MAX. Time: 3 Hrs.]   [MAX. Marks: 70

Instructions:
1. Attempt all questions.
2. Answers to the two sections must be written in separate answer books.
3. Figures to the right indicate full marks.
4. Assume suitable data, if necessary.

Section: I

Q:1(a) Draw and explain the program execution for the following, with all (5)
required steps and show the content of IR, PC and AC at every step.
Memory Contains:
1860H at address 300H
4861H at address 301H
2860H at address 302H
Data: 0005H at address 860 H
       0003H at address 861H
Reference opcode :
0001H : Load AC from memory
0010H : Store AC from memory
0100H : Add AC and memory

(b) What is Infiband? Explain its's architecture and list its advantages. (5)
(c) Give difference between memory mapped I/O and Isolated I/O. (2)

OR

Q:1 (a) Explain firewire serial bus and give its advantages. (5)
(b) Draw and explain wilkes microprogram control unit. (5)
(c) Write the micro operations which are performed in given cycle. (2)
        (i) Indirect Cycle (ii) Interrupt cycle.

Q:2 (a) Explain structure and function of computer with figures. (5)
(b) Write short note on Interrupts. (5)
(c) Draw the block diagram of an I/O module. (2)

OR

Q:2 (a) Draw flow chart of simple interrupt processing and explain it. (5)
(b) What is PCI? Explain PCI read operation with timing diagram. (5)
(c) What is difference between synchronous bus and asynchronous bus? (2)

Q:3 (a) Draw and explain graph coloring approach for compiler based register (5)
optimization.
(b) Explain pipeling. (4)
(c) List out the characteristics of RISC. (2)

Section: II

Q.4 (a) List out all the mapping methods and explain any one. (5)
 (b) List different types of RAM and Explain it with figure. (5)
 (c) Draw flow chart of cache memory read operation. (2)

OR

Q.4 (a) List Various types of ROM and explain any four types. (5)
 (b) What is the principle of cache memory? Explain it in detail. (5)
 (c) What is write policy? Explain in brief. (2)

Q.5 (a) Write a short note on optical memory. (5)
 (b) Explain floating point representation and convert (-0.6875) to binary in single and double precision. (5)
 (c) Define following terms. (1) Seek time (2) Rotational delay. (2)

OR

Q.5 (a) Write a short note on magnetic disk memory. (5)
 (b) Explain floating point representation and convert (0.8125) to binary in single and double precision. (5)
 (c) Define following terms. (1) Constant angular velocity (2) Transfer time. (2)

Q.6 (a) Draw and explain the expanded structure of IAS computer in detail. (5)
 (b) What is DMA? Explain different configuration of DMA. (4)
 (c) Draw and explain in the CD-ROM Block format in brief. (2)

END OF PAPER