**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, APRIL 2023**

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|  | **1BC2105** | Roll No. | Total Printed Pages: 1 |
| **1BC2105** |  |
| BCA I Year II-Semester (Main/Back) End Semester Examination, April 2023  **(All Spl.)** | |
| **BCACCA2104 : Operating System** | | | |

# Time: **3** Hours. Total Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of following supporting material is permitted during examination for this subject.

# **1.--------------------------Nil--------------------** **2.------------------Nil-----------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** |
| **Q.1** | **(a)** | What is operating system? Explain about components of operating system with diagram? | **(6)** |
|  |  |  |  |
|  | **(b)** | Explain about evolution of operating system? | **(6)** |
|  |  | **OR** |  |
| **Q.2** | **(a)** | Write short notes (i) Multiprogramming,(ii) Multitasking. | **(6)** |
|  |  |  |  |
|  | **(b)** | Write short notes (i) Real Time operating system,(ii) Open Source operating system. | **(6)** |
|  |  | **UNIT-II (CO2)** |  |
| **Q.3** | **(a)** | Explain about Process control block (PCB) with diagram? | **(6)** |
|  |  |  |  |
|  | **(b)** | Explain about Process states with diagram? | **(6)** |
|  |  | **OR** |  |
| **Q.4** | **(a)** | Write short notes (i) FCFS, (ii) Shortest Job First? | **(6)** |
|  |  |  |  |
|  | **(b)** | What is the difference between process and thread? | **(6)** |
|  |  | **UNIT-III (CO3)** |  |
| **Q.5** | **(a)** | What is Deadlock and explain its four conditions with diagram? | **(6)** |
|  |  |  |  |
|  | **(b)** | Define RAG and its explain about its components? | **(6)** |
|  |  | **OR** |  |
| **Q.6** | **(a)** | In a system consists of 3 processes P1,P2,P3 and 3 resources X,Y,Z Allocation, max, Available given below ?Calculate need matrix?   |  |  |  |  | | --- | --- | --- | --- | |  | **Allocation**  **X Y Z** | **Max**  **X Y Z** | **Available**  **X Y Z** | | **P1** | **0 0 1** | **8 4 3** | **4 2 2** | | **P2** | **3 2 0** | **6 2 0** |  | | **P3** | **2 1 1** | **3 3 3** |  | | **(6)** |
|  |  |  |  |
|  | **(b)** | Find that this system is in safe state or not and find the safe sequence? | **(6)** |
|  |  | **UNIT-IV (CO4)** |  |
| **Q.7** | **(a)** | Given 5 partition of 100KB, 500KB, 200KB, 300KB, 600KB (In order) Use the first fit, best fit, and worst fit algorithm to place? | **(6)** |
|  |  |  |  |
|  | **(b)** | Define best fit, worst fit and first fit with diagram? | **(6)** |
|  |  | **OR** |  |
| **Q.8** | **(a)** | Consider page reference string 1,3,0,3,5,6,7,8,9,10,11 with 3 frames? Find the page faults in First in first out page replacement? | **(6)** |
|  |  |  |  |
|  | **(b)** | Difference between logical address and physical address? | **(6)** |
|  |  | **UNIT V (CO5)** |  |
| **Q.9** | **(a)** | What is file? Explain about its operations? | **(6)** |
|  |  |  |  |
|  | **(b)** | Short notes on Single level directory with diagram? | **(6)** |
|  |  | **OR** |  |
| **Q.10** | **(a)** | What is linked allocation? | **(6)** |
|  |  |  |  |
|  | **(b)** | Short notes on Two level directory with diagram? | **(6)** |