Шеш ТЗЗ № 3 Вар 22

№	Ответ
1	Ш, Й, Х, У
2	Ь(000), В(0010), Ч(0011), Ы(01), Ъ(10), Щ(110), Ы(111)
3	63₁₀
4	(2,32)

1) $e = 23$ (2, 22, 19, 11)

$n = 51$

$3 \cdot 2 \mod 51 = 26$

$22^7 \mod 51 = 10$

$10^7 \mod 51 = 22$

$11^7 \mod 51 = 20$

26	10	22	20
Щ	Й	Х	У

$\varphi(51) = \varphi(3) \cdot \varphi(17) = 2 \cdot 16 =$

$= 32$

$23d = 1 \mod 32$

$23d + 32y = 1$

$d = 7$

$y = -5$

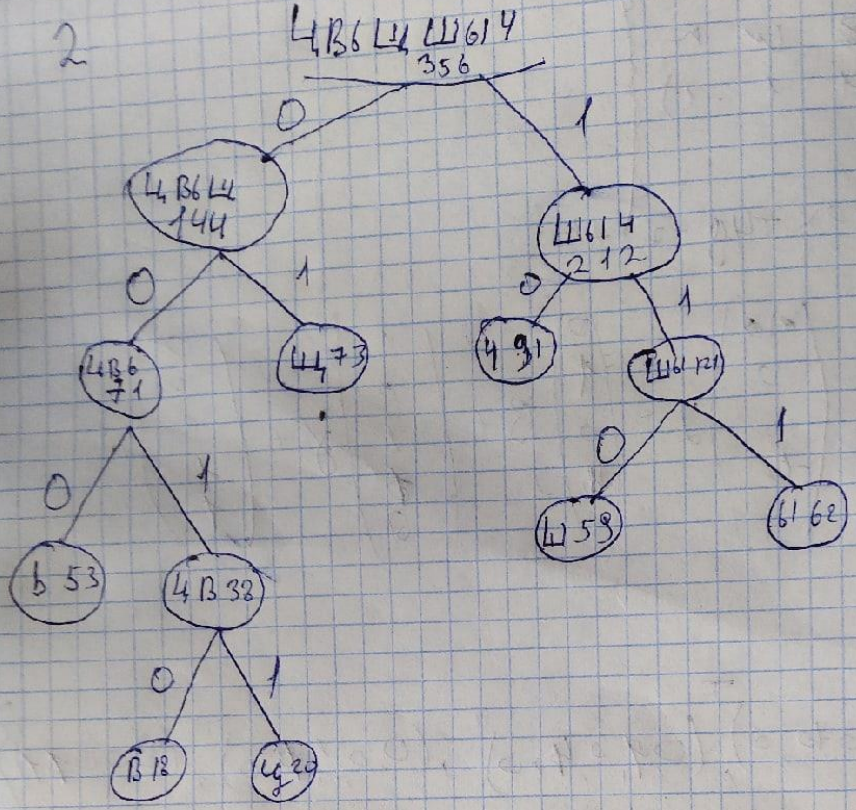
$d = 7 \mod 32 = 7$

2) Ц - 20 Щ - 73 Б: 33

Ч: 91 Ъ: 18

Ш: 59 Ы: 62

2



б = 000

В = 0010

Ч = 0011

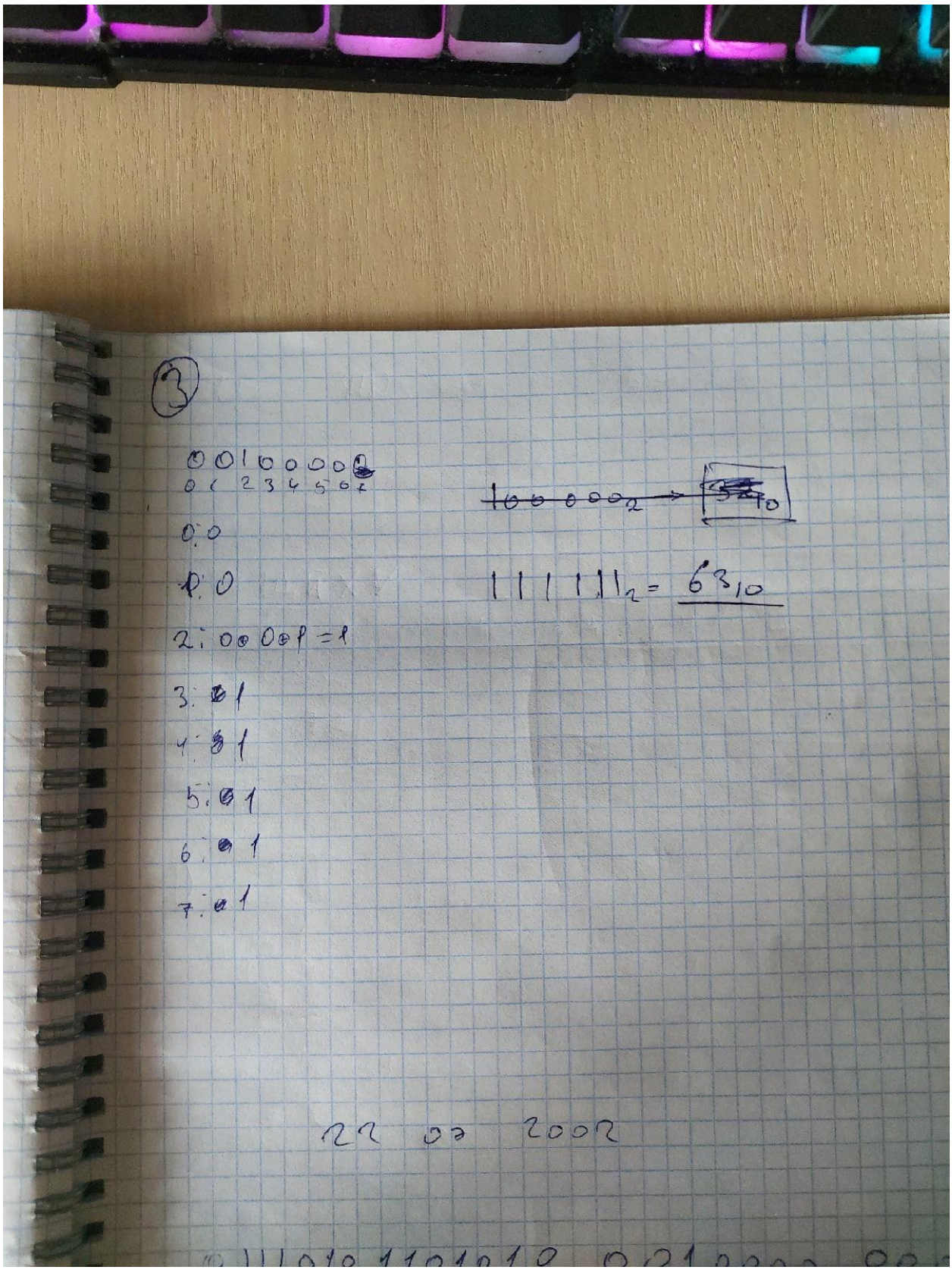
Ц = 01

4 = 10

Ш = 110

бІ = 111

ЯбІШ6 = 0010 111 110 000


3
0 1 0 0 0 0 0
0 1 2 3 4 5 6
0: 0
1: 0
2: 0 ⊕ 0 ⊕ 1 = 1
3: 0 1
4: 0 1
5: 0 1
6: 0 1
7: 0 1
1000000_2
54_{10}
$111111_2 = 63_{10}$
22 03 2002

Задача 4

X	0	1	2	3	4
Y	2	0	1	4	1

0) $x=0$

1) $x=1$

2) $x=2$

3) $x=-2$

4) $x=-1$

$$q_0+q_1x+q_2x^2+q_3x^3=(x-d)y$$

$$\begin{cases} q_0=-2d \\ q_0+q_1+q_2+q_3=(1-d)\cdot 0 \\ q_0+2q_1+4q_2+3q_3=(2-d)\cdot 1 \\ q_0-2q_1+4q_2-3q_3=(-2-d)\cdot 4 \\ q_0-q_1+q_2-q_3=(1-d)\cdot 1 \end{cases} \Rightarrow$$

$$Q(x)=P(x)\Delta(x)\underset{5}{\equiv}(x-d)\hat{P}(x)$$

