22MCAH201 Reg No : .....

CHOICE BASED CREDIT SYSTEM

MCA SECOND SEMESTER DEGREE EXAMINATION NOVEMBER 2024

MASTER OF COMPUTER APPLICATIONS

Python Programming

Duration:3 Hours **Max Marks:70**

Part A

I. Answer any THREE of the following : **3×4= 12**

1. Evaluate the following Python code snippet and list down the errors along with the corrected code:

```
class Circle:
    def __init__(cls, radius):
        cls.radius = radius
    def area(cls):
        return 3.14 * cls.radius * 2
circle = new Circle(5)
print(area)
```

2. What is the purpose of the update() and pop() methods in dictionaries in Python?
3. Compare and Contrast import module and from module import function.
4. Explain the role of a CGI script in the web development process.

Part B

II. Answer any FOUR of the following : **4×7= 28**

5. What is file handling in Python? How is it implemented in Python?
6. Explain the concept of string slicing in Python along with examples.
7. Explain with an example how comparison of lists is executed in Python.
8. Explain the use of init function, self parameter, cls parameter and decorators in implementing classes and objects in Python with examples.
9. Compare and contrast the features and use cases of Flask and Django.

Part C

III. Answer any THREE of the following : **3×10= 30**

10. Explain recursive functions in Python. Write recursive functions for calculating factorial of an entered number and printing sum of n natural numbers.

11. Write a Python program to create a contact book where users can add, update, delete, and search for contacts. Use a dictionary to store the contact information.

12. Explain the advantages of using eval() over tuple() while taking user input for tuples. Write a Python program that takes a tuple of numbers using the eval () and calculates their sum and average.

13. Write a Python program that initializes the Employee (id, name, age and department) database and creates, reads, updates, and deletes employee records also handles user interaction through a menu.

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22MCAH202 Reg No : .....

CHOICE BASED CREDIT SYSTEM

MCA SECOND SEMESTER DEGREE EXAMINATION NOVEMBER 2024

MASTER OF COMPUTER APPLICATIONS

Data Warehousing and Data Mining

Duration:3 Hours Max Marks:70

Part A

I. Answer any THREE of the following : 3×4= 12

1. Determine the cosine similarity for two frequency term vectors given by X= (5,0,3,0,2,0,0,2,0,0) Y=(3,0,2,0,1,1,0,1,0,1). Are the documents similar?
2. Compare and contrast operational data bases and data warehouses.
3. Explain the concept of support and confidence in association rule mining.
4. Compare and contrast agglomerative clustering and divisive clustering.

Part B

II. Answer any FOUR of the following : 4×7= 28

5. Explain the various types of attributes that a data object could possess with examples of your own.
6. Explain the various kinds of data that could be mined.
7. Explain the various OLAP operations that could be applied on a data cube.
8. Explain the concept of constraint based frequent pattern mining.
9. What is overfitting in decision trees? Explain how do you deal with it.

Part C

III. Answer any THREE of the following : 3×10= 30

10. Consider the following transaction database. Construct a FP growth tree assuming that the minimum support is 3.

Transaction ID	Itemset
T1	{a,c,d,e,l,m,p}
T2	{a,b,c,f,l,m,o}
T3	{b,f,h,j,o}
T4	{b,c,k,s,p}
T5	{a,c,e,f,g,l,m,n}

11. Explain the various applications of Data Mining.
12. How do you handle missing data and noisy data in data cleaning? Explain.
13. Explain the Rule Based Classification in Data Mining.

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22MCAS204 Reg No : .....

CHOICE BASED CREDIT SYSTEM

MCA SECOND SEMESTER DEGREE EXAMINATION NOVEMBER 2024

MASTER OF COMPUTER APPLICATIONS

Full Stack Web Development

Duration:3 Hours Max Marks:70

Part A

I. Answer any THREE of the following : 3×4= 12

1. Explain table, thead-dark, table-striped, table-bordered bootstrap classes with example.
2. Explain any four features of Document Object Model.
3. What do you mean by promises in Node.js and how are they better than callback functions.
4. Write the SQL statement to create the "employees" table having employee_id, name, hire_date and designation fields. Explain the significance of these data types for each column.

