Disclaimer: The following answers are only suggested solutions, and may <u>NOT</u> include a complete solution for the questions and problems in your homework, as you must present in your assignments and/or exams. In your solutions you must show your work, and demonstrate your line of thinking clearly. Please, always check my calculations for unintentional typos or miscalculations.

1-

Real GDP	Nominal GDP	GDP Deflator
2234	2687	**120**
3260	**3912**	120
2228	1983	89
4500	4589	**102**
9564	**9564**	100
3413	4607	135

2- (i) and (ii)

	Value-Added Approach			Expenditure Approach		
Sector	Value-Added	Value of Input	Value of Output	Consumption	Investment	Net Exports
Steel	10	0	10	0	2	0
Automobile	10	15	25	15+4=19	0	10-4-5=1
Construction	1	1	2	0	0	0
Services	6	0	6	5	0	0
Total	27	16	43	24	2	1

Value-Added Approach: GDP = 27
Expenditure Approach: GDP= C + I + NX = 27
 (iii)- GDP falls by $5 billion

3-

	Electricity	**Sugar**	**Cookies**	**Restaurants**	**GDP**
a)- GDP =	$(800 - 100 - 100 - 200)$ +	$(500 - 200 - 200)$ +	800 +	1200	= 2500
b)- GDP =	800 +	$(500 - 100)$	+ $(800 - 100 - 200)$ +	$(1200 - 200 - 200)$	= 2500
c)- GDP =	$(500 + 300)$ +	$(300 + 100)$ +	$(400 + 100)$ +	$(600 + 200)$	= 2500

d)- All of them are the same.

4

a)-
2001 Nominal GDP = 10 * 2,000 + 4 * 1,000 + 1,000 * 1 = $25,000.
2002 Nominal GDP = 12 * 3,000 + 6 * 500 + 1,000 * 1 = $40,000.

Growth rate of nominal GDP in year 2002 = [(40,000 –25,000)/25,000]*100=60%

b)- Real GDP for the base year (2001) would be the same as nominal GDP = $25,000
2002 Real GDP = 12 * 2,000 + 6 * 1,000 + 1,000 * 1 = $31,000.
Growth rate of real GDP in year 2002 = [(31,000 –25,000)/25,000] *100=24%

c)- Real GDP for the base year (2002) would be the same as nominal GDP = $40,000
2001 Real GDP = 10 * 3,000 + 4 * 500 + 1,000 * 1 = $33,000.
Growth rate of real GDP in year 2002 = [(40,000 –33,000)/33,000]*100=21.2%

d)- This is one of the troublesome aspects of this method of real GDP calculations.

5

GDP deflator = Nominal GDP/Real GDP *100

a)- GDP deflator for year 2001 = 25,000/25,000 *100 =100
   GDP deflator for year 2002 = 40,000/31,000 *100 =129
   Inflation of GDP deflator in year 2002 =(129 –100)/100] *100=29%

b)- GDP deflator for year 2001 = 25,000/33,000 *100 =75.76
   GDP deflator for year 2002 = 40,000/40,000 *100 =100
   Inflation of GDP deflator in year 2002 =(100 –75.76)/75.76] *100=32%

c)- Yes. Again the rates depend on choosing the base year.

6.
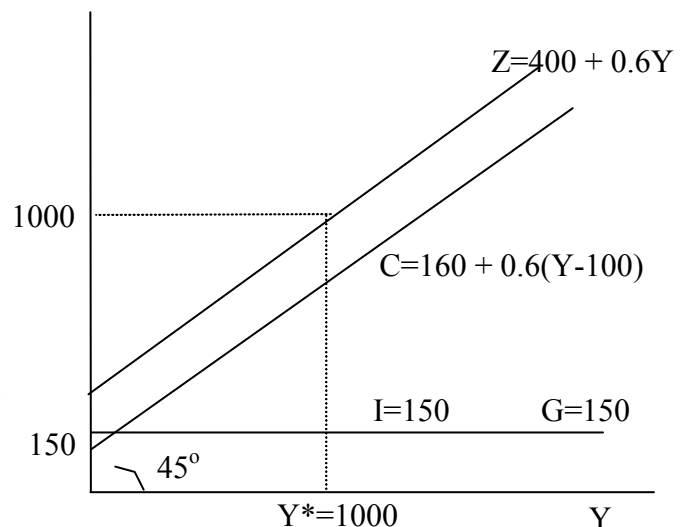a)-
Z= C+ G + I ➔ Z =160 +0.6*(Y-100) +150 +150
➔ Z=400 + 0.6 Y
Equilibrium Condition: Z = Y
Line Z = Y has a slope of 45 degree.

$\begin{cases} Z=400 + 0.6\ Y \\ Z= Y \end{cases}$ ➔   Y = 400 + 0.6 Y

➔   Y=1000   (point Y* in the graph)
  (Equilibrium Output/Income/Demand/Expenditure)

b)- Equilibrium Disposable Income:

Z=400 + 0.6Y

1000

C=160 + 0.6(Y-100)

I=150   G=150

150
    45°
              Y*=1000   Y

$Yd = Y - T$ ➜ $Yd = 1000 - 100 = 900$

c)- Equilibrium Consumption:
   $C = 160 + 0.6 Yd = 160 + 0.6 * 900$ ➜ $C = 700$