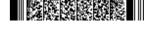
Turn Over



QP CODE: 23501023

Reg No з. Name 5

I.M.C.A DEGREE EXAMINATION, NOVEMBER 2023

Fifth Semester

Integrated MCA

CORE - IMCA5C02 - OPERATING SYSTEMS

2020 Admission Onwards

E5652DC9

Time: 3 Hours

Maximum: 75 Marks

Part A

Answer any ten questions Each question carries 3 marks

- 1. Differentiate between Real-time and Time sharing OS.
- 2. What are the advantages of using Batch Operating System?
- 3. How does the protection mechanism in the operating system work?
- 4. Define Response time. Discuss the importance of response time as a scheduling criteria.
- 5. What is the difference between binary and counting semaphores?
- 6. What is busy waiting?
- 7 How does segmentation enable memory protection and sharing in multi-programming environments?
- 8. What is memory fragmentation, and how can it be categorized into internal and external fragmentation?

Page 1/2

- 9. Differentiate Field, Record, Database in File systems.
- 10. How does access time in disk storage systems impact data retrieval speed and system performance.
- 11. Write a note on Bus topology with a neat diagram.





12. What are the core differences between the Android and iOS mobile operating systems in terms of architecture and design philosophy?

(10×3=30 marks)

Part B

Answer **all** questions Each question carries **9** marks

13. a) Explain the monolithic design structure for an operating system.

OR

- b) Explain the different types of system calls in an Operating System
- 14. a) Compare and contrast the Round Robin and First-Come-First-Serve (FCFS) scheduling algorithms. In what scenarios is each algorithm most suitable?

OR

- b) Compare and contrast the different deadlock prevention and avoidance strategies.
- 15. a) Explain how paging may be implemented using Inverted page tables with a neat diagram.

OR

- b) How does the combination of paging and segmentation in virtual memory enhance system performance and overcome the shortcomings of using either method in isolation?
- 16. a) Explain File System Structure with neat diagram

OR

- b) Explain the purpose of secondary storage in a computer system and how it complements primary storage.
- 17. a) Discuss Communication Protocol with a neat diagram.

OR

b) Provide a comprehensive explanation of iOS, including its history, fundamental features, user interface design, and its importance within the Apple ecosystem, particularly in the context of iPhones and iPads

(5×9=45 marks)

