$$Moles = \frac{mass}{RMM}$$

$$Mass = D \times V$$

Density of ethanol = 789 kg/m^3
= 0.789 g/cm^3

Volume of ethanol = 1L
= 1000ml

$$\therefore Mass = 0.789 \times 1000$$
$$Mass = 789\ g$$

Find moles of ethanol

Relative molecular mass:

Mass of carbon = 12
Mass of hydrogen = 1
Mass of oxygen = 16

$$(2 \times 12) + (5 \times 1) + (1 \times 16) + (1 \times 1)$$

$$= 24 + 5 + 16 + 1$$

$$= 46\ g$$

$$Moles = \frac{mass}{RMM}$$

$$Moles = \frac{789}{46}$$

$$Moles = 17.15$$

$$\therefore There\ are\ 17.15\ moles\ of\ ethanol$$

Moles of carbon dioxide produced

Relative molecular mass:

Mass of carbon = 12
Mass of oxygen = 16

$$(1 \times 12) + (2 \times 16)$$

$$= 12 + 32$$

$$= 44\ g$$