



BRAINWARE UNIVERSITY

Term End Examination 2023
Programme – MCA-2020/MCA-2021
Course Name – Operating Systems
Course Code - MCA202
(Semester II)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :
- (i) Choose the correct answer, Division by zero, accessing a protected or non-existent memory address, or attempting to execute a privileged instruction from user mode are all categorized as _____
- a) errors
b) exceptions
c) interrupt handlers
d) all of the mentioned
- (ii) Choose the correct answer, For large data transfers, _____ is used.
- a) Dma
b) programmed I/O
c) controller register
d) none of the mentioned
- (iii) Explain The _____ keeps state information about the use of I/O components.
- a) CPU
b) OS
c) Kernel
d) shell
- (iv) Identify which system call creates the new process in UNIX?
- a) Fork
b) Create
c) New
d) None of these
- (v) Illustrate the Run time mapping from virtual to physical address is done by _____
- a) Memory management unit
b) CPU
c) PCI
d) None of the mentioned
- (vi) Explain memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called?
- a) fragmentation
b) paging
c) mapping
d) none of the mentioned
- (vii) Observe which one of the following error will be handled by the operating system?
- a) Power Failure
b) Lack of paper in printer
c) Connection failure in the network
d) All of these

- (viii) Tell which interface is provided to access the services of operating system
- a) System Calls
b) API
c) Library
d) Assembly instructions
- (ix) Identify the single user single tasking os
- a) LINUX
b) WINDOWS
c) DOS
d) None of these
- (x) Explain the Physical memory is broken into fixed-sized blocks called _____
- a) frames
b) frames
c) backing store
d) none of the mentioned
- (xi) Select correct option every address generated by the CPU is divided into two parts. They are _____
- a) frame bit & page number
b) page number & page offset
c) page offset & frame bit
d) frame offset & page offset
- (xii) Select the answer The _____ is used as an index into the page table.
- a) frame bit
b) page number
c) page offset
d) frame offset
- (xiii) Interpret the representation of RAG tool
- a) Deadlock
b) Resource Allocation
c) Race Condition
d) None of these
- (xiv) Identify FCFS is _____ Scheduling algorithm.
- a) Pre-emptive
b) Non-preemptive
c) Pre-emptive and Non-preemptive
d) None of these
- (xv) Indicate which scheduler is invoked when there is need to perform job scheduling
- a) Long term
b) Medium term
c) Short term
d) None of these

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Describe Operating System. (3)
3. Explain Thread (3)
4. Compare Real memory and Virtual memory (3)
5. Justify the Basic necessary condition for Deadlock Occur (3)
6. Explain Multiprogram Scheduling. (3)

OR

Explain Process (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Explain Page hit ratio and page miss ratio (5)
8. Explain main difference between scheduler and dispatcher (5)
9. Compare between internal and external fragmentation (5)
10. Explain RR Scheduling (5)
11. Explain burst time (5)
12. Evaluate how many page fault occurred with the reference string 7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1 using FIFO page replacement algorithm. (5)

OR

Justify belady anomaly implementation in FiFO is better than any other page replacement algorithm (5)