$$\Rightarrow \left(\begin{array}{ccccc|c} 1 & 0 & 0 & 0 & 2 & 0 \\ 1 & 1 & 1 & 1 & 0 & 0 \\ 1 & 2 & 4 & 3 & 1 & 2 \\ 1 & -2 & 4 & -3 & -1 & 2 \\ 1 & -1 & 1 & -1 & 1 & -1 \end{array}\right) \sim \left(\begin{array}{ccccc|c} 1 & 0 & 0 & 0 & 2 & 0 \\ 0 & 1 & 1 & 1 & -2 & 0 \\ 0 & 2 & 3 & -1 & -2 & 1 \\ 0 & 1 & -2 & 3 & 3 & -1 \\ 0 & 1 & -1 & 1 & 1 & 1 \end{array}\right) \sim$$

$$\sim \left(\begin{array}{ccccc|c} 1 & 0 & 0 & 0 & 2 & 0 \\ 0 & 1 & 1 & 1 & -2 & 0 \\ 0 & 0 & 1 & \frac{1}{2} & 1,5 & 1 \\ 0 & 0 & 1 & -\frac{1}{6} & -\frac{3}{6} & -\frac{1}{3} \\ 0 & 0 & 1 & 0 & -\frac{5}{2} & -\frac{1}{2} \end{array}\right) \sim \left(\begin{array}{ccccc|c} 1 & 0 & 0 & 0 & 2 & 0 \\ 0 & 1 & 1 & 1 & -2 & 0 \\ 0 & 0 & 1 & \frac{1}{2} & 1,5 & 1 \\ 0 & 0 & 0 & 1 & 4 & 1 \\ 0 & 0 & 0 & 0 & 1 & 1 \end{array}\right)$$

$d=1 \Rightarrow q_0 = -2 \Rightarrow$

$$\Rightarrow \begin{cases} q_1 + q_2 + q_3 = 2 \\ 2q_1 + 4q_0 + 3q_3 = 3 \\ -q_1 + q_2 - q_3 = 0 \end{cases} \Rightarrow$$

$\Rightarrow q_2 = 1$

b)

$$\begin{cases} q_1 + q_3 = 1 \\ 2q_1 + 3q_3 = -1 \end{cases} \rightarrow q_1 = 1 - q_3 \rightarrow q_1 = 4$$

$q_3 = -3 \Leftarrow 2$

$D(x) = x - 1 \Rightarrow (Q)x = x + 4$

$$2x^3 + x^2 + 4x + 3 \;|\; x + 1$$
$$2x^3 + 3x^2 \qquad\qquad 2x^2 + 3x + 2$$
$$-3x^2 + 4x$$
$$-3x^2 + 2x$$
$$2x + 3$$
$$2x + 3$$
$$0$$

$P(x) = 2 + 3x + 2x^2 \Rightarrow \boxed{(2, 3, 2)}$