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NS-417

B. Sc. (First Year) Examination, 2023

(Major)

(For Regular/Private/Fail/Ex./Suppl. Students)

COMPUTER SCIENCE

Paper : First

(Computer System Architecture)

Time Allowed : Three hours

Maximum Marks : 70

Note: Attempt questions of all **three** sections as directed. Distribution of marks is given with sections.

Section-'A'

(Very Short Answer Type Questions)   5×1=5

Note: Attempt all questions. Each question carries 1 mark.

1. (i) What is Computer Organization?

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(ii) To reduce the memory access time we generally make use of?

(iii) In IA-32 architecture alongwith the general flags, which of the following conditional flags are provided?

(iv) What is the full form of ISA?

(v) The full form of CISC.

Section-'B'

(Short Answer Type Questions)   5×5=25

Note: Attempt all questions. Each question carries 5 marks.

2. What are flip-flops?

Or

What is a DMA?

3. What does wait state mean?

Or

What is a virtual memory on a computer?

4. Can you state some of the common rules of assembly language?

Or

What are the two hardware methods to establish a priority? Explain each method.

5. Define Auxiliary Memory.

Or

Define Cache Memory.

6. What is a Snooping Protocol?

Or

What is the write-through method?

Section-'C'

(Long Answer Type Questions)   4×10=40

Note: *Attempt any four questions. Each question carries 10 marks.*

7. What is Computer System Architecture, and why is it important?

8. Explain the concept of Von Neumann Architecture.

9. What is Virtual Memory, and why is it necessary?

10. What is pipelining, and how does it improve CPU performance?

11. What is the difference between RISC and CISC architecture?

12. What is the role of firmware in computer architecture?

13. What is the difference between ROM and RAM?

14. What is the purpose of an input/output (I/O) system, and how does it work?

15. What is a System bus, and how does it work?

16. What is the difference between synchronous and asynchronous communication?