

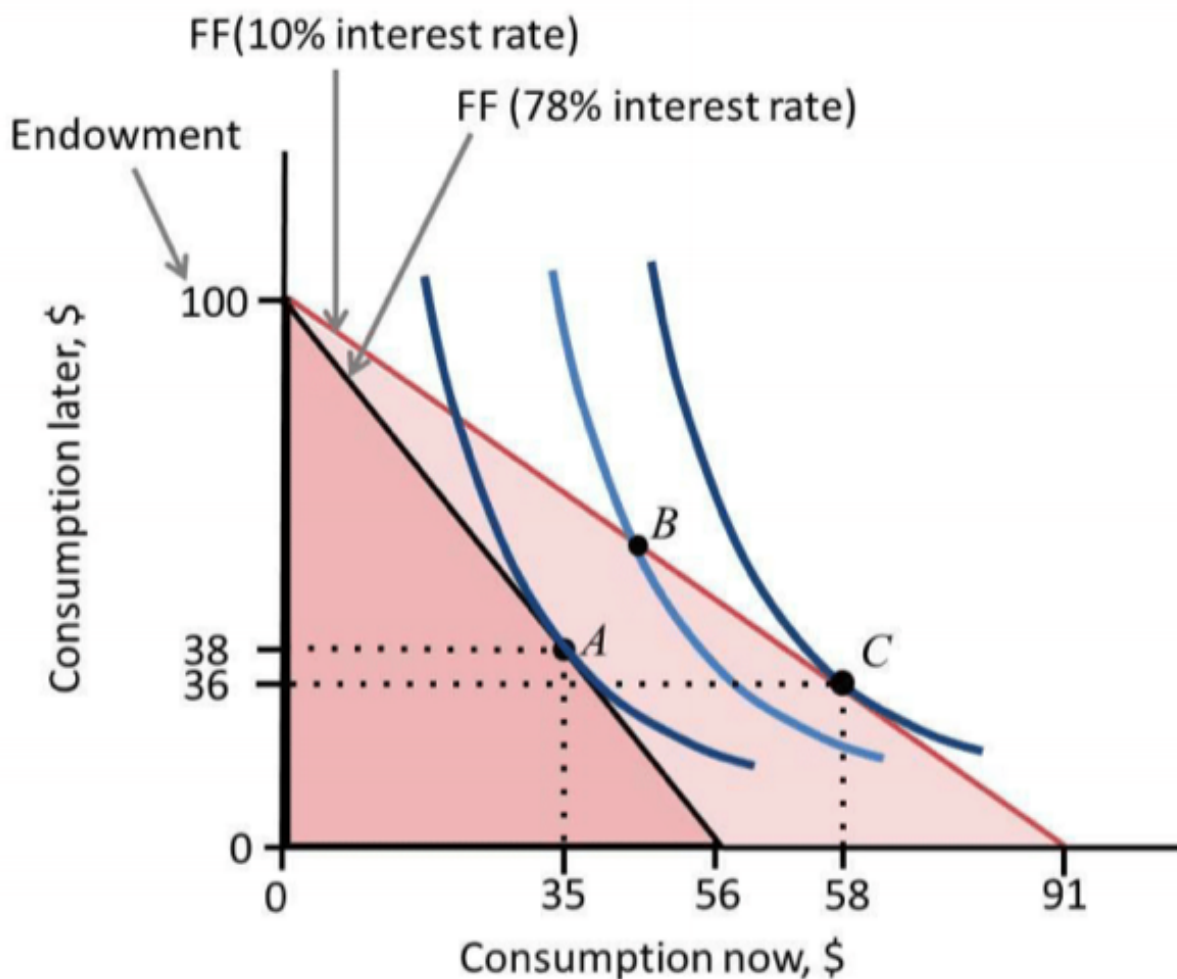
# ECON 2002.01 PROBLEM SET 6

*Unit 10*

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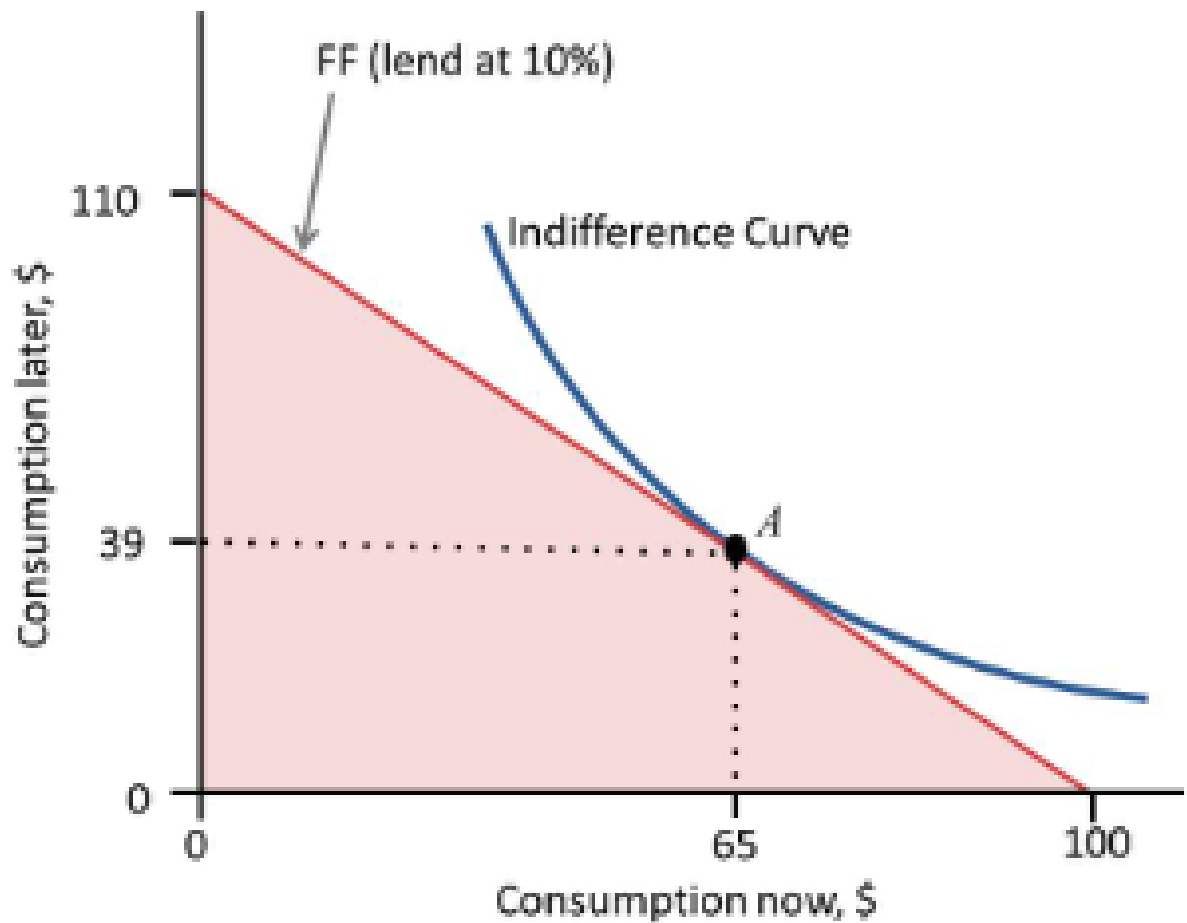
- ① (OUP-U10-Q2) Which of the following statements is correct? \_\_\_\_\_
- (A) Human capital is the physical capital owned by humans.
  - (B) Wealth and income are both stock variables.
  - (C) Depreciation is a flow variable.
  - (D) Net income is before-tax income minus tax.
- ② (OUP-U10-Q8) The diagram depicts Mary's choice of consumptions in periods 1 and 2. She has no income in period 1 and an income of \$100 in period 2. In scenario 1 the interest rate is 78%, while in scenario 2 it falls to 10%. Based on this information, which of the following statements is correct?



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- (A) In scenario 1, Mary is better off choosing B than A.
  - (B) The substitution and income effects of the interest rate fall work in the opposite directions for consumption in period 2.
  - (C) The fall in the interest rate always results in a rise in consumption in both periods.
  - (D) Mary is more impatient at her optimal choice after the interest rate fall.

- ③ (OUP-U10-Q15) The diagram depicts Marco's choice of consumptions in periods 1 and 2. He has \$100 worth of grain in period 1 and no income in period 2. Marco decides to consume \$65 worth of grain in period 1, sell the remaining grain and lend the money at an interest rate of 10%, which he uses to buy grain

for his consumption in period 2 (point A). Which of the following statements regarding his balance sheet is correct?



