2.

1 bit start
8 bits data
1 odd parity
2 bits stop
Total = 12 bits
U1BRG = 34 corresponding to 114285.7 actual baud rates

Time required for each polling = $\frac{send\ byte}{actual\ baud\ rates} = \frac{12}{114285.7} = 105\ \mu s$

3.

- a baud rate of 9600 bps for a single byte transmission with one stop bit and 8-bit data transmission will have a 960 bps for every bit.
- We know in transmit UART data the bits are getting average out in the 7, 8, and 9 clock counts out of 16 for every bit.

- **The fastest baud rate tolerance:**

  We can cut off the 8 clock counts out of 16:
  $960 * \frac{8}{16} = 480 \text{ pbs}$ = that can be cut off
  $9600 - 480 = 9120\ pbs$
  $\mathbf{9120\ pbs}$ is the fastest baud rate.

- **The slowest baud rate tolerance:**
  We can add the 7 clock counts out of 16:
  $960 * \frac{7}{16} = 420 \text{ pbs}$ = that can be added
  $9600 + 420 = 10020\ pbs$
  $\mathbf{10020\ pbs}$ is the slowest baud rate.

5.

Transmitting 16- bits data
Wait 1 ms
Receiving 16-bits data

Time = Transmitting + 1 ms + Receiving

$$Time = \frac{1}{8M}\ 16 + 1\ ms + \frac{1}{8M} * 16 = \ 1.004\ \text{ms}$$