Part B

II. Answer any FOUR of the following : 4×7= 28

5. What is JSON? Why is it used in Ajax-based applications.
6. Describe the steps to implement pagination using Bootstrap components. Explain the purpose of each Bootstrap class used in the example.
7. Justify the significance of jQuery - element class selector with syntax and example.
8. Define directives in AngularJS and explain ng-bind and ng-model directives with examples.
9. Compare indexed arrays and associative arrays in PHP. Illustrate how each type of array can be declared and manipulated with examples.

Part C

III. Answer any THREE of the following : 3×10= 30

10. Illustrate how custom filters can be created and applied to modify data displayed in the UI. Provide an example use case.
11. What are d-* classes? Explain any four d-* classes in detail with examples
12. Differentiate between for-in and for-of loops of JavaScript with syntax and example.
13. Discuss the importance of strings in PHP. Illustrate how to concatenate strings, find the length of a string, and replace substrings within a string with example

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22MCAS205 Reg No : .....

CHOICE BASED CREDIT SYSTEM

MCA SECOND SEMESTER DEGREE EXAMINATION NOVEMBER 2024

MASTER OF COMPUTER APPLICATIONS

Mobile Application Development

Duration:3 Hours **Max Marks:70**

Part A

I. Answer any THREE of the following : **3×4= 12**

1. Explain the role of Java API Framework in Android.
2. Compare and contrast match_parent and wrap_content layout parameters in Android.
3. List and explain any four core components of a Cordova application and their respective functionalities.
4. Write a simple Kotlin code for sending emails in Android.

Part B

II. Answer any FOUR of the following : **4×7= 28**

5. Explain Bound Service in Android in detail.
6. Explain MainActivity.kt file in detail.
7. What is the purpose of a Fragment? How does it differ from an Activity? Explain the scenarios where a Fragment would be used in Android?
8. How does the use of cache files contribute to improving Android application performance?
9. Explain in detail how to interface an Android application with external services using HTTP and REST APIs.

Part C

III. Answer any THREE of the following : **3×10= 30**

10. Explain the key features of iOS ecosystem in detail.
11. Explain the role of the Dalvik Executable (DEX) file format in Android application execution.
12. What are Intent Filters and explain in detail their working and why are they important in Android?
13. Explain the concept of threads, the AsyncTask class, Handler and Runnable for managing multithreaded operations in Android applications

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22MCADE214 Reg No : .....

CHOICE BASED CREDIT SYSTEM

MCA SECOND SEMESTER DEGREE EXAMINATION NOVEMBER 2024

MASTER OF COMPUTER APPLICATIONS

Business Intelligence

Duration:3 Hours **Max Marks:70**

Part A

I. Answer any THREE of the following : **3×4= 12**

1. Analyze the role of Business Intelligence in CRM.
2. Throw light on the various Python based tools used in Data Science.
3. Throw light on the importance of Data Visualization in Business Intelligence.
4. Throw light on the limitations of Key Performance Indicators.

Part B

II. Answer any FOUR of the following : **4×7= 28**

5. Compare and contrast Decision Tables and Decision Trees.
6. Explain the steps involved in planning a Business Intelligence Project.
7. "Segmentation is a process of organizing data". Justify the statement.
8. Explain the best practices for data visualization in Business Intelligence reporting.
9. Explain the different types of Text analysis techniques used in Business Intelligence.

Part C

III. Answer any THREE of the following : **3×10= 30**

10. Throw light on how you design an Enterprise Dashboards.
11. Illustrate the various types of Business Intelligence applications used in different domains.
12. Explain the various data analysis functions available in MS-Excel.
13. Summarize about Tableau as a tool in Business Intelligence.

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