Priyadarshini College of Engineering, Nagpur

Sessional Examination (2023-24) Odd Semester

B.Tech. Seventh Semester (AI&DS) (C.B.C.S)
Open Elective III: Python Programming

P. Pages: 2 Duration : Three Hours

PCE/KW/23/BEAI&DS-704T

Max. Marks: 70

| - | Notes | | | | _ |
|----|-------|---|-----|----|-------|
| 1. | | questions carry marks as indicated. | | | |
| 2. | | ve Question 1 or Question 2. | | | |
| 3. | | ve Question 3 or Question 4. | | | |
| 4. | | ve Question 5 or Question 6. | | | |
| 5. | | ve Question 7 or Question 8. | | | |
| 6. | | ve Question 9 or Question 10. | | | |
| Q. | No. | Question | CO | BT | Marks |
| Q1 | a) | What are the different loop control statements available in Python? Explain with suitable examples. | CO1 | 2 | 8 |
| | b) | Diffrentiate between Method Overloading and Method Overridding. OR | CO1 | 2 | 6 |
| Q2 | a) | Write Python code to determine whether the given string is a Palindrome or not. | CO1 | 1 | 8 |
| | | Explain the diffrence between function and module | CO1 | 2 | 6 |
| Q3 | a) | i. Inheritance iii. Polymorphism iv. Abstraction | CO2 | 1 | 6 |
| | b) | Write a Python program to create a person class. Include attributes like name, country and date of birth. Implement a method to determine the person's age. | CO2 | 3 | 8 |
| | | OR | | | |
| Q4 | | What is the lambda function? Write the characteristics of a lambda function. Explain the same with an example. | CO2 | 2 | 4 |
| | | What do you mean by a constructor? List and describe various constructors used for converting to different data types. | CO2 | 1 | 4 |
| | c) | Write a Python program to create a class representing a Circle. Include methods to calculate its area and perimeter. | CO2 | 3 | 6 |
| Q5 | a) | Explain the following functions of Numpy library with the help of examples | | | |
| | | i. max() ii. min() iii. sum() iv. mean() v. std() | CO3 | 2 | 5 |
| | | | | | |

| b) | Create the ro | ollowing Nur | nPy arrays: | | | | | |
|----------|---|--|--|---|---|--|--|--|
| | i. 1-D array called zeros having 10 elements and all the elements are | | | | | CO3 | 3 | 9 |
| | set to zero. | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| 2) | | | | | | | | 2 |
| u, | Write difference between Pandas series and Numry arrays | | | | | | 1 | 3 |
| b) | Explain any 5 attributes of data frames in pandas | | | | | | 2 | 5 |
| c) | Create the following Data Frame Sales containing year wise sales figure | | | | | | | |
| -, | | | | | | | | |
| | 4 | | | cars as corain | i lubels, and sales | | | |
| | personname | | | 2016 | 2017 | TO BE | | |
| | Ankit | | | | | L'AGE | | |
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| a) | | | cess of flask s | etup and discu | iss the advantages | CO4 | 1 | 8 |
| | of Flask Fra | mework | | etup and discu | iss the advantages | CO4 | 1 | 8 |
| | of Flask Fra Explain the | mework following co | mmands | | iss the advantages | CO4 | 1 | 8 |
| | of Flask Fra Explain the i. app.run(| mework following co host, port, c | | | iss the advantages | 304 | | |
| | of Flask Fra Explain the i. app.run(| mework following co | mmands | | iss the advantages | 304 | | |
| | of Flask Fra Explain the i. app.run(ii. @app.ro | mework following co host, port, c oute('/home') | mmands lebug, options |) | iss the advantages | 304 | | |
| b) | of Flask Fra Explain the i. app.run ii. @app.ro Explain the i. GET | mework following co host, port, c oute('/home') following Fla | mmands lebug, options OR ask HTTP met ii. HEAD |) hods | POST | 304 | | |
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| | b) c) | set to zero ii. 1-D array iii. 2-D arra elements a a) Write differe b) Explain any c) Create the for for five sales personnames Ankit Nazneen Sumit Akshada Shruti | set to zero. ii. 1-D array called vowels iii. 2-D array called one elements are set to 1 a) Write difference between b) Explain any 5 attributes c) Create the following Data for five sales persons in I personnames as row labe 2014 Ankit 100.5 Nazneen 150.6 Sumit 200.9 Akshada 3000 Shruti 5000 | set to zero. ii. 1-D array called vowels having the eliii. 2-D array called ones having 2 rowelements are set to 1 and dtype as OR a) Write difference between Pandas series b) Explain any 5 attributes of data frame Sales of for five sales persons in INR. Use the yapersonnames as row labels. 2014 2015 Ankit 100.5 1200 Nazneen 150.6 1800 Sumit 200.9 2200 Akshada 3000 5000 Shruti 5000 6000 | set to zero. ii. 1-D array called vowels having the elements 'a', 'e' iii. 2-D array called ones having 2 rows and 5 collelements are set to 1 and dtype as int. OR a) Write difference between Pandas series and NumPy b) Explain any 5 attributes of data frames in pandas c) Create the following Data Frame Sales containing year for five sales persons in INR. Use the years as column personnames as row labels. \[\begin{array} 2014 & 2015 & 2016 \\ Ankit & 100.5 & 1200 & 2000 \\ Nazneen & 150.6 & 1800 & 5000 \\ Sumit & 200.9 & 2200 & 4000 \\ Akshada & 3000 & 5000 & 7000 \\ Shruti & 5000 & 6000 & 8000 \end{array} | set to zero. ii. 1-D array called vowels having the elements 'a', 'e', 'i', 'o' and 'u'. iii. 2-D array called ones having 2 rows and 5 columns and all the elements are set to 1 and dtype as int. OR a) Write difference between Pandas series and NumPy arrays b) Explain any 5 attributes of data frames in pandas c) Create the following Data Frame Sales containing year wise sales figures for five sales persons in INR. Use the years as column labels, and sales personnames as row labels. 2014 2015 2016 2017 Ankit 100.5 1200 2000 4000 Nazneen 150.6 1800 5000 5500 Sumit 200.9 2200 4000 6500 Akshada 3000 5000 7000 8000 Shruti 5000 6000 8000 10000 | set to zero. ii. 1-D array called vowels having the elements 'a', 'e', 'i', 'o' and 'u'. iii. 2-D array called ones having 2 rows and 5 columns and all the elements are set to 1 and dtype as int. OR a) Write difference between Pandas series and NumPy arrays CO3 b) Explain any 5 attributes of data frames in pandas CO3 c) Create the following Data Frame Sales containing year wise sales figures for five sales persons in INR. Use the years as column labels, and sales personnames as row labels. 2014 2015 2016 2017 Ankit 100.5 1200 2000 4000 Nazneen 150.6 1800 5000 5500 Sumit 200.9 2200 4000 6500 Akshada 3000 5000 7000 8000 Shruti 5000 6000 8000 10000 | set to zero. ii. 1-D array called vowels having the elements 'a', 'e', 'i', 'o' and 'u'. iii. 2-D array called ones having 2 rows and 5 columns and all the elements are set to 1 and dtype as int. OR a) Write difference between Pandas series and NumPy arrays CO3 1 b) Explain any 5 attributes of data frames in pandas CO3 2 c) Create the following Data Frame Sales containing year wise sales figures for five sales persons in INR. Use the years as column labels, and sales personnames as row labels. \[\begin{array} 2014 & 2015 & 2016 & 2017 & 2016 & 2017 & 2000 & 4000 & 2000 & 4000 & 2000 & 4000 & 2000 & 4000 & 2000 & 4000 & 20 |