big data & describe various elements of Big data.

d) Write a note on Pig, Hive and HBase.

P.T.O.

Q5) a) Describe classification trees for learning methods in data mining? **[8]**

b) Write a note on Bayesian Methods? **[8]**

Q6) a) Explain K-means clustering Algorithm? **[8]**

b) Write a short note on different clustering techniques? **[8]**

Q7) a) List and explain the different functions to handle the data in R workspace with an example? **[8]**

b) Write different functions to manipulation & process the data using R. **[8]**

Q8) Attempt Any Three **[3 × 6 = 18]**

a) Explain structure of regression model.

b) Write K-mediods clustering Algorithm.

c) Describe Frames in R with data management.

d) Describe reading & exporting dataset in R.

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Seat No.	

B.E. (Computer Science & Engineering) (Semester - VIII) (Revised) Examination, November - 2018

PROJECT MANAGEMENT

Sub. Code : 67825

Day and Date : Tuesday, 13 - 11 - 2018 **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.
3) Question No.4 and 8 is compulsory.

SECTION - I

Q1) a) Explain Arrow Diagramming method in detail with example. [8]

b) Explain Use of Gantt Charts and PERT. [8]

Q2) a) Discuss net present value analysis using example. [8]

b) Write different approaches used for developing Work Breakdown Structure. [8]

Q3) a) Explain critical path Method in schedule development. [8]

b) Explain Critical chain scheduling and PERT. [8]

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

a) Earned value Management

b) Weighted Scoring Model

c) WBS dictionary

d) Payback Analysis

P.T.O.

SECTION - II

Q5) a) Explain Statistical sampling and Six Sigma wiih respect to quality management. [8]

b) Explain following with respect to quality control. [8]

i) Control chart

ii) Pareto chart

Q6) a) Explain Decision Trees and Expected Monetary Value and Simulation referred to Risk Management. [8]

b) Explain "Team Building Activities". [8]

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

b) Describe techniques used for quantitative risk analysis. [8]

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

a) Maslow's Hierarchy of Needs

b) McClelland's Acquired-Needs Theory

c) Resource Leveling

d) Tools and techniques for managing project teams

SE - 223

Seat No.	

Total No. of Pages : 2

B.E. (Computer Sci. & Engg.) (Semester - VIII) Examination, November - 2018

GRID TECHNOLOGY (Pre - Revised) (Old)

Sub. Code : 49447

Day and Date : Monday, 12 - 11 - 2018 **Total Marks : 100**

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

Instructions :
1) **Q4 & Q8 are compulsory.**
2) **Attempt any two questions from Q1, Q2, Q3.**
3) **Attempt any two questions from Q5, Q6, Q7.**
4) **Figures to the right indicate full marks.**

SECTION - I

Q1) a) What is grid computing? Explain different topologies of grid? Explain features of computational and data grid? **[8]**

b) How user can build distributed client/server application model using CORBA? **[8]**

Q2) a) With neat schematic explain structure of Portlet Wrapper generator? **[8]**

b) Explain OGSA with following : **[8]**

i) Service instance semantics.

ii) Service data semantics.

Q3) a) What is autonomic computing? Explain the features of autonomic computing? **[8]**

b) Explain GT3 index service and system level services. **[8]**

Q4) Write a short note on (Any Three) : **[18]**

a) DAML+ OIL and OWL.

b) WSRF.

c) Ontology based grid resource matching.

d) RPC.

P.T.O.

SECTION - II

Q5) a) Explain the importance of monitoring in grid? Explain Grid monitoring architecture? [8]

b) What is cloud? Explain following services in cloud : [8]

i) Desktop as a service.

ii) Platform as a service.

Q6) a) What is Scheduling? Explain scheduling paradigms in Grid (any two). [8]

b) What is virtualization? What are the characteristics of virtualization? Explain foundational issues of virtualization? [8]

Q7) a) Explain job life cycle and job management in condor? [8]

b) With neat schematic explain architecture of Autopilot. [8]

Q8) Write a short note on (Any three) : [18]

a) SOA and Cloud.

b) Client Desktop.

c) Authorization modes in GSI.

d) Firewall in grid security.

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