

Name:
Enrolment No:



UPES
End Semester Examination, December 2023

Course: Software System Foundation
Program: B.Tech (BE)
Course Code: CSEG2042

Semester : 3rd
Duration : 3 Hours
Max. Marks: 100

Instructions: There is one choice each in Section B,C & D.

| S. No. | Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks) | Marks | COs |
|--------|---|-------|-----------------|
| Q 1 | Convert $(242)_{10}$ into hexadecimal. | 1.5 | CO2 |
| Q 2 | Find the output of the following Python Program: <pre>if(10 == 10) and (10+20>30): print("Done") else: print("Do It")</pre> | 1.5 | CO3/CO4 /CO5 |
| Q 3 | Find the output of the following Python Program: <pre>i=1 while i<=6: print(i, end = " ") i=i+1 print("Done")</pre> | 1.5 | CO3/CO4 /CO5 |
| Q 4 | Find the output of the following Python Program: <pre>for i in range(10): if not i%2==0: print(i+1)</pre> | 1.5 | CO3/CO4 /CO5 |
| Q 5 | Find the output of the following Python Program: <pre>for i in range(5): print("hello!", end = " ")</pre> | 1.5 | CO3/CO4 /CO5 |

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|--|--|-----|-----------------|
| Q 6 | <p>Find the output of the following Python Program:</p> <pre> i=0 while i<10: i = i + 1 if(i == 5): print("\n Continue") continue if(i==7): print("\n Breaking") break print(i, end = " ") print("\n Done") </pre> | 1.5 | CO3/CO4 /CO5 |
| Q 7 | Differentiate between hardware and software of a computer system. | 1.5 | CO1 |
| Q 8 | $(246.57)_8 + (357.1)_8 = ?_8$ | 1.5 | CO2 |
| Q 9 | $(167)_8 + (765)_8 = ?_8$ | 1.5 | CO2 |
| Q 10 | $(11010)_2 * (1010)_2 = ?_2$ | 1.5 | CO2 |
| Q 11 | $(162)_8 + (537)_8 = ?_8$ | 1.5 | CO2 |
| Q 12 | Convert 0.52 into an octal number. | 1.5 | CO2 |
| Q 13 | Represent binary number 1.1 in decimal. | 1.5 | CO2 |
| Q 14 | Represent 5C6 in decimal. | 1.5 | CO2 |
| Q 15 | Subtract 1101_2 and 1010_2 | 1.5 | CO2 |
| Q 16 | Convert the number 5062_{10} to the binary system. | 1.5 | CO2 |
| Q 17 | Discuss about the central processing system of the computer. | 1.5 | CO1 |
| Q 18 | Differentiate between primary and secondary memory of a computer system by taking suitable examples of each. | 1.5 | CO1 |
| Q 19 | Discuss various versions of ROM. | 1.5 | CO1 |
| Q 20 | Draw and discuss Memory hierarchy of a computer system. | 1.5 | CO1 |
| <p>Section B (4Qx5M=20 Marks)</p> <p>Attempt any four questions from the Section B.</p> | | | |
| Q 21 | Discuss Slice Operation in Python. Support your answer by taking a suitable programming example. | 5 | CO3/CO4 /CO5 |
| Q 22 | Discuss by taking a suitable example chr() function in Python. | 5 | CO3/CO4 /CO5 |

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|--|---|--------------------|-----------------|----------|------|-----------------------|-----|-----------------|----|----------|-----------------|----|-----------------|
| Q 23 | Discuss at least five Built-in String Methods and Functions of Python. Support your answer by taking a suitable programming example. | 5 | CO3/CO4 /CO5 | | | | | | | | | | |
| Q 24 | Discuss by taking a suitable example ord() function in Python. | 5 | CO3/CO4 /CO5 | | | | | | | | | | |
| Q 25 | Take your own example to explain Concatenating, Appending and Multiplying Strings. | 5 | CO3/CO4 /CO5 | | | | | | | | | | |
| Section C (2Qx15M=30 Marks) Attempt any two questions from the Section C. | | | | | | | | | | | | | |
| Q 26 | Discuss various comparison operators of Python. | 15 | CO3/CO4 /CO5 | | | | | | | | | | |
| Q 27 | Differentiate between a Local and Global function by taking a suitable programming example of Python. | 15 | CO3/CO4 /CO5 | | | | | | | | | | |
| Q 28 | Write the syntax of a function call in Python. Support your answer by taking a suitable programming example. | 15 | CO3/CO4 /CO5 | | | | | | | | | | |
| Section D (2Qx10M=20 Marks) Attempt any two questions from the Section D. | | | | | | | | | | | | | |
| Q 29 | Discuss Object and Class in OOPs. | 10 | CO3/CO4 /CO5 | | | | | | | | | | |
| Q 30 | <p>Q2. Write a program to accept the cost price of a bike and display the road tax to be paid according to the following criteria :</p> <table style="margin-left: 40px;"> <tr> <td>Cost price (in Rs)</td> <td>Tax</td> </tr> <tr> <td>> 100000</td> <td>15 %</td> </tr> <tr> <td>> 50000 and <= 100000</td> <td>10%</td> </tr> <tr> <td><= 50000</td> <td>5%</td> </tr> </table> | Cost price (in Rs) | Tax | > 100000 | 15 % | > 50000 and <= 100000 | 10% | <= 50000 | 5% | 10 | CO3/CO4 /CO5 | | |
| Cost price (in Rs) | Tax | | | | | | | | | | | | |
| > 100000 | 15 % | | | | | | | | | | | | |
| > 50000 and <= 100000 | 10% | | | | | | | | | | | | |
| <= 50000 | 5% | | | | | | | | | | | | |
| Q 31 | <p>Q1. Write a program to accept percentage from the user and display the grade according to the following criteria:</p> <table style="margin-left: 40px;"> <tr> <td>Marks</td> <td>Grade</td> </tr> <tr> <td>> 90</td> <td>A</td> </tr> <tr> <td>> 80 and <= 90</td> <td>B</td> </tr> <tr> <td>>= 60 and <= 80</td> <td>C</td> </tr> <tr> <td>below 60</td> <td>D</td> </tr> </table> | Marks | Grade | > 90 | A | > 80 and <= 90 | B | >= 60 and <= 80 | C | below 60 | D | 10 | CO3/CO4 /CO5 |
| Marks | Grade | | | | | | | | | | | | |
| > 90 | A | | | | | | | | | | | | |
| > 80 and <= 90 | B | | | | | | | | | | | | |
| >= 60 and <= 80 | C | | | | | | | | | | | | |
| below 60 | D | | | | | | | | | | | | |