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- (A) The asset after lending but before consumption is \$65.
  - (B) The asset after consumption in period 1 is \$39.
  - (C) The net worth before consumption in period 2 is \$0.
  - (D) Marco's liabilities remain at 0 at all times.

④ (OUP-U10-Q20) Which of the following statements is correct? \_\_\_\_\_

- (A) If the annually compounding interest rate is 5%, then the present value of £100 in two years' time is £90.91.

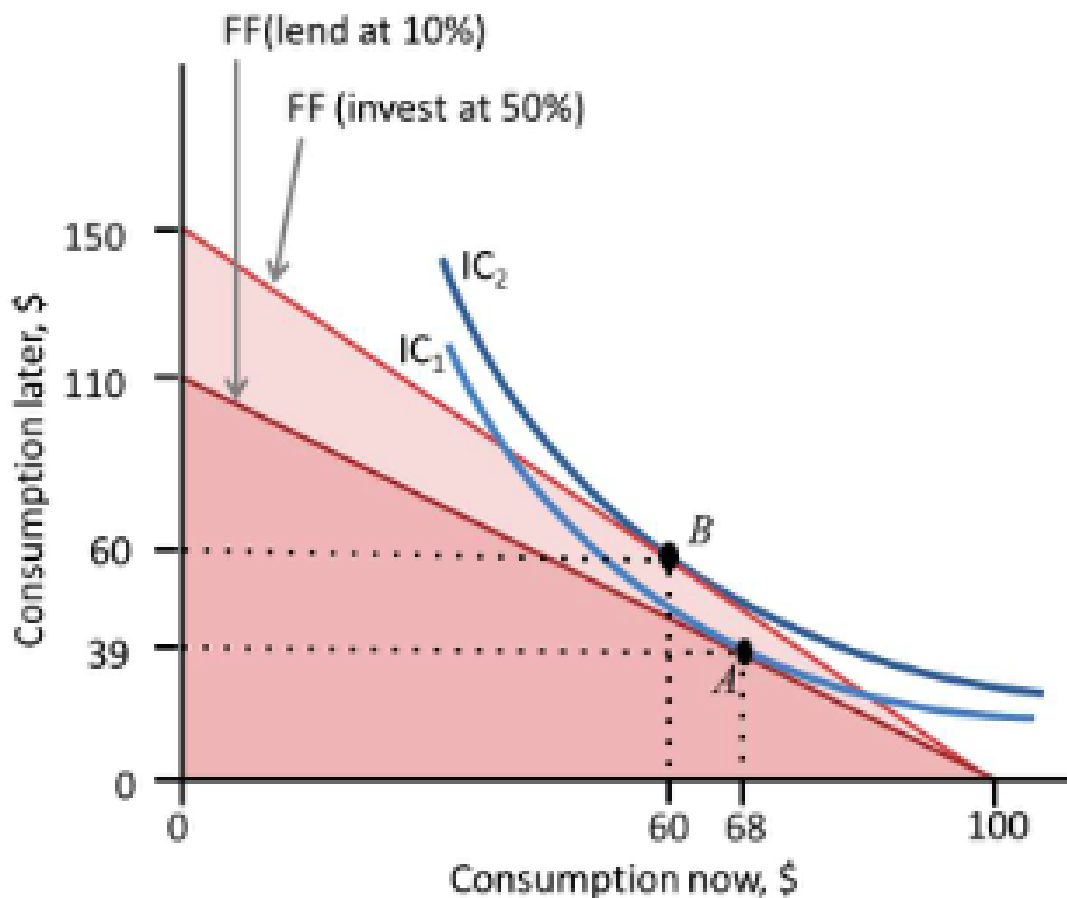
- (B) If the annually compounding interest rate is 5%, then the total present value (in Year 0) of receiving £100 at the end of Year 1 and £100 at the end of Year 2 is £185.94.
- (C) £95 today is worth the same as £100 in one year's time if the interest rate is 5%.
- (D) If you pay £96 for an investment that pays £100 in one year's time when the interest rate is 5%, then your net present value is £0.76.

- ⑤ (OUP-U10-Q23) The following is a simplified balance sheet of a commercial bank. Based on this information, which of the following statements is correct?

