



**Fifth Semester B.E. Degree Examination, Dec.2024/Jan.2025**  
**Application Development using Python**

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

**Module-1**

- 1 a. What do all expressions do? Explain the math operators in python from highest to lowest precedence with an example for each. Write steps involved in python for evaluation of the expression,  $(s-1) * \left( \frac{(7+1)}{(3-1)} \right)$  and reduce it to a single value. (06 Marks)
- b. Explain python supported flow control statements with an example program. (08 Marks)
- c. Write a python program to extract last digit of a given number. (06 Marks)

OR

- 2 a. Explain parameter passing of user-defined function in python with an example program. (09 Marks)
- b. How many global scopes are there in a python program? How many local scopes? What happens to variables in a local scope and global scope when the function call returns, illustrate with a program consisting of minimum one local and global variable. (05 Marks)
- c. What is exception handling? How exceptions are handled in python? Write a Python program with exception handling code to solve divide-by-zero error situation. (06 Marks)

**Module-2**

- 3 a. List any four python string method with a suitable example. (10 Marks)
- b. Compare list and string. (06 Marks)
- c. Write a python program to determinate tuple by sorting given words from longest to shortest using loops and also remove all duplicate letters in a given word. (04 Marks)

OR

- 4 a. Describe converting types with list and tuple with an example. (06 Marks)
- b. Mention merits of list over dictionary. Write a python program to accept USN and marks obtained. Find maximum, minimum and students USN who have scored in the range 100-85, 85-75, 75-60 and below 60. (08 Marks)
- c. Explain the usage if 'in' and 'not in' operators with string in python through an example. (06 Marks)

**Module-3**

- 5 a. Describe python instruction for the following in reference to logging.  
 debug(), (i) Logging levels (ii) Send login message to file named exam.net.  
 (iii) No debug with print (09 Marks)
- b. Explain fopen, fclose, fread and fwrite functions of python with an example program. (05 Marks)
- c. Write a python program to search for word start with 'The' followed by two words and ends with 'es' in a given string. (06 Marks)

OR

- 6 a. Describe OS.path modules. Also discuss the following methods of OS module :  
 (i) chdir()  
 (ii) unlink  
 (iii) walk  
 (iv) listdir() (10 Marks)
- b. Differentiate between shutil.copy() and shutil.copytree() with a python code. (06 Marks)
- c. Write a python program to search for a word that starts with 'A' followed by three or four letters followed by 'u'. (04 Marks)

**Module-4**

- 7 a. Demonstrate polymorphism with function to find histogram to count the number of times a letter appears in word and sentence. Create a class student with following member attributes : roll no, name, age and total marks. Create suitable methods for reading and printing member variables. Write a python definition in method to overload '=' operator to print the details of student having same marks. (10 Marks)
- b. Define pure function with an example. Write a program to express instance as return values to define a class CIRCLE with members radius, origin-X, origin-Y and member functions : to find area of circle, perimeter of circle and to relocate circle by 10 points vertically and 5 points horizontally. (10 Marks)

OR

- 8 a. Define method and positional argument with reference to class. Create a class : Employee to store personnel details. Such as id, name, gender, city and salary and define methods to initialize and display employee details. (10 Marks)
- b. Describe on programmer-defined type. Write an object oriented python program to create two objects of Time : Current\_time and Bread\_time which contains bread baking time. Include addTime method to display the total time taken by the bread maker to prepare bread. (10 Marks)

**Module-5**

- 9 a. Explain requirement of openpyxl. In a worksheet object, write python code to retrieve workbook active sheet and to set value in the cell C5 to "5<sup>th</sup> semester", also to update spreadsheet of marks using updated marksheet.xsl file. (10 Marks)
- b. A string value of the PDF filename is not passed to the PyPDF2.pdfFileReader() function. What is required to pass to the function instead? Describe python support for a word document to read and write from word document. (10 Marks)

OR

- 10 a. List a few features that openpyXL 2.1.4. Use functions and methods of OpenpyXL to create a bar chart for data stored in spread sheet to develop a python program. (10 Marks)
- b. How to view the HTML of a specific element on a web page? Mention steps to download all XKCD comics with a suitable python instruction. (10 Marks)

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