This question paper contains **3** printed pages]

PD—06—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Fourth Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

ESSENTIALS OF COMPUTER SECURITY

(Wednesday, 03-04-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 Hours *Maximum Marks—75*

N.B. *:— (i) All questions are compulsory.*

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if required.

(iv) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

*1. Attempt any five of the following (***3 marks each) :** **15**

(a) Explain Threates.

(b) Explain digital signature.

P.T.O.

(*c*) Explain vulnerability of Passwords.

(*d*) Explain access control context.

(*e*) Explain database management system.

(*f*) Explain intruder behavior

(*g*) Explain access rights.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain in detail symmetric encryption.

(*b*) Explain in detail model for computer security.

(*c*) Difference between threates and assets.

(*d*) Explain in detail password selection strategies.

(*e*) Explain in detail model for electronic user authentication.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain in detail authentication.

(*b*) Explain in detail public key encryption structure.

(*c*) Explain in detail characteristics used in biometric application.

(*d*) Differences between digital signature and digital envelopes.

(*e*) Explain in detail intruders.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain in detail analysis approaches.

(*b*) Differences between intruders detection and intruders behavior.

(*c*) Explain in detail Role Based Access Control.

(*d*) Explain in detail the challenges of computer security.

(*e*) Explain the need of database security.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Analysis approach.

(*b*) Assets.

(*c*) Attacks.

(*d*) Computer security

(*e*) Intruders detection.

This question paper contains **3** printed pages]

PD—05—2024

FACULTY OF SCIENCE & TECHNOLOGY

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

MARCH/APRIL, 2024

(Revised/CBCS Pattern)

COMPUTER SCIENCE

(Principle of Compiler Design)

(Wednesday, 03-04-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Assume suitable data, if required.

(4) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain phases of complier.

(*b*) Define programming languages.

(*c*) Explain cross compiler.

(*d*) Explain errors in compiler designing.

(*e*) Explain data elements.

(*f*) Explain intermediate code.

(*g*) Explain parse tree.

P.T.O.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain lexical and syntactic structure of language.

(*b*) Explain need of translator.

(*c*) Explain capabilities of context free grammar.

(*d*) Explain NFA in detail.

(*e*) Explain assignment statements.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain implementation of syntax directed translator.

(*b*) Explain different data structure in compiler designing.

(*c*) Explain Predictive parsers in detail.

(*d*) Explain evaluation of postfix notation.

(*e*) Explain regular expression in detail.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain shift reduce parsing.

(*b*) Explain LR parsers in detail.

(*c*) Explain multi pass compiler.

(*d*) Explain conversion of regular expression to finite automata.

(*e*) Explain role of lexical analyzer.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) DFA

(*b*) Sources of optimization

(*c*) Bootstrapping

(*d*) Operator precedence parsing

(*e*) Code generation.

This question paper contains **3** printed pages]

PD—13—2024

FACULTY OF SCIENCE & TECHNOLOGY

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(Programming in JAVA)

(Friday, 05-04-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Identifiers

(*b*) 'this' keyword

(*c*) JVM

P.T.O.

(*d*) Variables

(*e*) Finally clause

(*f*) Constant

(*g*) Regular Expression.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain JAVA features.

(*b*) Explain structure of JAVA program with example.

(*c*) Explain different data types in JAVA.

(*d*) Explain looping statement in JAVA.

(*e*) Write a JAVA program to display addition of 10 integer numbers.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain method overloading with an example.

(*b*) What is array ? Explain one-dimensional array with example.

(*c*) Explain the effect of "final" keyword on class, variables and method.

(*d*) What is inheritance ? Explain in details.

(*e*) Write a JAVA program for constructor overloading.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) What is interface ? Explain with example.

(*b*) Explain inner class in detail.

(*c*) What is error ? Explain different types of errors.

(*d*) What is package ? How to create and accessing package ?

(*e*) Write a JAVA program to show the use of try....catch statements.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Explain JDBC architecture in detail.

(*b*) Explain string class and its methods with example.

(*c*) Explain method overriding with example.

(*d*) Explain JAVA date and time functions with example.

(*e*) Write a JAVA program to save the square and cube of the number in “result.txt” file.

This question paper contains **3** printed pages]

PD—29—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

APRIL/MAY, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(BCS-403)

(Relational Database Management System)

(Friday, 12-4-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions carry equal marks.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if necessary.

1. Attempt any *five* of the following : 15

(*a*) Explain advantages and disadvantages of RDBMS.

(*b*) Explain various DML commands used in SQL.

(*c*) Explain various arithmetic operators used in SQL.

(*d*) Explain the concept of single row conversion.

(*e*) Explain declaration section of PL/SQL.

P.T.O.

(*f*) Explain various logical operators used in SQL.

(*g*) Explain concept of attributes in detail.

2. Attempt any *three* of the following : 15

(*a*) Explain various users of DBMS.

(*b*) Explain BETWEEN operator in detail.

(*c*) Explain concepts of tuples in detail.

(*d*) Explain any *two* DDL commands.

(*e*) Explain concept of primary key in detail.

3. Attempt any *three* of the following : 15

(*a*) Explain DISTINCT clause in detail.

(*b*) Explain concept of views in detail.

(*c*) What is %ROWTYPE attribute ? Explain it with example.

(*d*) Explain with example how table is altered in SQL.

(*e*) Explain transaction control commands in detail.

4. Attempt any *three* of the following : 15

(*a*) What is trigger ? Explain types of triggers in detail.

(*b*) Write SQL query to create table student with name, roll_number and total_marks and add three records into it.

(*c*) Explain the procedure to enable and disable trigger with example.

(*d*) Explain procedure to enable and disable triggers.

(*e*) Explain subqueries and its types.

5. Write short notes on any *three* of the following : 15

(*a*) Outer join

(*b*) Multiple row functions

(*c*) Types of SQL commands

(*d*) Applications of RDBMS

(*e*) Entities.

This question paper contains **3** printed pages]

PD—20—2024

FACULTY OF COMPUTER SCIENCE

B.Sc. (CS) (Fourth Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper AF-30

(Software Engineering)

(Monday, 8-4-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain role of software.

(*b*) Explain product and process.

(*c*) Explain process framework.

(*d*) Explain team software process.

P.T.O.

(*e*) What is an Agile process ?

(*f*) Explain communication practices.

(*g*) Explain system simulation.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain various software myths.

(*b*) Describe the different characteristics of software.

(*c*) Explain evolving role of software.

(*d*) Explain Waterfall model in detail.

(*e*) Explain software process in detail.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain spiral model in detail.

(*b*) Explain layered technology in detail.

(*c*) Explain PSP in detail.

(*d*) Explain incremental process model.

(*e*) Explain feature driven development.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain politics of Agile Development.

(*b*) What is an Agile process model ?

(*c*) Explain the essence of practice in software engineering practice.

(*d*) Explain computer based systems.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Evolving role of software

(*b*) Evolutionary process model

(*c*) Analysis modeling principles

(*d*) A system engineering hierarchy

(*e*) Planning practices.