

I.

1. False, planned investment can exceed actual investment. If planned investment is greater than actual investment that means that the firms planned to sell more than they did ($Y > AE$).
2. False, changes in fixed weight price indices like the CPI tend to overstate the rate of inflation because they don't account for substitution towards cheaper goods.
3. True, if the minimum wage is higher than the market wage rate, then there will be more people who want to work at that wage rate but firms will not want to hire as many workers. So if the demand for labor corresponds to an equilibrium wage lower than the minimum wage, there will be unemployment.
4. False, the return from investing with long term interest rates should be equal to the return received from investing with short term rates. Hence, long term interest rates depend on both current short term interest rates and expected future interest rates: $(1+r_1)(1+r_2^e) = (1+R)^2$. So, if long term interest rates are high while current short term rates are almost zero, this means future short term rates are expected to increase – which is what we would expect to happen with the stimulus bill and improvement in the economy.

II.

1. The strength of the economy during those times can be attributed to the big boom in the stock market. As a result there was a huge increase in net wealth. This wealth effect led to a higher consumption levels overall.
2. No, Fed cannot decrease money supply without increasing interest rates. If the Fed wants to decrease money supply it has to sell securities to the public. When the Fed starts selling bonds, the price of bonds decreases and this leads to an increase in interest rates.
3. In addition to interest rates, investment depends on several variables such as, animal spirits, excess capital, wage rates vs. rental rates of capital. Investment depends positively on expected income (animal spirits), the more optimistic the firms are about how increases in output, the more they invest. Another factor is the amount excess capital firms are holding, which has a negative relationship with investment – more the excess capital firms have the less need they will have to invest since they can just utilize the idle capital. Additionally, investment will depend positively on wage rates, if labor gets expensive, this means that capital is relatively cheaper as a factor of production and so firms will substitute away from labour intensive production to capital intensive production.

4. A positive cost shock (an increase in the price of imports, PM) will lead to an increase in the price level (P) and a decrease in output (Y). This can also be seen in the AS-AD graph as a leftward (upward) shift of the AS curve.

According to this interest rate rule $r=f(P)$, the Fed will only be concerned with the increase in prices when determining the interest rate. As a result it will increase r to keep inflation in check, leading to a decrease in investment and a further contraction in the economy, i.e., a further decrease in Y .

If the Fed also considered output in its decision, $r=f(P,Y)$, the Fed will not want to increase r as much as in the previous case since they do not want Y to decrease. So even though the Fed is worried about inflation it will keep r relatively lower (increase it less than before) so that the decrease in output is smaller.

5. The sensitivity of money demand is irrelevant if the interest rate rule is followed. In both cases r will reach the same level. The only difference is how much money supply would change to reach the targeted r .

However, if the Fed keeps the money supply unchanged, then sensitivity of money demand will affect the size of the government multiplier. Since money supply is fixed, r will increase by a large percentage. This will cause investment to be crowded out leading to a smaller increase in Y . In the case where money demand is more sensitive there will be less crowding out compared to the case where money demand is less sensitive.

III.

1. This temporary increase in transfer payments will increase consumption but assuming households are following Life Cycle model, consumers would spread this increase across the remaining periods of their lives, so the impact will be less compared to Keynesian consumption model. As for the labor supply, increases in non work income create a pure income effect that unambiguously reduce the labor supply.

If the bill was in the form of temporary decreases in tax rates, the consumption pattern will behave the same as before, some will be consumed but most will be spread across the remaining periods of their lives. However, labor supply decision will depend on the magnitudes of substitution and income effects. With the tax rate decrease, leisure has a higher opportunity cost so people will work more. This is the substitution effect. On the other hand people will receive more for each hour worked – so they will work less. This is the income effect.

2. In the simple model of the goods market, the government multiplier decreases when taxes are dependent on income. This is because when G increases, there is an increase in Y but since taxes depend on income, as Y increases, so do taxes. Thus the increase in Y instigated by the increase in G is counteracted by the increase in taxes.

The G multiplier decreases further when the money market is added to the model because the increase in G will cause an increase in money demand and since money supply is fixed, there will be an increase in the interest rates, which will decrease investment. This is also called the "crowding out" effect.

When G increases there will be an unanticipated decline in firms' inventories. Because firms are very close to capacity output when the economy is on the steep part of the AS curve, they cannot increase their output very much. The result is a substantial increase in the price level.

3. Term structure of interest rates implies that long-term interest rates must be equal to the average of expected short-term interest rates:

$$(1+r_1) (1+r_2^e)=(1+R)^2.$$

This equation has to hold, but this doesn't mean it will be accurate. It implies that it will hold today, but when the time comes, r_2^e might be different from what you expected. For example if Fed announces that they are lowering short-term interest rates today (r_1) with more interest rate cuts to follow in the near future, we would expect short-term interest rates to decline over time (r_2^e), then we would expect that long-term interest rates (R) today will fall as well.

Another example is the Life Cycle Model of consumption where, to achieve maximum utility, consumers smooth consumption, by dividing her resources equally over time. Also if there is a change in wealth/income and the change expected to be permanent – each period consumption increases by amount of change hence the impact will be bigger. However, if the change expected to be temporary – again amount of change will be smoothed over remaining periods and the impact will be smaller.

In the case of stock markets, we can define price of a stock as the discounted value of its expected future dividends, where the discount factors depend on the interest rate and risk. For example if expected future dividend payments of firms increase due to the increase in Y , we'd expect to see an increase in stock prices as well, which might create a wealth effect. For a more detailed discussion see chapter 15, page 286.

For firms, expectations play an important role as well ("animal spirits"). If firms are confident that they can sell the products they produce through investment. However, a firm is not likely to increase its production capacity, if it doesn't expect to sell more of its product in the future. Since production takes time, what they anticipate of the future output/sales are also important. For a more detailed discussion see chapter 16, page 307.