**List number 8**

**Computer System Organization**

1. Convert a binary number (X)2=10000101.11001 to IEEE-754 floating-point format (32 bits – single-precision binary floating-point format).

2. Convert a hexadecimal number (X)16=-1FE2B.07 to IEEE-754 floating-point format (32 bits – single-precision binary floating-point format).

3. Convert a hexadecimal number (X)16=-103F.83 to IEEE-754 floating-point format (32 bits – single-precision binary floating-point format).

4. Convert a decimal number (X)10=1234 to IEEE-754 floating-point format (32 bits – single-precision binary floating-point format).

5. There are two binary numbers: (X)10=2 and (Y)10=3:

* convert decimal numbers to binary,
* write numbers in IEEE 754 floating-point format (32 bits) (as a normalized significand/mantissa and an exponent),
* calculate a sum of the numbers.

6. There are two binary numbers: (X)10=8 and (Y)10=1:

* convert decimal numbers to binary,
* write numbers in IEEE 754 floating-point format (32 bits) (as a normalized significand/mantissa and an exponent),
* calculate a sum of the numbers.

7. There are two binary numbers: (X)2=10101010.11 and (Y)2=0.001:

* write numbers in IEEE 754 floating-point format (32 bits) (as a normalized significand/mantissa and an exponent),
* calculate a sum of the numbers.

8. Convert a decimal numbers (X)10=32.125 and (Y)10=2.25 to IEEE-754 floating-point format (32 bits – single-precision binary floating-point format). Calculate Z = X+Y – do the addition for numbers written in IEEE-754 floating-point format.

9. Convert a decimal numbers (X)10=65530 and to IEEE-754 floating-point format (32 bits – single-precision binary floating-point format). Calculate Z = X+Y – do the addition using IEEE-754 floating-point format.

10. There are two binary numbers (X)2=1101.11 and (Y)2=1010.01. Calculate Z = X\*Y – do the binary multiplication. Convert a product to IEEE-754 floating-point format (32 bits – single-precision binary floating-point format).

9. Convert a binary numbers (X)2=1.11111 and (Y)2=100000. Calculate Z = X\*Y – do the binary multiplication. Convert a product to IEEE-754 floating-point format (32 bits – single-precision binary floating-point format).