

BFMS-439

M.Sc. (Final) Examination, 2023

COMPUTER SCIENCE

Paper - MCS-201

(DCN)

Time : 3 Hours]

[Maximum Marks : 50

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

Section-A

1. (i) Define Topology.
- (ii) What is a node in a Network ?
- (iii) Define Switching.

- (iv) Define Datagram.
- (v) What do you understand by an error in Digital Communication ?
- (vi) Define Sliding Window.
- (vii) What is Routing ?
- (viii) Write importance of Tunneling.
- (ix) Define Cyber Crime.
- (x) What is Phishing ?

Section-B

2. Write a note on Network Types.

Or

Explain TCP/IP stack of protocols.

3. What is Message Switching ? Explain.

Or

Explain the various digital transmission modes.

4. Write a note on Enq/Ack.

Or

Differentiate A stop & wait ARQ and sliding window ARQ.

5. Explain how network addressing is performed.

Or

Explain client server model.

6. Explain Denial of Service (DOS) attack.

Or

Classify Cybercrime.

Section-C

7. Explain OSI model in detail.
8. Explain the various switching techniques.
9. Explain the various error detection and correction techniques.
10. Give a note on network layer protocols.
11. What is Phishing ? Explain the various phishing techniques with suitable examples.

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M.Sc. (Final) Examination, 2023

COMPUTER SCIENCE

Paper - MCS-202

(Data Structure)

Time : 3 Hours]

[Maximum Marks : 50

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

Section-A

1. (i) What is linked list ?
- (ii) What is ADT ?
- (iii) What is Priority Queue ?

- (iv) What is Array ?
- (v) What is Binary Search ?
- (vi) Define Radix Sort.
- (vii) Define Binary tree.
- (viii) What is B-Tree ?
- (ix) What is Graph ?
- (x) Define open and close walk in Graph.

Section-B

2. Explain time and space complexity.

Or

Explain Doubly linked list. Write an algorithm to insert and delete an element in Doubly linked list.

3. What is Stack ? Write an algorithm to push and pop operation in stack.

Or

What is Circular queue ? Write an algorithm to insert and delete element from circular queue.

4. Defference between Linear and Binary search explain with example .

Or

Explain Quick sort with example.

5. Explain Tree traversal :

- (a) Inorder
- (b) Preorder
- (c) Postorder

Or

Explain AVL Tree with example.

6. What is Graph ? Explain the types of graph.

Or

Explain Representation of graph.

Section-C

- 7 What is Algorithm ? Explain efficiency and analysis of algorithm
- 8 Explain Double ended queue.
- 9 Explain Bubble sort with example
- 10 What is Binary Tree ? Explain its types and write application of Binary tree.
- 11 Explain Depth first traversal and Breadth first traversal with example.

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M.Sc. (Final) Examination, 2023

COMPUTER SCIENCE

Paper - MCS-203

(PHP)

Time : 3 Hours]

[Maximum Marks : 50

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

Section-A

1. (i) How are constants defined in PHP ?
- (ii) What are the main characteristics of a PHP Variable ?

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- (iii) Define the concept of Array Related Function.
- (iv) Explain use of directories in PHP.
- (v) How can we create a database using PHP and MySQL ?
- (vi) What is the use of session and cookies in PHP ?
- (vii) Write PHP statement to insert data into MySQL table.
- (viii) What is the use of substr () function in PHP ?
- (ix) How comments are used in PHP ? Give example.
- (x) Name any two date () functions with PHP.

Section-B

2. How is PHP parsed ? Also explain how to embed PHP in HTML Code.

Or

Explain about the following data types in PHP :

- (a) Float
- (b) String
- (c) Boolean

3. Write a PHP program to demonstrate date and time functions.

Or

Write a PHP script to accept the directory name and print the contents of that directory.

4. What is the concept of file in PHP ? Explain with an example.

Or

Write a code to upload and download a file in PHP.

