

1) a) SPI (Serial Peripheral Interface)

b) Point to multi-point / Serial transmission

c) SCLK $\rightarrow$ 'Serial clock', Synchronises data

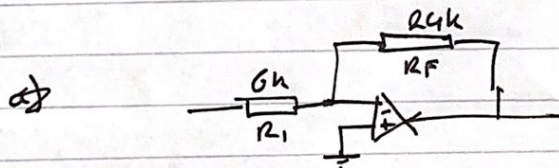
MOSI $\rightarrow$ 'Master out Slave In', transmitted data from Master to slave (tx)

MISO $\rightarrow$ 'Master In Slave Out', transmitted data from slave to master (rx)

SS1 $\rightarrow$ 'Slave Select 1', selects first slave to for ~~transmit data to~~ ^{Master} communicate with

SS2 $\rightarrow$ 'Slave Select 2', Selects second slave to ~~transmit data to~~ ^{for} ~~from that slave Master~~ communicate with.

2) A)



a) Inverting Amplifier.

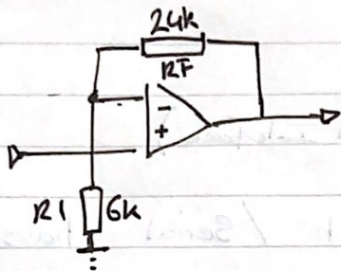
b)
$$\frac{-R_F}{R_1}$$

c)
$$\frac{-24}{6} = -4$$

d)
$$0.2 \times 4 = -0.8V$$

e) 180° out of phase.

b)



a)

Non-Inverting Amplifier

$$b) 1 + \frac{R_F}{R_1}$$

$$c) 1 + \frac{24}{6} = 1 + 4 = \underline{5}$$

$$d) 0.11 \times 5 = \underline{0.55V}$$

e) In-Phase

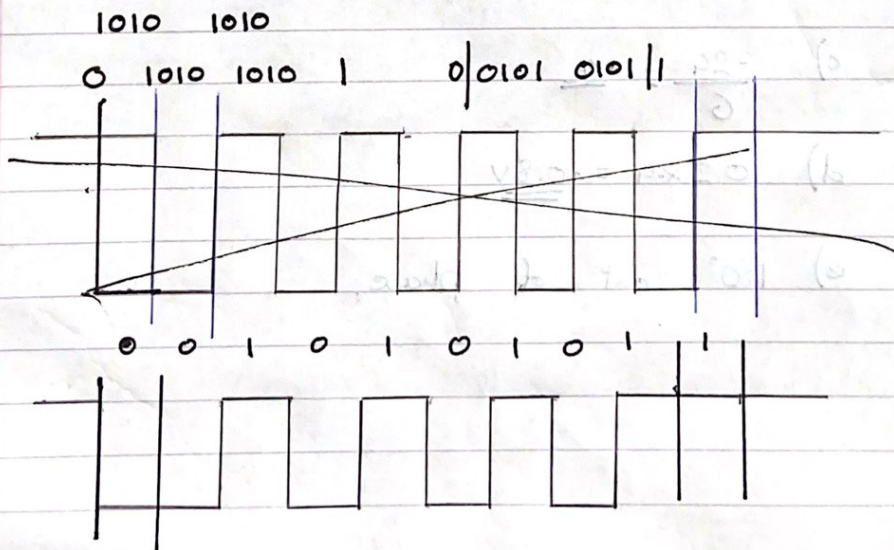
3)

a) RS-232

b) Point to Point

c) Outputting data to a terminal

d) AA



4) a) $0 \mid 1000 \mid 1100 \mid 1$

X

0011 0001

3 1

0x21

b) ASCII = '1'

B) a) $0 \mid 1100 \mid 0100 \mid 1$

X

0010 0011

2 3

0x23

b) ASCII = '#'