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BCACACN 401

**Fourth Semester B.C.A. Degree Examination, July/August 2023
(NEP 2020)
(2022-23 Batch Onwards)
PYTHON PROGRAMMING
(DSCC)**

Time : 2 Hours

Max. Marks : 60

Note : Answer **any six** questions from Part – A and **any one full** question from **each** Unit in Part – B.

PART – A

(6×2=12)

1. a) How to determine the data type of a variable ? Give the syntax and example.
- b) What is indentation ? Why it is required ?
- c) What is the use of negative indexing ? Give example.
- d) What is dictionary ? Give example.
- e) What is the use of seek() and tell() methods ?
- f) What is root window ? How it is created in Python ?
- g) What is Pandas series ? Give example.
- h) What is matplotlib and pyplot ?

PART – B

UNIT – I

2. a) Explain any four flavors of Python.
- b) How to read different types of input from the keyboard ? Give examples.
- c) Explain use of string.format and f-string with print() function. (4+4+4)
3. a) Explain various data types in Python.
- b) Explain exception handling in Python with try... except... finally block.
- c) With example explain keyword arguments and default arguments to the function. (4+4+4)

P.T.O.



UNIT – II

4. a) Explain split and join methods of string with example.
b) Write a note on indexing and slicing lists.
c) With example explain how to Access and Modify *key:value* Pairs in Dictionaries. (4+4+4)
5. a) Explain any four list methods with syntax.
b) Write a Python code to implement stack operations using lists.
c) Explain concatenation and repetition operations on string with example. (4+4+4)

UNIT – III

6. a) With example explain how 'with' statement is used to open and close files.
b) What is inheritance ? How to implement inheritance in Python ? Give an example.
c) How to create a button widget and bind it to the event handler ? Explain with example. (4+4+4)
7. a) With example explain any two methods to read data from the file.
b) Explain multipath inheritance with example.
c) Explain the process of creating a Listbox widget with a suitable example. Also, explain different values associated with selectmode option. (4+4+4)

UNIT – IV

8. a) Explain four SQLite module methods required to use SQLite database.
b) Explain any four NumPy array attributes with usage syntax.
c) Explain any four string processing methods supported by Pandas Library with example. (4+4+4)
9. a) Write a Python program to demonstrate any four SQLite Database operations.
b) Explain any four NumPy array creation functions with example.
c) Explain with example any two methods of creating Data Frame. (4+4+4)
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BCACACN 403

**Fourth Semester B.C.A. Degree Examination, July/August 2023
(NEP – 2020)**

(2022 – 23 Batch Onwards)

**OPERATING SYSTEM CONCEPTS
(DSCC)**

Time : 2 Hours

Max. Marks : 60

Note : Answer any six questions from Part – A and any one full question from each Unit in Part – B.

PART – A

1. a) Define an Operating System. (6×2=12)
- b) Give any four File Types.
- c) What are physical and logical addresses ?
- d) Define thrashing and virtual memory.
- e) What is PCB ? List its components.
- f) Define preemptive scheduling and non-preemptive scheduling.
- g) What is semaphore ?
- h) What is a wait for graph ? Give an example.

PART – B

Unit – I

2. a) Explain the different services of an Operating System.
- b) Explain any two Directory Structures. (6+6)
3. a) Write a note on File System Management and Memory Management.
- b) Explain types of System call. (6+6)

P.T.O.



Unit – II

4. a) Explain segmentation with a neat diagram.
 b) Consider the reference string 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1. For memory with 3 frames, give the steps in the optimal and LRU page replacement algorithms. (6+6)
5. a) Explain contiguous memory allocation.
 b) Explain paging memory management with an example. (6+6)

Unit – III

6. a) Consider the following set of processes that arrive at time 0 with the length of the CPU-burst time given in milliseconds.

Process	CPU Burst Time
P1	6
P2	8
P3	7
P4	3

Find the average turnaround and waiting time. And also draw the Gantt chart using SJF.

- b) Write a note on Inter Process Communication (IPC). (6+6)
7. a) Explain Round Robin Scheduling algorithm with an example.
 b) What is Process ? Explain Process State transition diagram. (6+6)

Unit – IV

8. a) Explain how to recover from Deadlock.
 b) What is Critical Section ? What are the requirements for a solution to Critical Section problem ? (6+6)
9. a) What is deadlock ? Explain the necessary conditions to deadlock to occur.
 b) What is Readers-Writers problem ? Explain. (6+6)
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BCACACN 402

**Fourth Semester B.C.A. Degree Examination, July/August 2023
(NEP 2020)**

(2022-2023 Batch Onwards)

**COMPUTER MULTIMEDIA AND ANIMATION
(DSCC)**

Time : 2 Hours

Max. Marks : 60

Note : Answer **any six** questions from Part – A and **one full** question from **each** Unit of Part – B.

PART – A

(6×2=12)

1. a) What is the use of cellpadding and cellspacing attributes in <table> element ?
- b) What are the uses of === and !== operators of JavaScript ?
- c) Expand CSS. What is the use of CSS ?
- d) What are the values can be used for transition timing function ?
- e) What are the advantages of SVG <tspan> element ?
- f) What is SVG Viewbox attribute ? List the SVG elements with which Viewbox attribute can be used.
- g) Write the javascript code to create canvas drawing context.
- h) List the parameters of the canvas fillRect() method with their purpose.

PART – B

Unit – I

2. a) What is the use of tag ? Explain with attributes.
- b) Explain any 4 <input> tags with their element specific attributes.
- c) Explain addEventListener () method with example.

(4+4+4)

P.T.O.



3. a) What is the use of <a> tag ? Explain the use of href, target and name attributes.
- b) Briefly describe confirm() and alert() methods.
- c) Write a note on JavaScript with its features. (4+4+4)

Unit – II

4. a) Explain different ways of using style sheets in HTML5.
- b) Explain all the animation related properties.
- c) Explain clear property of CSS3 with all its options. (4+4+4)
5. a) Explain overflow property of CSS3 with all of its options.
- b) Explain all the possible values for animation-fill-mode property.
- c) Explain the pseudo-classes used to style link. (4+4+4)

Unit – III

6. a) Explain SVG drop shadow effect.
- b) Explain all the variations of SVG rotate() function with its parameters.
- c) Mention the rules of SVG color specification. (4+4+4)
7. a) Explain all the variations of SVG translate() function with its parameters.
- b) List and explain any four SVG color codes.
- c) Explain SVG Gaussian blur effect. (4+4+4)

Unit – IV

8. a) Explain setInterval(), setTimeout(), requestAnimationFrame() methods with their parameters.
- b) Explain quadraticCurveTo() and bezierCurveTo() methods of canvas with proper example. (6+6)
9. a) Explain how to create Radial gradient in canvas with example.
- b) List and explain all the Canvas shadow properties.
- c) Explain arc() and arcTo() methods of canvas. (4+4+4)
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