K24U 2872

Reg. No. : .....

Name : .....

V Semester B.C.A. Degree (C.B.C.S.S. – O.B.E. – Regular/Supplementary/ Improvement) Examination, November 2024
(2019 to 2022 Admissions)
Core Course
5B12BCA : OPERATING SYSTEMS

Time : 3 Hours Max. Marks : 40

SECTION – A
(Short Answer)

Answer **all** the questions. (6×1=6)

1. What is the difference between a process and a program ?
2. How does preemptive scheduling work ?
3. What is compaction ?
4. Write an advantage of using a variable partition scheme.
5. What is the role of a controller in I/O hardware ?
6. Describe the Daisy Chain Method.

SECTION – B
(Short Essay)

Answer **any six** questions. (6×2=12)

7. Explain the kernel mode of CPU operations.
8. How does an operating system provide privacy services ?

P.T.O.

9. When does context switching happen ?

10. What does a long-term scheduler perform ?

11. What are the advantages of contiguous memory ?

12. What is seek time and rotational latency time for a disk ?

13. Discuss various implementation issues in the file system.

14. Describe an interrupt-driven I/O cycle.

## SECTION – C
## (Essay)

Answer **any four** questions. **(4×3=12)**

15. Describe the role of an operating system in managing program execution and input-output operations.

16. Explain the necessary conditions that must be met in order to achieve deadlock.

17. The segment table consumes less space in comparison to the page table in paging. Justify.

18. What are the various free space management techniques ?

19. How does the kernel I/O subsystem support device independence, resource and concurrency management ?

20. Explain the role of a device driver in I/O operations.

## SECTION – D
## (Long Essay)

Answer **any two** questions. **(2×5=10)**

21. Compare the modular structure and layered structure of operating systems.

22. Consider the following table of arrival time and burst time for four processes P1, P2, P3 and P4 and given Time Quantum = 2. Calculate the average waiting time using round-robin scheduling.

| Process | Burst Time | Arrival Time |
|---|---|---|
| P1 | 5 ms | 0 ms |
| P2 | 4 ms | 1 ms |
| P3 | 2 ms | 2 ms |
| P4 | 1 ms | 4 ms |

23. What is thrashing ? Explain its causes.

24. Explain the following disk management techniques used in operating systems.
    I) Partitioning
    II) Formatting
    III) File system management
    IV) Disk space allocation
    V) Disk defragmentation.

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K24U 2873

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**V Semester B.C.A. Degree (CBCSS – OBE – Regular/Supplementary/ Improvement) Examination, November 2024**
**(2019 to 2022 Admissions)**
**Core Course**
**5B13BCA : ENTERPRISE JAVA PROGRAMMING**

Time : 3 Hours Max. Marks : 40

PART – A
**Short Answer**

Answer **all** questions : **(6×1=6)**

1. Which JDBC driver type is known as the "JDBC-ODBC Bridge" ?
2. Mention any one method to handle SQL warnings in JDBC.
3. What is the purpose of the Naming class in RMI ?
4. What is a servlet in Java ?
5. Define the term "module" in the context of IDL.
6. What is the significance of the ORB.init() method in a CORBA application ?

PART – B
**Short Essay**

Answer **any 6** questions : **(6×2=12)**

7. What is metadata in the context of JDBC ?
8. What is the purpose of prepared statement in JDBC ?
9. Explain the purpose of the RMI registry.
10. What is the difference between bind() and rebind() methods in RMI ?
11. Explain the importance of thread safety in servlets.
12. What does the doGet() method in a servlet do ?
13. Define the term "Object Request Broker" (ORB).
14. Describe the process of initializing an ORB.

P.T.O.

## PART – C
## Essay

Answer **any 4** questions : **(4×3=12)**

15. Discuss error handling in JDBC. How can you use exceptions and SQL warnings to manage errors effectively ?
16. What is the role of object activation service in RMI ?
17. Describe the role of cookies in session tracking.
18. Compare CORBA with Java RMI.
19. How do client stubs and server skeletons work together in a CORBA communication process ?
20. Describe the role and functionality of holder class and helper class in CORBA applications.

## PART – D
## Long Essay

Answer **any 2** questions : **(2×5=10)**

21. Compare and contrast the four types of JDBC drivers. Discuss the advantages and disadvantages of each.
22. Explain the process of accessing a remote object as a client in RMI. Discuss how remote method arguments and return values are handled in this context.
23. Describe the life cycle of a servlet and how thread safety can be maintained throughout the different stages of this life cycle.
24. Discuss the architecture of CORBA. How does it enable interoperability between different systems ?

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**V Semester B.C.A. Degree (CBCSS – OBE – Regular/Supplementary/ Improvement) Examination, November 2024**
**(2019 to 2022 Admissions)**
**Core Course**
**5B14BCA : PYTHON PROGRAMMING**

Time : 3 Hours Max. Marks : 40

SECTION – A
**(Short Answer)**

Answer **all** the questions. **(6×1=6)**

1. _____ means those objects that can't change themselves after we initialize them.
2. Specify the function in Python that is used to convert a given value into an integer.
3. The _____ statement is used to insert an external module into your Python program.
4. What is an overflowError in Python ?
5. What is the use of the commit() method in Python databases ?
6. What is a database ?

