Question 1

i)   Swiss nominal GDP. 1990:100*20+1000*1=3000, 2000:200*25+2000*2=9000
ii) Swiss real GDP (1990 base prices): 1990:100*20+1000*1=3000, 200*20+2000*1=6000
iii) Swiss GDP Deflator: 1990:1, 2000,1.5
iv) Growth rates: Nominal=200%, Real=100%. Nominal GDP growth is larger because it includes growth in the prices.
v)   Swiss CPI: 1990: 20*1+1*10+5*1=35, 2000: 25*1+2*10+5*5=70. CPI inflation is 100%, while GDP deflator inflation is only 50%. The reason why they are different is that CPI inflation includes the price of oranges (Swiss people consume oranges) that increase a lot (500%) while GDP deflator inflation does not include oranges (they are not produced locally). [the only effect is the import effect – the substitution effect is not at work because the GDP basket has not changed]

Question 2

Value added

Canadian Wheat Farmer	$50	=$50
Gold Medal Flour	$100-$50	=$50, Imports $50
ND farmer	$140	=$140
PunchPizza	$300-$80-$40	=$180, US income= $120 (Punch profit), Italian Income $60 (pizzaioli)
McDonald	$200-$20-$100	=$80

GDP,GNP and CA

US GDP=Sum of value added of US firms: $140+$50+$180+$80=$450
US NFP=-$60
US GNP=GDP+NFP=$450-$60=$390
ITA GDP = 0
ITA GNP = $60
US CA=NFP+Net Exports=-$60-$50=-$110
ITA CA=NFP+Net Exports=+$60

Question 3

i)   The steady state equation yields
$s*k^{0.5}=\delta*k$ that gives $k_{ss}=(s/\delta)^2=9$. Output is then given by $k_{ss}^{0.5}=3$ and consumption is given by $(1-s)*k_{ss}^{0.5}=.85*3=2.55$.

ii) $s*2*k^{0.5}=\delta*k$ that gives $k_{ss}=(2s/\delta)^2=4$. Output is then given by $2k_{ss}^{0.5}=2*2=4$ and consumption is given by $(1-s)*2k_{ss}^{0.5}=.85*4=3.40$. They should adopt the policy because it increases consumption per capita.

Question 4

Using the Solow model diagram with population growth (lecture 6, fig 11) it is easy to show that Neptunia has the highest GDP per worker.

GDP in Neptunia does not grow while in Urania GDP grows at 1% per year to keep pace with the population. Hence in Urania GDP grows faster.

I would invest with return to capital are highest. Since Urania has lower capital per worker the return to capital would be higher in Urania and I would invest there.

Question 5

One reason why emerging economies might have faster productivity growth than developing economies is that emerging economies do not employ the most advanced technologies and thus their productivity can grow rapidly simply by adopting/imitating the best technologies from developed nations.

One reason why the opposite might be true is that emerging economies might have capital markets which do not allocate resources in the most efficient way, i.e. do not allocate more resources to more productive firms. This results in lower productivity, lower returns to capital and hence lower growth of output.

Shorter questions

Yes. Large government deficits increase government debt and large government debt implies that in the future the government will have to make large interest payments and this will tend to increase future deficits (Key equations Def=-Tax+G+Transf+r*B, B(t)=B(t-1)+Def(t). Also the relation could be even stronger if higher debt today, increases default expectations and hence increase the interest rate that government have to pay in the future.

No. Investment in 2012 increases capital stock in 2013 that is used to produce output (and hence increase GDP) in 2013.

Yes. Unemployment rate = U/(U+E) where U are people seeking a job and E are people with a job. If U increases a lot it is possible that the unemployment rate increases even when E goes up.

The fact that firms that export are more profitable does not mean that it is the export choice that causes the profitability. It might be the case that is the profitability that causes the export or there might be a third factor (i.e. good marketing) that drives both profitability and export. So it is not obvious that deciding to export will increase profitability.