23DAU314/ 19DAU14

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2023
(Third Semester)

Branch – **COMPUTER SCIENCE WITH DATA ANALYTICS**

OPERATING SYSTEM

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1 Which is not provided by the operating system is____
(i) networking (ii) user interface
(iii) error detection (iv) program execution

2 This is dynamically allocated memory to a process during its run time.
(i) Stack (ii) Queue
(iii) Heap (iv) Data

3 Which set of necessary conditions causes a deadlock in an operating system?
(i) Blocking send, racing condition, hold and wait and RAM overflow
(ii) Blocking send, racing condition, cache incoherency and RAM overflow
(iii) Mutual exclusion, no-pre-emption, hold and wait and circular wait
(iv) Mutual exclusion, race condition, cache incoherency and RAM overflow

4 CPU fetches the instruction from memory according to the value of _____
(i) program counter (ii) status register
(iii) instruction register (iv) program status word

5 Which function reduces a file's size so that it uses less storage space?
(i) File Synthesizing (ii) File Defragmenting
(iii) File Scanning (iv) File Compression

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a Show in brief Different Approaches or Structures of Operating System with example.

OR

b Analyze in brief about System Calls in Operating System with neat diagram.

7 a Outline in brief about various Approaches to Interprocess Communication in Operating System with example.

OR

b Explain Process Scheduling Queues with neat diagram.

Cont...

8 a Describe Deadlock Avoidance with example.

OR

b Explain Deadlock Characterization with neat diagram.

9 a Compare the difference between contiguous and non-contiguous storage allocation in Operating System.

OR

b What is Background in Main Memory? Explain with example.

10 a Outline in detail about various Fundamental Components of a File with example.

OR

b Describe the Operations of File with example.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a Classify some common services provided by an Operating System with example.

OR

b Differentiate Linkers and Loaders in Operating System with example.

12 a Distinguish Process and Program in Operating System with example.

OR

b Discuss in detail about First-Come, First-Served(FCFS) Scheduling and Multiple-Level Queues Scheduling with example.

13 a Elucidate Deadlock Prevention with neat diagram.

OR

b Enumerate Deadlock Detection and Recovery with neat diagram.

14 a Elucidate Virtual Memory in Operating System with neat diagram.

OR

b How does Demand Page Work? Infer in brief with example.

15 a Summarize File System Structure in Operating System with example.

OR

b Point out various File Allocation Methods in Operating System with example.

Z-Z-Z END