SECTION – B
**(Short Essay)**

Answer **any six** questions. **(6×2=12)**

7. Differentiate indexing and slicing in strings.
8. What is the important feature to handle unexpected errors in Python programs ?

P.T.O.

9. What are the ways to access class attributes ?

10. What is an array in Python ?

11. Describe the parameters of the connect() method of the MySQL connector interface.

12. Distinguish between execute() and executemany() in the Python DB.

13. Write a short note on the font attribute of Tkinter.

14. Explain the Tkinter module in Python.

## SECTION – C
**(Essay)**

Answer **any four** questions. **(4×3=12)**

15. What is indentation in Python ? How is it so important in Python coding ?

16. How do you define a function in Python ?

17. How is data hiding implemented in Python ?

18. What is a transaction ? Explain its properties.

19. Explain the procedure to fetch data from a Python database.

20. What is a Python GUI ? Also write about its application areas.

## SECTION – D
**(Long Essay)**

Answer **any two** questions. **(2×5=10)**

21. Explain looping statements in detail.

22. Describe standard exceptions in Python.

23. Illustrate the data visualization module in Python. Explain its applications.

24. Explain the listbox widget, its parameters and common methods.

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**V Semester B.C.A. Degree (C.B.C.S.S. – O.B.E. – Regular/Supplementary/ Improvement) Examination, November 2024**
**(2019 to 2022 Admissions)**
**Core Course**
**5B15BCA : WEB TECHNOLOGY**

Time : 3 Hours Max. Marks : 40

PART – A
**(Short Answer)**

Answer **all** questions. **(6×1=6)**

1. How do you add comments in HTML ?
2. What is the role of the action attribute in an HTML form submission ?
3. Define HTTP.
4. Which tag is used to create a table header ?
5. How do you create an object in JavaScript ?
6. What is the purpose of the <script> tag in HTML ?

PART – B
**(Short Essay)**

Answer **any 6** questions. **(6×2=12)**

7. What is the purpose of the alt attribute in the <img> tag with example ?
8. Differentiate between the colspan and rowspan attributes in an HTML table.
9. Explain the difference between a radio button and a checkbox in an HTML form.
10. What is the history object in JavaScript ? How can you navigate through the browser's history using JavaScript ?
11. What is an array ? How do you declare an array in JavaScript ?
12. Explain the difference between == and === in PHP with example.
13. How do you create a function in PHP ?
14. What is the purpose of the header() function in PHP ? Explain with example.

P.T.O.

## PART – C

**(Essay)**

Answer **any 4** questions. **(4×3=12)**

15. Differentiate between static and dynamic web page.
16. How can you create a radio button group in an HTML form ? Explain with example.
17. What is the difference between <th> and <td> tags in a table ?
18. Explain the navigator object in JavaScript.
19. How do you create a multi-dimensional array in JavaScript ? Provide an example.
20. Explain the concept of associative arrays in PHP.

## PART – D

**(Long Essay)**

Answer **any 2** questions. **(2×5=10)**

21. Explain the various tags used to create lists with an example program.
22. Discuss the difference between include and require in PHP. Explain with example.
23. Explain the HTTP request-response cycle with a diagram.
24. Write a PHP function that performs a CRUD operation (Create, Read, Update, Delete) on a MySQL database.

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**V Semester B.C.A. Degree (CBCSS – OBE – Regular/Supplementary/ Improvement) Examination, November 2024**
**(2019 to 2022 Admissions)**
**Core Course**
**5B16BCA-E03 : C# AND.NET PROGRAMMING**

Time : 3 Hours Max. Marks : 40

SECTION – A
**(Short Answer)**

Answer **all** the questions. **(6×1=6)**

1. What is a class ?
2. What is the significance of the 'public' keyword in object-oriented programming ?
3. The _____ class is the class that inherits from another class.
4. What does ADO.NET stands for in C# ?
5. Name one method used to execute a query in ADO.NET.
6. What is the purpose of the DataSet class in ADO.NET ?

SECTION – B
**(Short Essay)**

Answer **any six** questions. **(6×2=12)**

7. C# is a strongly typed language. Why ?
8. What is the benefit of having a large standard library in the C# language ?
9. What is referred to as an object in C# ?
10. What are unary operators in C# ?

P.T.O.

11. How are the instance variables initialized ?

12. What is the significance of access modifiers in object-oriented programming ?

13. Compare the listbox control and dropdown control of a webform.

14. What is the significance of a web service ?

## SECTION – C
**(Essay)**

Answer **any four** questions. **(4x3=12)**

15. Explain the.NET framework and its main components.

16. What is environment class ? How are the command-line arguments accessed using the environment class ?

17. Explain an exit-controlled loop in C#.

18. Differentiate between Ref and out keywords in C#.

19. Describe the keyword 'virtual' with the help of the example code.

20. What is meant by 'Type discovery' ?

## SECTION – D
**(Long Essay)**

Answer **any two** questions. **(2x5=10)**

21. Write any five applications of the C# language.

22. Explain value data types in C#.

23. Differentiate between the delegate and the event in C#.

24. How does a web service work ?

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