21COAC401 Reg No : .....

CHOICE BASED CREDIT SYSTEM SEMESTER SCHEME

B.C.A FOURTH SEMESTER DEGREE EXAMINATION MAY 2025

COMPUTER APPLICATIONS

Python Programming

Duration:2 Hours Max Marks:60

PART A

Answer any FIVE questions: (5×2= 10)

1) What is Python Shell?
2) Define lambda function in Python.
3) What is the purpose of pop() method in lists? Give an example.
4) How do you open a file in python? Give an example.
5) How do you represent tuple datatype in Python? Give an example.
6) What is the purpose of the len() function in the context of strings?

PART B

Answer any FIVE questions : (5×6= 30)

7) Explain Python's membership and identity operators with relevant examples.
8) Explain the use of *args and **kwargs in Python functions with examples.
9) Explain with syntax and example a) len() b) index() c) min() methods of tuples.
10) How do you retrieve all the rows from a table in Python? Explain with a help of an example.
11) What are magic methods? Explain with an example of __add__() method
12) Differentiate between TypeError and ValueError with examples.

PART C

Answer any TWO questions : (2×10= 20)

13) a) Explain constructor method with a help of an example.
b) Explain operator overloading with a help of an example.
14) Explain with syntax and example a) items() b) update() c) clear() d) pop() e) copy() methods of a dictionary.
15) Explain Python loops (for, while), their syntax, and how they function. Include examples for each.

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CHOICE BASED CREDIT SYSTEM SEMESTER SCHEME

B.C.A FOURTH SEMESTER DEGREE EXAMINATION MAY 2025

COMPUTER APPLICATIONS

Computer Multimedia and Animation

Duration:2 Hours Max Marks:60

PART A

Answer any FIVE questions: **(5×2= 10)**

1) What is the purpose of i) summary ii) figure tags?
2) How do you add multimedia elements to HTML page?
3) What is the purpose of tfoot and tbody tags?
4) How do you include external JavaScript file? Give an example.
5) How do you give horizontal and vertical shadow in HTML Canvas? Give an example.
6) What is the purpose of globalCompositeOperation property in HTML Canvas?

PART B

Answer any FIVE questions : **(5×6= 30)**

7) Explain select, textarea and optgroup tags with an example each.
8) Explain any six CSS text properties with examples.
9) Explain with examples:
   a) animation-delay b) animation-fill-mode c) transition-duration properties.
10) Explain bezier curves with methods and an example.
11) How do you insert an Image in HTML Canvas? Explain with methods and examples.
12) Write a note on HTML Canvas transformation.

PART C

Answer any TWO questions : **(2×10= 20)**

13) a) Explain CSS id selector and CSS class selector with an example each.
    b) Explain any two CSS background properties with examples.
14) Explain Arithmetic and Comparison operators in JavaScript with an example each.
15) Explain the following methods in HTML Canvas with examples
    a) stroke() b) fillRect() c) moveTo() d) beginPath() e) fill()

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21COAC403 Reg No : .....

CHOICE BASED CREDIT SYSTEM SEMESTER SCHEME

BCA FOURTH SEMESTER DEGREE EXAMINATION MAY 2025

COMPUTER APPLICATIONS

Operating System Concepts

Duration:2 Hours **Max Marks:60**

PART A

Answer any FIVE questions: **(5×2= 10)**

1) Write any four attributes of a file.
2) What is PCB? List any two fields of PCB.
3) Write any two methods to detect deadlock in the system.
4) What is page fault?
5) Differentiate preemptive and nonpreemptive scheduling.
6) Write the requirements needed for the Peterson's solution and the structure of process Pi in Peterson's solution.

PART B

Answer any FIVE questions : **(5×6= 30)**

7) Explain dynamic relocation with a neat diagram.
8) Write a note on Single threaded and multithreaded process.
9) Define the readers-writers problem and explain the structure of reader process.
10) Explain mutual exclusion and circular wait in deadlock characterization.
11) Explain the responsibilities of an operating system with respect to
    a) Process Management b) File Management
12) Explain fragmentation.

PART C

Answer any TWO questions : **(2×10= 20)**

13) Write a note on a) Real time systems b) Multiprogrammed systems

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14) Draw Gantt chart and calculate the Average Waiting Time for the following 4 processes using:

a) First Come First Serve scheduling algorithm.

b) SJF scheduling algorithm.

c) Round Robin scheduling algorithm (Time quantum = 3ms) Process P1 P2 P3 P4 Burst Time 5 3 6 3

15) a) Explain indexed allocation with a neat diagram.

b) Write a note on free space management.

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21COAC403 Reg No : .....

CHOICE BASED CREDIT SYSTEM SEMESTER SCHEME

BCA FOURTH SEMESTER DEGREE EXAMINATION MAY 2025

COMPUTER APPLICATIONS

Operating System Concepts

Duration:2 Hours **Max Marks:60**

PART A

Answer any FIVE questions: **(5×2= 10)**

1) What information does a system-wide table contain?
2) Differentiate long term scheduler and short term scheduler.
3) What are semaphores?
4) Write a note on contiguous memory allocation.
5) Define dispatcher. Mention any two functions of a dispatcher
6) Write the sequence of a process utilizing a resource.

PART B

Answer any FIVE questions : **(5×6= 30)**

7) Write a note on file structure.
8) Explain the types of threads.
9) Explain process termination in deadlock recovery.
10) What is race condition? Explain with an example.
11) Write a note on a) Virtual memory b) Demand paging
12) Explain any three types of Operating system with a neat diagram.

PART C

Answer any TWO questions : **(2×10= 20)**

13) What are the responsibilities of an operating system with respect to
a) Process Management b) Main-Memory Management

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14) Draw Gantt chart and calculate the Average Waiting Time for the following four processes using:

a) First Come First Serve scheduling algorithm.

b) Priority scheduling algorithm.

c) Round Robin scheduling algorithm (Time quantum = 3ms) Process P1 P2 P3 P4 Burst Time 5 3 6 4 Priority 3 1 2 1

15) a) Explain linked allocation with a neat diagram.

b) Write a note on free space management.

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