5. Write a PHP script using try, catch and throw for exception handling.

Or

What is the use of hidden field in PHP ? Explain with suitable example.

6. How to create and call a stored procedure ? Explain with example.

Or

Explain in brief about how to execute multiple queries in MySQL ?

Section-C

7. Explain the following with example :

- (a) Branching Statements in PHP
- (b) Loops in PHP

8. Differentiate between Built-in-function and User Defined Function. Explain how return value from user defined function with suitable example ?

9. What do you mean by String Handling Function ? Write a PHP script to demonstrate string function.

10. Write a PHP script on MySQL database for the following :

- (a) Add Data to Table
- (b) Retrieve Data from Table
- (c) Update Data
- (d) Delete Data

11. Write a PHP Code for create signup and login form with validation feature.

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M.Sc. (Final) Examination, 2023

COMPUTER SCIENCE

Paper - MCS-204 (B)

(Web Application Programming)

Time : 3 Hours]

[Maximum Marks : 50

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

Section-A

- I. (i) Differentiate between managed and unmanaged codes.
- (ii) How is a .NET application executed ?
- (iii) What are static constructors in C# ?
- (iv) What is reflection ?

- (v) What is a web form ?
- (vi) Discuss client and server side validation
- (vii) What is the use of range validator ?
- (viii) Explain the difference between ADO.NET and ASP.NET.
- (ix) What is serialization ?
- (x) Differentiate between data set and data table

Section-B

2. Discuss boxing and unboxing in .NET with its advantages and disadvantages.

Or

Explain .NET architecture.

3. Explain the visibility of class and class members with suitable examples.

Or

What is an interface ? How is it useful explain with suitable examples in C#.

4. How will you create a multiform web project ?

Or

What is the basic difference between a checkbox and a radiobutton ? Discuss major properties of checkbox and radiobutton.

5. Explain calendar control with its properties and events with an example.

Or

Explain Ad Rotator control. What is the procedure to add advertisements on Ad Rotator control using XML file.

6. Design a web form to illustrate database connectivity for inserting and display records.

Or

Write an example code to fill the Gridview by using the object of data table during runtime.

Section-C

7. Explain flow-control statements in C#.
8. Explain Delegates in detail. In which circumstances is delegate more appropriate than an interface ?
9. Write down the steps to create and run a web application with :
 - (a) Labels
 - (b) Textboxes
 - (c) Radiobuttons.
10. What is state management in ASP.NET ?
11. Explain ADO.NET architecture with the help of a diagram. What is the concept of connected and disconnected architecture ?

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M.Sc. (Final) Examination, 2023

COMPUTER SCIENCE

Paper - MCS-205 (C)

(Cloud Computing)

Time : 3 Hours]

[Maximum Marks : 50

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit 50 words). Each question carries 2 marks.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit 200 words). Each question carries 3 marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer any *three* questions out of five (Answer limit 500 words). Each question carries 5 marks.

Section-A

1. (i) Define Cloud Computing.

- (ii) What is AWS ?
- (iii) Define Virtualization.
- (iv) Define Hypervisor.
- (v) What is Data Center based Cloud ?
- (vi) Define Public Cloud.
- (vii) Define Private Cloud.
- (viii) What is on premises cloud service ?
- (ix) What is trust in cloud computing ?
- (x) What is Reputation in cloud computing ?

Section-B

2. Describe Google App engine.

Or

Describe Microsoft VMware.

3. Describe type of virtualization.

Or

Describe benefits of virtualization.

4. Describe international standards of cloud computing.

Or

Describe integration of Public and Private Cloud.

5. Describe advantages of Public Cloud.

Or

Describe advantages of Private Cloud.

6. Describe infrastructure security in cloud.

Or

Describe application level security in cloud.

Section-C

7. Explain functioning of cloud computing and its advantages.
8. Explain virtualization for Enterprises.
9. Explain the building of private cloud using open source tools.
10. Explain installing a cloud service.
11. Explain data privacy and security issues.