F–8594	Sub. Code
	7MCI3C1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Computer Science and Information Technology

PRINCIPLES OF COMPILER DESIGN

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is a Token? Give an example.

2. Write down the rules for writing regular expression.

3. What is a Handle?

4. Define the term “Parser”. What are the types of two types of Parsers?

5. Write down the rules for turning an L-attributed SDD into an SDT.

6. Differentiate between parse tree and syntax tree.

7. Find the postfix form for the following expression: (A/B)–(C*D).

8. What is meant by declaration?

9. What is a flow graph?

10. What are the issues in the design of code generators?

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) What are the compiler-construction tools? Describe.

Or

(b) Explain the need for lexical analysis.

12. (a) What is a Context-free Grammar? Give an example.

Or

(b) Write an algorithm for construction of an SLR parsing table with examples.

13. (a) Describe the specification of a simple type checker.

Or

(b) Write the unification algorithm and explain it.

14. (a) Discuss about the simple stack allocation scheme.

Or

(b) Compare call-by-reference, call-by-value and call-by-name.

15. (a) What are the principal sources of optimization? Explain.

Or

(b) Explain the loops in flow graphs.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an algorithm to convert NFA into a DFA and explain with example.

17. Explain the data structure used for implementing Symbol Table.

18. Describe the translator for simple expression.

19. Discuss about the syntax-directed translation scheme for assignment statement.

20. Write an algorithm for code generation and explain it.

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F–8595	Sub. Code
	7MCI3C2

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Computer Science and Information Technology

SOFTWARE ENGINEERING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are software metrics?

2. What is the goal of prototyping model?

3. What are the three categories of software risk?

4. What is a major drawback of the function point approach?

5. What is the difference between verification and validation?

6. What do you mean by inspection?

7. Write down any two objectives of software design.

8. Differentiate between top-down and bottom-up design approach.

9. Differentiate between error and fault.

10. What is the basic purpose of testing?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) What are the limitations of waterfall model? Explain.

Or

(b) Explain the distribution of effort in the software life cycle.

12. (a) Discuss in detail about the Data Dictionary.

Or

(b) Explain the two approaches to prototyping.

13. (a) What are effort multipliers in COCOMO? Explain.

Or

(b) Describe the risk management plan for a project.

14. (a) Explain about the software design principles.

Or

(b) What is coupling? Explain the different levels of coupling.

15. (a) What is the difference between a fault and a failure? Does testing observe faults or failures?

Or

(b) Write a short note on Psychology of testing.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. What are the various phases of waterfall model? Explain.

17. Explain the general structure of an SRS.

18. Describe any two model based approach for cost estimation.

19. Explain any two software design notations with examples.

20. Discuss the different levels of software testing.

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F–8596	Sub. Code
	7MCI3C3

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Computer Science and Information Technology

VISUAL PROGRAMMING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is CTS?
2. What is .NET?
3. How to use a check box control?
4. Distinguish between procedure and function.
5. What are the file types of ASP .NET?
6. What is the usage of Global.asax file?
7. Differentiate between overloading and overriding.
8. What are the members of a class?
9. What is Data Grid?
10. Write down any two characteristics of ADO.NET.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) What is CLS? Specify its purpose.

Or

(b) What do you mean by Garbage collection? Explain.

12. (a) Write down the properties of RichText Boxes.

Or

(b) Explain the purpose of using graphics and file handling controls.

13. (a) What are ServerUtility methods? Explain.

Or

(b) What are the properties of the HttpRequest Class? Explain.

14. (a) Write a short note on abstraction and encapsulation.

Or

(b) What are windows authentication methods? Explain.

15. (a) What is SQL? Explain the different types of SQL statements with examples.

Or

(b) Discuss in detail about the components of ADO.NET.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. What are the major components of the .NET Framework? Explain.

17. Write a VB Program to implement the Try, Catch and Finally Statement.

18. What are the five types of validation controls? Explain.

19. Write a short note on inheritance and polymorphism.

20. Explain the various steps involved in creating and filling a dataset.

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F–8597	Sub. Code
	7MCI3E1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Computer Science and Information Technology

Elective : MULTIMEDIA AND ITS APPLICATIONS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define the term "Multimedia".

2. What is the purpose of networking?

3. What are the two classes of fonts?

4. What is the primary goal of the multimedia system services?

5. What are the parameters needed for evaluating a compression system?

6. What is CD-I?

7. What is the function of teleconferencing system?

8. Write down any two Broadband services.

9. What is Storyboarding?

10. Define: World Wide Web.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Define the two computer platforms most often used for multimedia and how their capabilities affect development and deployment choices.

Or

(b) Explain the functions of any two multimedia hardware devices.

