EUROPEAN UNION
European Structural and Investment Funds
Operational Programme Research,
Development and Education

MINISTRY OF EDUCATION,
YOUTH AND SPORTS

Credit test KFU/AMUC

Variant XX/2020

Fill in:

Name and Surname: Student number:

Will be filled in by the tutor:

Credit: YES - NO

Evaluation: max. 100 points, min. 51 points to pass the test.

(grade 1 = 91-100 points, grade 2 = 71-90 points, grade 3 = 51-70 points, grade 4 = 50-0 points)

Working time: 45 min.

1) Example (30 points):

Assume that a company selling wine punch in Liberec market estimates product demand for its special Christmas wine punch for a particular period to be:

Choice	Demand
1	16 000 units at 25 CZK per unit
2	14 000 units at 30 CZK per unit
3	12 000 units at 40 CZK per unit
4	10 000 units at 45 CZK per unit
5	8 000 units at 50 CZK per unit

The company′s fixed costs of 250 000 CZK per year are not affected by the different volume alternatives. Variable costs are 5 CZK per unit.

What price should be set for the product? (Specify contribution margin per unit, total margin and net income or loss per each alternative as visible in the table below. Identify alternative with the greatest contribution.)

Solution:

Choice	Sales price (CZK)	Variable costs (CZK)	Contribution margin per unit (CZK)	Number of units	Total margin (CZK)	Fixed costs (CZK)	Net income (loss) (CZK)
1							
2							
3							
4							
5							

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2) Example (20 points):

Based on the information below, count Q_{BEP} and TC_{BEP}.

Installed capacity	5 000 product units
Currently agreed contract	4 500 product units
Expected sales price per unit	50 CZK
Unit variable costs	25 CZK
Fixed costs	80 000 CZK

Solution:

Natural expression of break even point: **Q_{BEP} =**

Financial expression of break even point: **TC_{BEP} =**

3) Example (30 points):

The company ABC is considering an investment project that requires capital expenditure of 230 000 CZK at the beginning of 20XX.
It is assumed that in individual years, always at the end of the period, the investment will bring the following cash income.

Period	Size of cash income (CZK)
20XX	75 000
20XX+1	75 000
20XX+2	75 000
20XX+3	50 000
20XX+4	25 000

Would you recommend the company to implement this investment project if required profitability is 6 %? Count cash flows in individual years and NPV of the project. Is this project acceptable? If yes, why?

Solution:

NPV =

Project is …

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4) Example (20 points):

Assume Company ABC producing and selling a single product with a variable cost of 184 CZK per unit.
Annual capacity is 10 000 units, and annual fixed costs total 1 104 000 CZK.
The selling price is 460 CZK per unit and production and sales are budgeted at 5 000 units.
Fill in the table - to obtain the budgeted income before taxes.

Solution:

	CZK	**CZK**	**CZK**
Revenue			
Variable costs:			
Direct material costs (92 CZK/unit)			
Labor (23 CZK/unit)			
Overhead (46 CZK/unit)			
Marketing and administrative costs (23 CZK/unit)			
Total variable costs			
Fixed costs:			
Overhead	644 000		
Marketing and administrative costs	460 000		
Total fixed costs		**1 104 000**	
Total costs			
Net income			

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