INTEGRATED PG DEGREE EXAMINATION, DECEMBER 2023

Third Semester

CORE - ICSC3CR4 - COMPUTER ORGANIZATION AND ARCHITECTURE

INTEGRATED MSC COMPUTER SCIENCE-ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING & INTEGRATED MSC COMPUTER SCIENCE- DATA SCIENCE

2020 ADMISSION ONWARDS

13F6598E

Time: 3 Hours   Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. What is Op-code?Explain with an example?

2. Discuss the steps/phases for an each instruction cycle.

3. Discuss the various binary codes for register selection fields.

4. Mention different types of instructions.

5. Define ROM.

6. Differentiate physical and virtual address space.

7. According to Flynn's Classification of Computer, Which architecture is of only theoretical interest and no practical system has been developed based on it?

8. Which are the applications of vector processing?

9. Discuss multistage switching network.

10. Define critical section.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Discuss input and output unit? Explain any two I/O devices.

12. Differentiate two bus structure and alternative two bus structure.

13. Discuss the stack operation to evaluate 7*3+2*5

14. Explain memory hierarchy in a computer system.

15. Explain the chip organization of a RAM chip.

16. What are the performance metrics of parallel systems?

17. Discuss parallel arbitration logic.

18. Discuss different solutions to cache coherence problem.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Explain different types of addressing mode.

20. Explain different mapping techniques used in cache memory.

21. Explain different types of hazards that occur in a pipeline.

22. Explain the characteristics and types of mutiprocessor.

(2×5=10 weightage)