FIN 301 Financial Management
Practice Questions for Midterm 3 – Version B Appended

1. SAGE Publishing Company has a large machine they would like to sell. The machine was purchased for $800,000 six years ago. It had a class life of eight years and was being straight-line depreciated (no half-year convention) to a salvage value of zero. If the tax rate is 38%, and the machine is sold for $250,000, what is the after-tax cash flow?

MV MV BV

250,000 − (250,000 − 200,000)(.38)

= 231,000

a) $ 155,000
b) $ 124,000
c) $ 231,000
d) $ 95,000
e) $ 76,000

Depr = (800,000/8) = 100,000 per yr.

Acc. Dep. = 6 x 100,000 = 600,000 so BV = 800k − 600k = 200k

2. A firm needs to raise $250 million for a project. If external financing is used, the firm faces flotation costs of 15% for equity and 4% for debt. If the project is to be financed 70% with equity and 30% with debt, how much cash must the firm raise in order to finance the project?

$f_A = .7(.15) + .3(.04) = .117$

a) $220.8 million
b) $223.8 million
c) $250.0 million
d) $279.3 million
e) $283.1 million

$$\frac{250{,}000}{(1-.117)} = 283{,}125.7078$$

3. Given the financial manager's preference for faster receipt of cash flows,

a) a longer depreciable life is preferred to a shorter one.
b) a shorter depreciable life is preferred to a longer one.
c) the manager is not concerned with depreciable lives, because depreciation is a non-cash expense.
d) the manager is not concerned with depreciable lives, because once purchased, depreciation is considered a sunk cost.
e) More than one of the above are true

4. You are advising a friend who is attempting to decide whether or not to drop one of the courses they are currently enrolled in. If they drop, they will forfeit the money spent on tuition. Which of the following regarding the drop decision is inconsistent with capital budgeting principles?

I. Remaining in the class means you must give up your part-time job.
II. The tuition cost for the class was outrageous, \$2,000 per credit hour.
III. If you drop the class, you can sell the textbook now for \$30 at the bookstore.

a) I only
b) II only
c) I and III only
d) II and III only
e) I, II, and III

5. Spacely Sprockets Inc. is evaluating the purchase of a new sprocket fabricating machine to replace their old one. The new machine costs \$1,000,000 and will be straight-line depreciated (no half-year convention) to zero over a six-year class life. The new machine increases annual sales by \$275,000. Variable costs are 67% of sales and incremental fixed costs are \$8,750 annually. The old machine originally cost \$875,000 four years ago and is being straight-line depreciated (no half-year convention) over a ten year class life to zero. Spacely will borrow to purchase the new machine, incurring annual after-tax interest expense of \$57,575. If the tax rate is 42%, what is the sprocket machine's annual after-tax operating cash flow?

a) \$ 80,810
b) \$ 23,235
c) \$138,385
d) \$ 80,357
e) \$ 22,782

sales $275{,}000(1-.42)$
exp. $-\left[(.67)(275{,}000)+8750\right](1-.42)$
depr (new) $(1{,}000{,}000 \div 6)(.42)$
depr (old) $-(875{,}000 \div 10)(.42)$

80,810

6. Under MACRS, an asset which originally cost \$100,000, incurred installation costs of \$10,000, and has an estimated salvage value of \$25,000, is being depreciated using a 5-year class life. What is the depreciation expense in year 1? (See the formula sheet for MACRS table.)

a) \$15,000
b) \$12,750
c) \$11,250
d) \$22,000
e) Cannot be answered without knowing the firm's WMCC.

see table

$110{,}000 \times .2 = 22{,}000$

7. One year ago, your business bought a machine for $20,000. The machine has a 3-year MACRS class life. One year of depreciation has been claimed. Today, the machine could be sold for $26,000. Your company's marginal tax rate is 34%. The total tax liability resulting from the sale of the machine would be

a) $2,040 tax saved
b) $4,284 tax saved
c) $2,040 tax owed
d) $4,284 tax owed
e) $8,840 tax owed