Assets		Liabilities	
Cash and reserves	£4m	Deposits	£54m
Financial assets	£30m	Secured borrowing	£36m
Loans to other banks	£12m	Unsecured borrowing	£24m
Loans to households and firms	£60m		
Fixed assets	£14m		
Total assets	£120m	Total liabilities	£114m

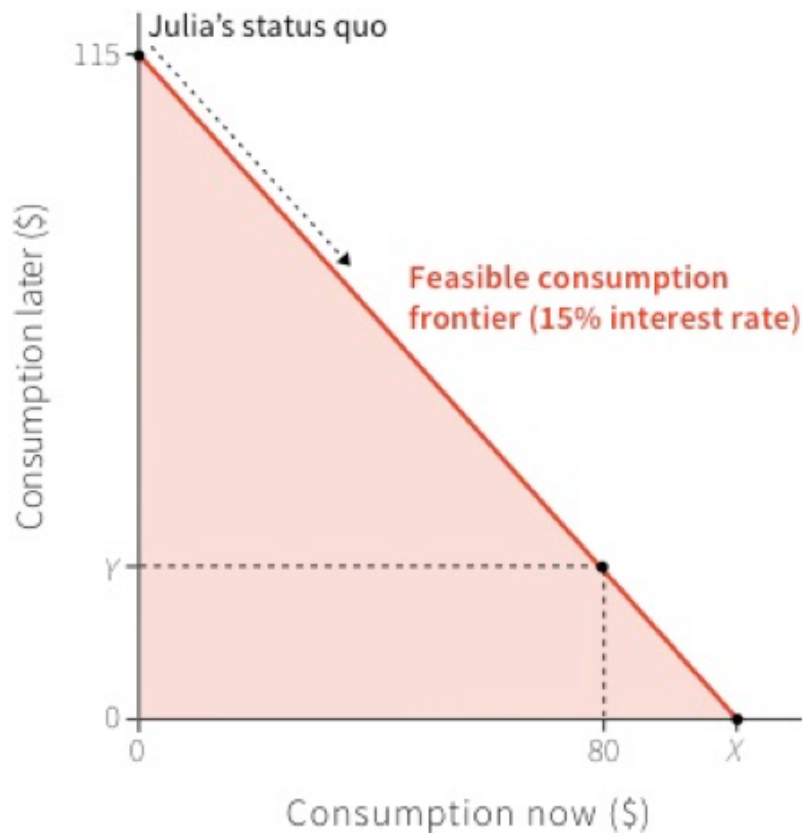
- (A) £34 million of the assets are owned by the bank.
- (B) The value of the bank's equity is £120 million.
- (C) The bank's leverage ratio is 95.
- (D) A fall of over 5% in the asset value would make the bank insolvent.

- ⑥ (OUP-U10-Q12) The diagram depicts Marco's choice of consumptions in periods 1 and 2. He has \$100 worth of grain in period 1 and no income in period 2. Marco has two choices. In scheme 1, he can sell the grain that he does not consume and lend the money at 10%. In scheme 2, he can invest the grain that he does not consume (e.g. planting as seed) for a return of 50%. Which of the following statements is correct?