12. (a) Describe the elements of text.

Or

(b) Explain the limitations in workstation operating system.

13. (a) Explain the Transform digital representation of sound.

Or

(b) Compare NTSC, PAL and SECAM.

14. (a) Explain the health-care applications to review the requirements that are imposed on the networks services.

Or

(b) Write a short note on Galatea and Etherphone.

15. (a) What techniques can be used to estimate the cost of a multimedia project? Explain.

Or

(b) What is an Internet? Explain the functions of Internet.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. What are the various applications of multimedia? Explain.

17. Describe the different graphics file and application formats.

18. Explain about the JPEG Image Compression Standard.

19. Discuss the architecture for network based multimedia services.

20. What are the events involved in the multimedia application development process? Discuss.

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F–8599	Sub. Code
	7MCI3E3

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Computer Science and Information Technology

Elective – WEB TECHNOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. How is a comment shown in HTML?

2. What is an ordered list?

3. Write down the four principles of Ajax.

4. What are the advantages of XML?

5. How to declare variables in JavaScript?

6. What is the purpose of regular expression?

7. Differentiate between bounded loops and unbounded loops.

8. What is database?

9. How can a Perl variable act as a string and a number?

10. What is subroutine?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) What are the attributes of <frame> tag? Explain.

Or

(b) What are cascading style sheets and how are they coded? Explain them with an example.

12. (a) How is XML defined?

Or

(b) Explain how handling Dynamic HTML with Ajax.

13. (a) What are the relational and bitwise operators in JavaScript? Give examples.

Or

(b) Write a JavaScript to compare two given numbers whose inputs are from HTML form.

14. (a) Explain the features of MYSQL.

Or

(b) Write a PHP program to find the factorial of a given number.

15. (a) Explain any five text handling facilities provide by Perl.

Or

(b) Explain how handling XML with Perl.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain with examples the various text formatting attributes of HTML.

17. What is Document Object Model? Explain the various objects in Document Object Model.

18. Explain the different types of loop control structures in JavaScript.

19. What are the eight data types supported by PHP? Give examples.

20. What are the operators supported by Perl? Give examples.

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F–8600	Sub. Code
	7MCI3E4

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Computer Science and Information Technology

Elective – DATA MINING AND WAREHOUSING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A ($10 \times 2 = 20$)

Answer **all** questions.

1. What is the use of machine learning?

2. What is Data Mining?

3. Define the term "Data mart".

4. What is a data cube?

5. Define: Data cleaning.

6. Why preprocess the data?

7. What are the two types of hierarchical clustering methods?

8. Define the term "Prediction".

9. What are the different types of web mining?

10. What is a time-series database?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Compare data mining and query tools.

Or

(b) Explain the various steps in data mining process.

12. (a) What is metadata? What are the types of metadata? Describe.

Or

(b) What are OLAP operations in the multidimensional data model? Explain.

13. (a) What are the strategies for data reduction? Describe.

Or

(b) Explain the different forms of data preprocessing.

14. (a) Write the backpropagation algorithm and explain it.

Or

(b) Describe the density based methods.

15. (a) Explain about the spatial mining tasks.

Or

(b) What are the types of data in cluster analysis? Explain.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain any two data mining techniques.

17. Describe the data warehouse backend process.

18. What is data transformation? Describe.

19. Discuss about the Naïve Bayesian classification.

20. Explain the two most commonly used partition clustering methods.

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F–8602

Sub. Code
7MCI3E6

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Computer Science and Information Technology

Elective – MOBILE COMPUTING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define : Mobile computing.

2. What is labtop computing?

3. What is the main advantage of code division multiplexing?

4. List out any two advantages of cellular systems.

5. What are the services provided by foreign agent?

6. Define: (a) Mobile node (b) Home network

7. What is the purpose of IP tunneling?

8. Define : Encapsulation.

9. What is ingress filtering?

10. What are the entities of mobile IP?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) What is user mobility and device portability? Explain.

Or

(b) Write a short note on mobile networking.

12. (a) What are the three security services offered by GSM? Explain.

Or

(b) What are the two different ways of spreading the spectrum? Explain.

13. (a) Write a short note on home agent processing.

Or

(b) Explain the registration of a mobile node.

14. (a) Write a brief note on tunnel management.

Or

(b) Compare broadcast and multicast datagram routing.

15. (a) What is reverse tunneling? Explain.

Or

(b) Write a short note on basic DHCP configuration.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss about the overview of IP and routing.

17. What is multiplexing? Compare SDM, FDM, TDM, and CDM.

18. Explain about the agent solicitation and discovery mechanism.

19. Explain briefly about the route optimization for Mobile IP.

20. What are the components and interface of the WAP architecture? Describe.

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