Assignment

System programing

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Q1:

1. system software: System software is a type of computer program that is designed to run a computer’s hardware and application programs. , the system software is the interface between the hardware and user applications.

examples of system software:

1. The BIOS
2. Compiler: Computer software that translates (compiles) source code written in a high-level language (e.g., C++) into a set of machine-language instructions that can be understood by a digital computer’s CPU.

Q2: compare

|  |  |  |
| --- | --- | --- |
|  | System software | application software. |
| Definition | System software is a type of computer program that is designed to run a computer’s hardware and application programs | Programs developed for a specific goal. |
| Usage | Used for operating  Computer hardware | Used by user to do specific goals |
| Examples | Compiler, assembler, debugger | Media player, web browser |

Q3:

LDA ALPHA

STA GAMMA

ALPHA WORD 15

GAMMA RESW 1

Q4:

LDA 65

STA DELTA

DELTA RESW 1

Q5:

LDA ALPHA

MUL BETA

ADD TEN

STA GAMMA

ALPHA RESW 1

BETA RESW 1

GAMMA RESW 1

TEN WORD 10

Q6:

LDA ALPHA

LDS BETA

MUL S,A

ADD #10

STA GAMMA

ALPHA RESW 1

BETA RESW 1

GAMMA RESW 1

Q7:

LDX ZERO

SAVE LDCH STR1,X

STCH STR2,X

TIX ELEVEN

JLT SAVE

ALPHA RESW 1

BETA RESW 1

GAMMA RESW 1

Q8:

LDX #0

STRING LDCH STR1, X

STCH STR2, STR3

TIX #11

JLT STRING

STR1 BYTE C’COPY STRING’

STR2 BYTE

STR3 RESW 11

Q9:

(a) symbol table

(B) opcode table

(c) define directives are used to help in assignment of addresses.

Q10:

1. all instructions except RSUB and I/o instructions will use 15-bit memory address. only 4 bytes instructions can be used by modifier to be written.
2. Relative and immediate addressing does not need to be modified.

Q11:

1. False , we need to state the start location
2. False, direct addressing only
3. True
4. True
5. False, it is created at the end of the program