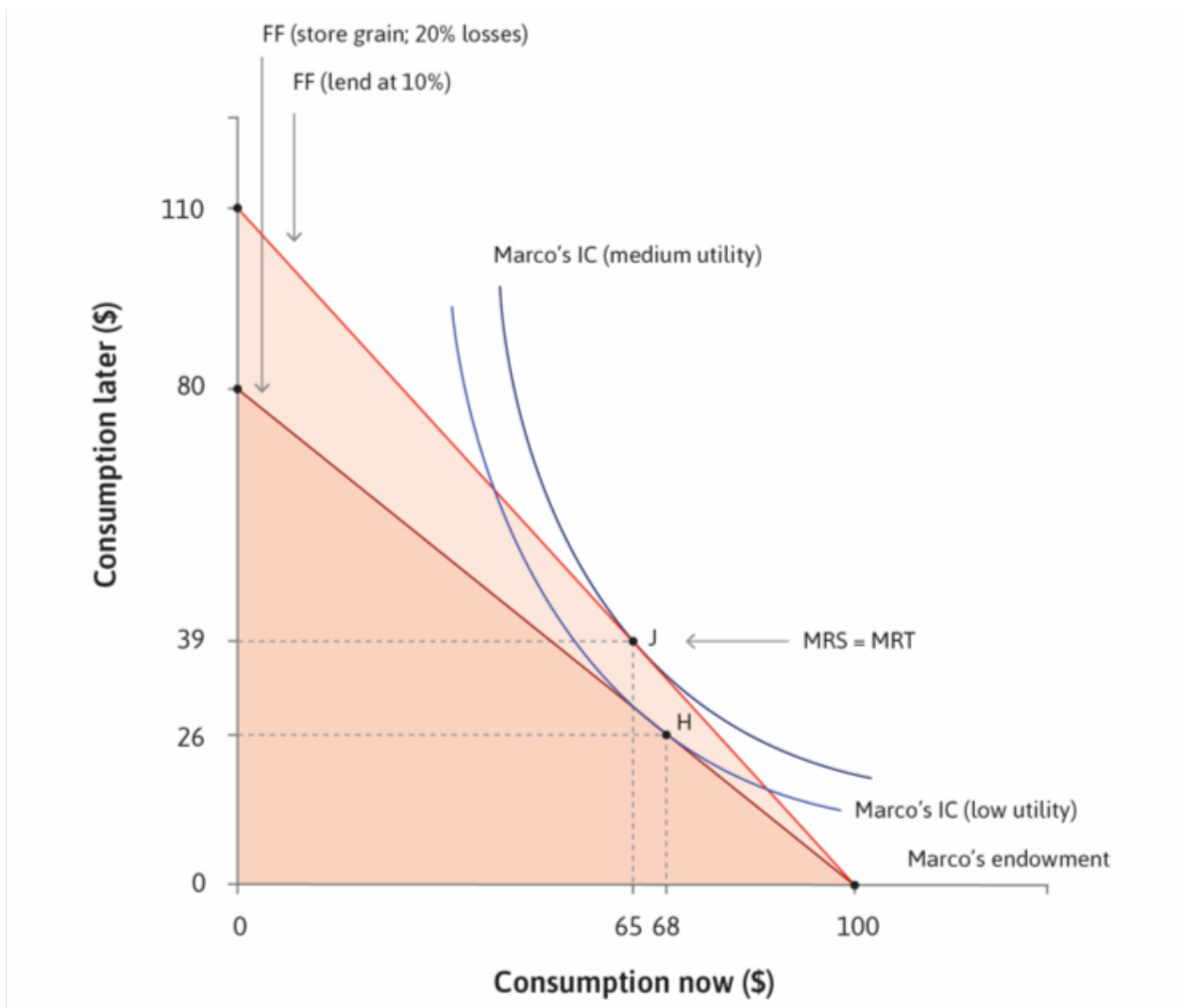
- (A) Marco is less impatient at B than at A.
- (B) Going from scheme 1 to scheme 2, the substitution and income effects have opposite effects on period 2 consumption.
- (C) Marco can do better than consumption choice B by investing all of his grain and consuming the output in period 2.
- (D) Marco can do better than consumption choice B by investing all of his grain and borrowing against his period 2 output.

- ⑦ (TEA-U10-Q2) The following diagram depicts Julia's choice of consumption now and consumption later (next period). She has no income now and an income of \$115 later. The current interest rate is 15%. Based on this information, which of the following statements is correct?



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- (A) The maximum that Julia can borrow to spend now is \$91.
  - (B) If Julia borrows \$80 to spend now, she will have \$23 to spend later.
  - (C) The consumption choice of \$60 now and \$50 later is a feasible option.
  - (D) The feasible set will be smaller when the interest rate is 10%.