$(MV - BV)(T)$

$\underbrace{(26{,}000 - 13{,}400)}_{gain}(.34) = 4284$

BV (67% has not been depreciated), so $= .67(20{,}000) = 13400$ see table

8. Your company is considering a project that requires an initial investment of $12 million. The target D/E ratio is 1.25. Flotation costs for equity are 10% and flotation costs for debt are 3%. What is the true cost (in dollars) of the project when you consider flotation costs?

a) $11.268 million
b) $11.310 million
c) $12.732 million
d) $12.781 million
e) $13.068 million

$W_D = \frac{1.25}{2.25} \quad W_e = \frac{1}{2.25}$

$f_A = \left(\frac{1.25}{2.25}\right)(.03) + \left(\frac{1}{2.25}\right)(.10) = .06\overline{11}$

$\frac{12{,}000{,}000}{(1-.06\overline{11})} = 12{,}781{,}065.09$

9. Which of the following statements completions is ***incorrect***? For a profitable firm, when MACRS accelerated depreciation is compared to straight-line depreciation, MACRS accelerated allowances produce

a) higher depreciation charges in the early years of an asset's life.
b) larger cash flows in the earlier years of an asset's life.
c) larger total undiscounted profits from the project over the project's entire life.
d) smaller accounting profits in the early years, assuming the company uses the same depreciation method for tax and book purposes.
e) None of the above. (All of the above are correct.)

10. The president of Dex-Tor Laboratories Inc. has asked you to evaluate the proposed acquisition of a new computer. The computer's price is $40,000, and it falls into the MACRS 3-year class. Purchase of the computer would require an increase in net working capital of $2,000. The computer would increase the firm's before-tax revenues by $20,000 per year but would also increase before-tax operating costs by $5,000 per year. The computer is expected to be used for 3 years and then be sold for $25,000. The firm's marginal tax rate is 40 percent, and the firm's weighted marginal cost of capital (WACC) is 14 percent. What is the operating cash flow in Year 2?

a) $9,000
b) $10,240
c) $11,687
d) $13,453
e) $16,200

sales	$20{,}000(1-.4)$
− costs	$5{,}000(1-.4)$
+ dep (new)	$40{,}000(.45)(.4)$ see table
	$16{,}200$

Use the following information to answers questions 11-12:

sunk

Pliable Plywood Corporation (PPC) is considering the purchase of new saws. The saws themselves would cost $18,500. However, PPC has already paid $1,000 (nonrefundable) as a downpayment. This leaves them a balance of $17,500 to be paid if they buy the saws. Additionally, freight costs to deliver the saws will be $2,500. $5,000 of additional inventory will be needed and accounts payable will increase by $2,250. Depreciation for tax purposes is $5,250 per year, and book value is zero at the end of 4 years. PPC expects the new saws to increase annual revenues and cash expenses by $12,000 and $5,000, respectively. PPC's marginal tax rate is 34 percent.

11. PPC's initial cash outlay at time zero is

a) $25,000
b) $22,750
c) $22,500
d) $23,750
e) $20,000

20,000 = (17,500 + 2500) ← asset cost

2,750 = (5000 − 2250) ← ΔNWC

22,750

12. If the saws can be sold at the end of 4 years for $5,000, the terminal (non-operating) cash flow for this project would be

a) $6,050
b) $5,115
c) $5,000
d) $3,300
e) $1,700

Recapture of NWC 2750

ATCF 5000 − (5000 − 0)(.34) = 3300

6050

13. Which of the following statements is correct?

a) An asset that is sold for less than book value at the end of a project's life will generate a loss for the firm and will cause an actual cash outflow attributable to the project.
b) Only incremental cash flows are relevant in project analysis and the proper incremental cash flows are the reported accounting profits because they form the true basis for investor and managerial decisions.
c) Equipment sold for more than its book value at the end of a project's life will increase income and, despite increasing taxes, will generate a greater cash flow than if the same asset is sold at book value.
d) All of the above statements are false.
e) Only (b) and (c) are correct.