Roll No. .....

3341

B. Tech. 6th Semester (CSE) (Elective - III) Examination – May, 2023

DISTRIBUTED SYSTEM

Paper : PEC-CSE-316-G

Time : Three Hours] *[Maximum Marks : 75*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all, selecting at least ***one*** question from each Section. Question No. 1 is ***compulsory***. All questions carry equal marks.

1. Write short notes on : $6 \times 2.5 = 15$

(a) Software concept of distributed system

(b) Goals of distributed operating system

(c) Mutual Exclusion

(d) RPC

P. T. O.

(e) Need of consistency model

(f) Fault Tolerance

SECTION – A

2. Define distributed operating system. What are advantages and disadvantages of distributed operating system ? Discuss major design issues of a distributed system. 15

3. (a) Explain ATM network in detail 8

(b) Explain client -server model. 7

SECTION – B

4. What is deadlock ? How it can be handled in distributed system ? Explain. 15

5. (a) What is thread ? Describe thread usage. 7

(b) What is real time distributed system ? Also explain design issue in real time distributed system. 8

SECTION – C

6. What is file service interface ? Differentiate between a file service using upload/download model and using the remote access model. 15

7. What is distributed shared memory ? Describe different kind of shared memory multiprocessor. 15

SECTION – D

8. Explain the following terms : 15

(a) Security Management

(b) JAVA RMI

9. Explain architecture of distributed web-based system with a diagram. 15

Roll No. .....

3337

B. Tech. 6th Semester (CSE) (Elective - II) Examination – May, 2023

ADVANCED DATABASE MANAGEMENT SYSTEM

Paper : PEC-CSE-310-G

Time : Three Hours] *[Maximum Marks : 75*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all, selecting at least ***one*** question from each Unit. Question No. 1 is ***compulsory***. All questions carry equal marks.

1. (a) Natural join

(b) Log based recovery

(c) 3NF

(d) Query optimization

(e) Carteisan product

(f) Distributed database $6 \times 2.5 = 15$

UNIT – I

2. (a) Define normal forms. 8

   (b) Define Relational Algebra. 7

3. Explain detail about query processing. 15

UNIT – II

4. Why recovery is needed in database ? Discuss check point-based recovery. 15

5. What is concurrency control ? Discuss locking, Time stamp and Multiversion concurrency control in detail. 15

UNIT – III

6. (a) What do you mean by object-oriented database. 8

   (b) Discuss difference between relational and object-oriented databases. 7

7. Discuss various replication techniques of DDBMS by giving their merits and demerits. 15

UNIT – IV

8. Explain features of enhance SQL on object relational database with help of example. 15

9. Discuss components of data ware house in details. 15

Roll No. .....

3336

B. Tech. 6th Semester (CSE) Examination May, 2023

MOBILE AND WIRELESS COMMUNICATION

Paper : ESC-CSE-308-G

Time : Three Hours] *[Maximum Marks : 75*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all. Selecting ***one*** question from each Section Q. No. 1 is ***compulsory***. All questions carry equal marks.

1. Define the following : 2.5×6

(a) MAC

(b) CSMA

(c) Security and Link Management

(d) Mobile IP-Goals

(e) Snooping

(f) HTML

SECTION – A

2. (a) Explain the cellular system architecture in detail.

(b) Briefly explain the different types of Digi Modulation techniques.

3. (a) Explain the following terms :

(i) FDMA

(ii) Classical ALOHA

(b) Discuss Digital Audio and Video Broadcasting

SECTION – B

4. (a) Explain in detail about GSM architecture suitable diagram.

(b) Discuss MAC Layered Management.

5. (a) Draw the protocol architecture of IEEE 802.11.

(b) Draw the diagram for the formation of Blueto piconet.

SECTION – C

6. (a) What are the advantages of TCP over ad- networks ?

(b) Explain briefly about TCP with neat diagram. 7

7. (a) What is multicast routing ? Explain in detail. 8

(b) Briefly explain the configuration of DHCP. 7

SECTION – D

8. (a) Draw the protocol architecture of WAP. 8

(b) Explain in detail about WWW programming model. 7

9. Write short notes on : 15

(i) GEO

(ii) LEO

(iii) MEO

Roll No. .....

3335

B. Tech. 6th Semester (CSE) Examination – May, 2023

ADVANCED JAVA

Paper : PCC-CSE-306-G

Time : Three Hours] *[Maximum Marks : 75*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all, selecting at least ***one*** question from each Unit. Question No. 1 is ***compulsory***. All questions carry equal marks.