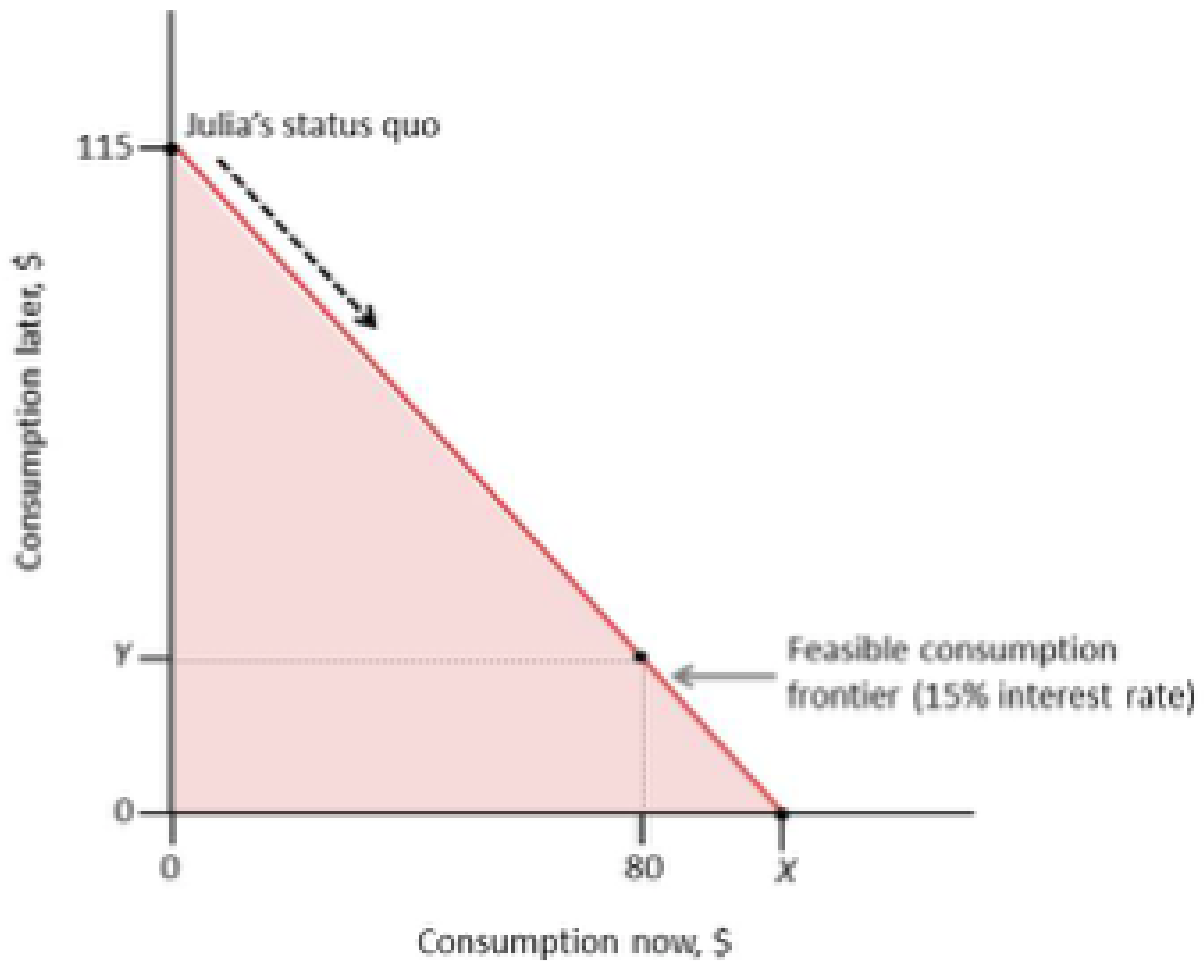
⑧ (TEA-U10-Q5) The diagram depicts Marco's choice of consumptions now and later (next period). He has \$100 worth of grain now and no income later. Marco has two choices. In scheme 1, he can store the grain that he does not consume now. This results in a loss of 20% of the grain due to pests and rotting. In scheme 2, he can sell the grain that he does not consume and lend the money at 10%. Based on this information, which of the following statements is correct?



- (A) The substitution effect implies that Marco will consume more now under scheme 2 than under scheme 1.
- (B) The income effect implies that Marco will consume more later and less now under scheme 2 than under scheme 1.
- (C) Marco will unambiguously consume more later under scheme 2 than in scheme 1.
- (D) Marco will unambiguously consume less now under scheme 2 than in scheme 1.

⑨ (UCL-S16-Q6) The following diagram depicts Julia's choice of consumption in periods 1 and 2. She has no income in period 1 and

an income of \$115 in period 2. The current interest rate is 15%. Based on this information, which of the following statements is correct?



- 
- (A) The maximum that Julia can borrow to spend in period 1 is \$91.
- (B) If Julia borrows \$80 to spend in period 1, she will have \$23 to spend in period 2.
- (C) The consumption choice of \$60 in period 1 and \$50 in period 2 is a feasible option.

⑩ (UCL-S17-Q13) Which of the following statements about liquidity and solvency is/are true? \_\_\_\_\_

- (A) The relevant items on the balance sheet to assess solvency are total liabilities and total assets.



- (B) Allowing banks to borrow from the central bank at a penalty rate of interest can deal with a bank's solvency but not liquidity problem.
- (C) If a bank admits that many of its loans are 'non-performing' and unlikely to be repaid, this increases its liabilities.