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S.Y.J.C. Preliminary Examination, January 2020

Sub.: Computer Science Paper: II (Computer Hardware)

- Q. 1 A** Select the correct alternatives and rewrite the following 4
- a. The instruction STA belongs to _____ addressing mode
i) Register ii) Direct iii) Indirect iv) Implicit
- b. _____ is non-maskable interrupt.
i) TRAP ii) RST 7.5 iii) RST 6.5 iv) RST 5.5
- c. LDA addr is _____ byte instruction
i) 1 ii) 2 iii) 3 iv) 4
- d. _____ cable has highest bandwidth
i) UTP ii) STP iii) Co-axial iv) Fibre Optic
- B** Answer any two of the following 6
- a. Define the following terms
a) Instruction Cycle b) Machine Cycle c) T - state
- b. List the major features of 8051 microcontroller.
- c. Explain modem and router with their uses.
- Q. 2 A** Answer any two of the following 6
- a. The flag register of 8085 microprocessor contains the data 56H. Interpret its meaning
- b. Give comparison between 80286 and Pentium microprocessor.
- c. Give the comparison between Coaxial cable and Twisted pair cable
- B** Answer any one of the following 4
- a. What do you mean by memory map of a system? Explain
- b. Explain how 8051 microcontroller addresses two separate memory spaces.
- Q. 3 A** Answer any two of the following 6
- a. What is the function of following registers in 8085
i) Accumulator ii) Program counter iii) Flag
- b. Discuss the main features of Pentium processor.
- c. Why wireless networks are useful? Explain in detail
- B** Answer any one of the following 4
- a. Discuss various addressing modes of 8085.
- b. Differentiate between microprocessor and microcontroller.
- Q. 4 A** Answer any two of the following 6
- a. Write a note on Interrupt in 8085 microprocessor.
- b. Explain the following 8085 instructions.
i) CMC ii) RAR iii) ANI
- c. Explain hub and repeater in detail.
- B** Answer any one of the following 4
- a. Explain conditional and unconditional branching instructions with suitable examples.
- b. What do you mean by i) Cache memory ii) Multiplex address / data bus
- Q. 5** Answer any two of the following 10
- a. Write an assembly language program to subtract the number stored in memory location 3601h from the number stored in memory location 3600h. Store the result at location 3602h
- b. Write an assembly language program to find how many times data 05h appears in a memory block starting from 2300h to 2308h. Store the result in 2309h.
- c. Write an assembly language program to find the largest number from a series of numbers whose length is stored in 200Ah and series itself begins from 200Bh. Store the result in memory location 2009h
- OR**
- Q. 5** Answer any two of the following 10
- a. Write an assembly language program to copy a block of data having starting address 2000h to a new destination with starting address 3000h. Length of the block is stored at 1FFFh
- b. Write an assembly language program to divide a byte stored at location 2040h by a non-zero byte stored at location 2041h. Place the quotient at memory location 2042h and remainder at location 2043h
- c. Write a assembly language program to get sum of series of numbers whose length is stored in 2050h and the series itself starts from 2051h. Store the result in 2300h.
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