1. (a) Define CRUD.

(b) What is WAR File ?

(c) Define Hibernate Lazy Collection.

(d) Differentiate between Constructor and Setter Injection.

(e) What are the advantages of JSP over Servlets ?

(f) Describe Android R.java file. $6 \times 2.5 = 15$

UNIT – I

2. (a) Describe life cycle of Servlet.

   (b) Explain how request dispatcher works in servlets ?

3. Explain MVC in JSP.

UNIT – II

4. Explain in detail core components of Struts.

5. Write a program displaying steps to delete an email using Java Mail API.

UNIT – III

6. (a) Explain Hibernate HQL.

   (b) Explain Hibernate HCQL.

   (c) Explain Hibernate Logging with Log4j.

7. Elaborate Spring MVC Tiles with the help of program.

UNIT – IV

8. Explain Android Widgets in details.

9. Write short note on any ***three*** of these : $5 \times 3 = 15$

(a) Creational Pattern

(b) Behavioural Pattern

(c) Structural Pattern

(d) J2EE Pattern

(e) Presentation Layer

Roll No. .....

3334

B. Tech. 6th Semester (CSE) Examination – May, 2023

ARTIFICIAL INTELLIGENCE

Paper : PCC-CSE-304-G

Time : Three Hours] *[Maximum Marks : 75*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all, selecting at least ***one*** question from each Section. Question No. 1 is ***compulsory***. All questions carry equal marks.

1. Explain the following Questions : $6 \times 2.5 = 15$

   (a) Uninformed Search

   (b) Genetic Algorithm

   (c) Dempster-Shafer Theory

   (d) Explanation Based Learning

(e) Expert Systems

(f) Identification Trees

SECTION – A

2. (a) What is Artificial Intelligence ? State examples of AI problems. 8

(b) Differentiate the DFS and BFS with merits and demerits. 7

3. (a) Explain the Best-First-Search Procedure with example. 8

(b) Explain AO* algorithm with an example. 7

SECTION – B

4. Explain in detail Knowledge Representation Techniques and schemes. 15

5. State various issues knowledge representation in detail. 15

SECTION – C

6. Explain Probability and Bay's Theorem. 15

7. What is Partial-order Planning. explain in detail ? 15

SECTION – D

8. What are the Current trends in Artificial Intelligence. Elaborate ? 15

9. Explain the following types of learning : . 15

(a) Learning by Induction,

(b) Rote Learning,

(c) Symbol Based Learning

Roll No. .....

3333

B. Tech. 6th Semester (CSE) Examination – May, 2023

COMPILER DESIGN

Paper : PCC-CSE-302G

Time : Three Hours] *[Maximum Marks : 75*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all, selecting ***one*** question from each Section. Question No. 1 is ***compulsory***.

1. Explain the following questions : $6 \times 2.5 = 15$

   (a) Role of lexical analyzer

   (b) Language Processors

   (c) Recursive Descent Parser

   (d) Handle pruning

   (e) Rules to construct the LR (0) items

   (f) Forms of objects code

SECTION – A

2. (a) What do you mean by Compiler ? Explain various Phases of Compiler. 10

   (b) Explain various compiler construction tools. 5

3. (a) Construct a Finite Automata equivalent to the regular expression : 10

   $(a|b)^* \,|\, (ab)^* b \,|\, a^* (bb)^*$

   (b) Explain implementation of lexical analyzer. 5

SECTION – B

4. (a) Explain the parsing techniques with a hierarchical diagram. 7.5

   (b) What are the problems associated with Top Down Parsing ? 7.5

5. Explain operator precedence parsing in detail. Explain with the help of example. 15

SECTION – C

6. (a) Prepare a canonical parsing table for the given grammar : $S \rightarrow CC$ $C \rightarrow cC/d$ 10

   (b) Explain three address code, quadruples and triples. 5

7. (a) Construct SLR parsing table for the following grammar : 7.5

R → R' | ' R | R R | R* | (R) | a| b

(b) Write Rules to construct FIRST Function and FOLLOW Function. Consider Grammar. 7.5

E → E+T | T

T → T*F | F

F → (E) | id

SECTION – D

8. (a) What is the use of symbol table ? Explain the various data structures associated with symbol table. 8

(b) Explain the various types of errors generated during the various phases of the compiler. How does we recover from these errors ? 7

9. Explain the following with example : $2 \times 7.5 = 15$

(a) Various machine independent code optimization techniques.

(b) Register allocation for temporary and user defined variables.
