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VD—06—2024

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper BCS-404-B

(Essentials of Computer Security)

(Wednesday, 27-11-2024) **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.

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

(*a*) Explain role-based access control.

(*b*) Explain Relational Database in detail.

(*c*) What do you mean by public key ?

(*d*) Explain the strategies for selecting good password.

P.T.O.

(*e*) Explain Cyber criminals.

(*f*) What is Cipher text ?

(*g*) Explain model for computer security.

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

(*a*) Explain public key encryption structure.

(*b*) Explain analysis approaches for intrusion detection.

(*c*) Explain necessity of database encryption.

(*d*) Explain concept of assets.

(*e*) Explain general model for access control.

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

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

(*b*) What do you mean by threat ?

(*c*) Explain concept of encryption and decryption.

(*d*) Explain access control principles.

(*e*) Explain physical characteristics used in Biometric Applications.

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

(*a*) Explain the scope of computer security.

(*b*) Explain the concept of Data Integrity.

(*c*) Explain procedure to create digital envelope.

(*d*) Explain concept of Anomaly detection in detail.

(*e*) Explain concept of security.

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

(*a*) Confidentiality

(*b*) Public-Key Encryption Structure

(*c*) A Model for Electronic User Authentication

(*d*) Definition of Computer Security

(*e*) Offline dictionary attack.

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

VD—05—2024

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(Principle of Compiler Design)

(Wednesday, 27-11-2024) **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 necessary.

(*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 need of translator.

(*b*) Explain Bootstrapping.

(*c*) Explain statements in brief.

P.T.O.

(*d*) Explain Semantic errors in brief.

(*e*) What is loop optimization ?

(*f*) What is syntax tree ? Explain in brief.

(*g*) Explain role of lexical analyzer in brief.

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

(*a*) Explain phases of compiler in brief.

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

(*c*) Explain different data structures in brief.

(*d*) Define compiler. Also explain one pass and multi-pass compiler in detail.

(*e*) Explain transition diagram with an example in detail.

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

(*a*) Explain Top down parsing technique.

(*b*) Explain Regular Expression in detail.

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

(*d*) Explain language specifying lexical analyzer in detail.

(*e*) Explain minimizing the number of states of DFA.

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

(*a*) Explain intermediate code in detail.

(*b*) Differentiate between Parse tree and Syntax tree.

(*c*) Explain lexical base errors.

(*d*) How postfix notations are evaluated ? Explain with an example.

(*e*) Explain syntactic phase errors in detail.

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

(*a*) Cross compiler

(*b*) Code generation

(*c*) Postfix notation

(*d*) Input Buffering

(*e*) LR Parsing.

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VD—13—2024

FACULTY OF COMPUTER SCIENCE

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

NOVEMBER/DECEMBER, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper BCS-401

(Programming in Java)

(Friday, 29-11-2024) **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 necessary.

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

(*a*) Explain Java and Internet.

(*b*) Explain the final variable in Java.

(*c*) Explain the use of "THIS" Keyword in Java.

(*d*) Explain the Final Variable and Final Class.

P.T.O.

(*e*) Discuss the history of Java.

(*f*) What are the Java Features ?

(*g*) Explain the Java Programming Structure.

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

(*a*) Explain in detail super Method Overriding.

(*b*) Discuss the Date and Times in Java.

(*c*) Explain Multiple Catch Statement in detail.

(*d*) Write a Java program to demonstrate on display database records from nanded.mdb file.

(*e*) Explain String Buffer Class.

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

(*a*) Explain the String Class methods.

(*b*) Explain how to Define and Implement Interface.

(*c*) Explain String Class in detail.

(*d*) Discuss how to create User Defined Exception.

(*e*) What is Inheritance ? Explain any *two* types.

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

(*a*) Explain Byte Stream Class in detail.

(*b*) Explain how to create and access Package.

(*c*) Explain in detail Constructor Overloading with example.

(*d*) Explain in detail Method Overriding with example.

(*e*) Explain in detail Finalizer Method with example.

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

(*a*) Explain in detail Method Overloading with example.

(*b*) Explain in detail Inner Classes.

(*c*) What is Data Type ? Explain its type.

(*d*) Explain in detail Abstract Methods with example.

(*e*) Explain in detail Architecture of JDBC.

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VD—29—2024

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper BCS-403

(RDBMS)

(Wednesday, 4-12-2024) **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.

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

(*a*) Explain order by clause.

(*b*) Explain data constraints.

(*c*) What are the advantages of RDBMS ?

(*d*) Explain group by clause.

P.T.O.

(*e*) Explain data types in SQL.

(*f*) Explain self join with example.

(*g*) Explain comparison operators IN, LIKE, IS NULL.

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

(*a*) Explain outer join in detail.

(*b*) Explain logical operators.

(*c*) Explain PL/SQL block.

(*d*) Explain where clause.

(*e*) Explain number function with example.

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

(*a*) Explain equal join.

(*b*) Explain cross join.

(*c*) Explain altering table with example.

(*d*) Explain string function.

(*e*) Explain concept of sorting with example.

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

(*a*) Explain multiple row functions with example.

(*b*) Explain sub-queries and its types.

(*c*) Explain DML commands in SQL.

(*d*) Explain concept of primary key with example.

(*e*) Explain network model in detail.

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

(*a*) DISTINCT clause

(*b*) View

(*c*) TCL

(*d*) Foreign key

(*e*) Tuples, relations and their schemes.

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

VD—20—2024

FACULTY OF COMPUTER SCIENCE

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

NOVEMBER/DECEMBER, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper BCS-402

(Software Engineering)

(Monday, 2-12-2024) **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 necessary.

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

(*a*) Explain the Evolving Role of Software.

(*b*) What is Software Engineering ? Enlist different Software Process.

(*c*) Explain the Agile Process in short.

(*d*) Explain the essence of Software Engineering Practice.

P.T.O.

(*e*) Explain the system Engineering Hierarchy in detail.

(*f*) What are the characteristics of software ?

(*g*) What are the applications of software ?

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

(*a*) Explain different types of Myths in software developing.

(*b*) Explain Software Evolution in detail.

(*c*) Explain Software Crisis and Horizon in detail.

(*d*) What are the different Process Technologies ?

(*e*) Explain software engineering—A Layered Technology in detail.

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

(*a*) What is Agility ? Explain the politics of Agile Development.

(*b*) Explain Feature Driven Development (FDD) in detail.

(*c*) Explain Personal Software Process (PSP) in detail.

(*d*) Explain the Incremental Process Model.

(*e*) What is Agile Process Model ? Explain in detail.

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

(*a*) Explain Team Software Process (TSP).

(*b*) Explain the Waterfall Model in detail.

(*c*) Explain the Evolutionary Model in detail.

(*d*) Explain the Design Modeling Principles.

(*e*) Explain the Spiral Model in detail.

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

(*a*) Explain the Analysis Modelling Principles in detail.

(*b*) Explain Communication Practice in detail.

(*c*) Explain Planning Practice in detail.

(*d*) Explain System Modelling in detail.

(*e*) Explain System Simulation in details.