Linnæus University
Sweden

Cover Sheet for Written Examinations
(Can also be used in the examinations box.)
This sheet should always be submitted.
NB Any loose sheets must always be attached to the examination script

School	
Linneaus University	
Written examination in sub-component course	Examination code
1FE170 Management control and cost accounting, 6 hp	1508
Course / degree programme	
ISM	

Date	Time	Place
2017-01-12	09.00-13.00	CIL

Total number of pages submitted	Examination aids permitted
18 inkl. this one	Aids: only calculator (not in a pda or smartphone) and dictionary provided by the invigilator are allowed.

Miscellaneous

Teacher responsible for examination	Visited examination hall
Damai Nasution	☐ Yes Time ☒ No
Can be reached on the following telephone number	
	Time

Examination coversheet

☐ Yes, coversheet can be distributed (answers should be written on the loose pieces of paper)
☐ No, coversheet cannot be distributed (answers should be written on the question sheet)

NB Name and Swedish civic registration number should be written in ink

Examinee's name	Examinee's number of place
Swedish civic registration number	
Programme / course	

No. of credits	Grade	Teacher code

Instructions
Examination scripts can be handed in at the earliest after 50 minutes after the start of the examination (any late examinees are thereby given the opportunity to participate). Examinees should always bring ID with them.

ID shown	Examination script submitted at (time)	Signature of invigilator
☐ Yes ☐ No		

Instructions:

- Write your answers/calculations on the examination sheet in the spaces provided. Failure to do so will result in zero points.

- If you run short of space, use the backs of pages. Loose pages/sheets will not be subject to examination.

- In all calculations, show clearly how you work out your answer.

- A comma (,) is used as a decimal separator (except for the Present Value Tables in Appendix).

- Total points for this exam are 60 points.

- Grade conversion: A ≥ 90%; B ≥ 80%; C ≥ 70%; D ≥ 65%; E ≥ 60%; F < 60%.
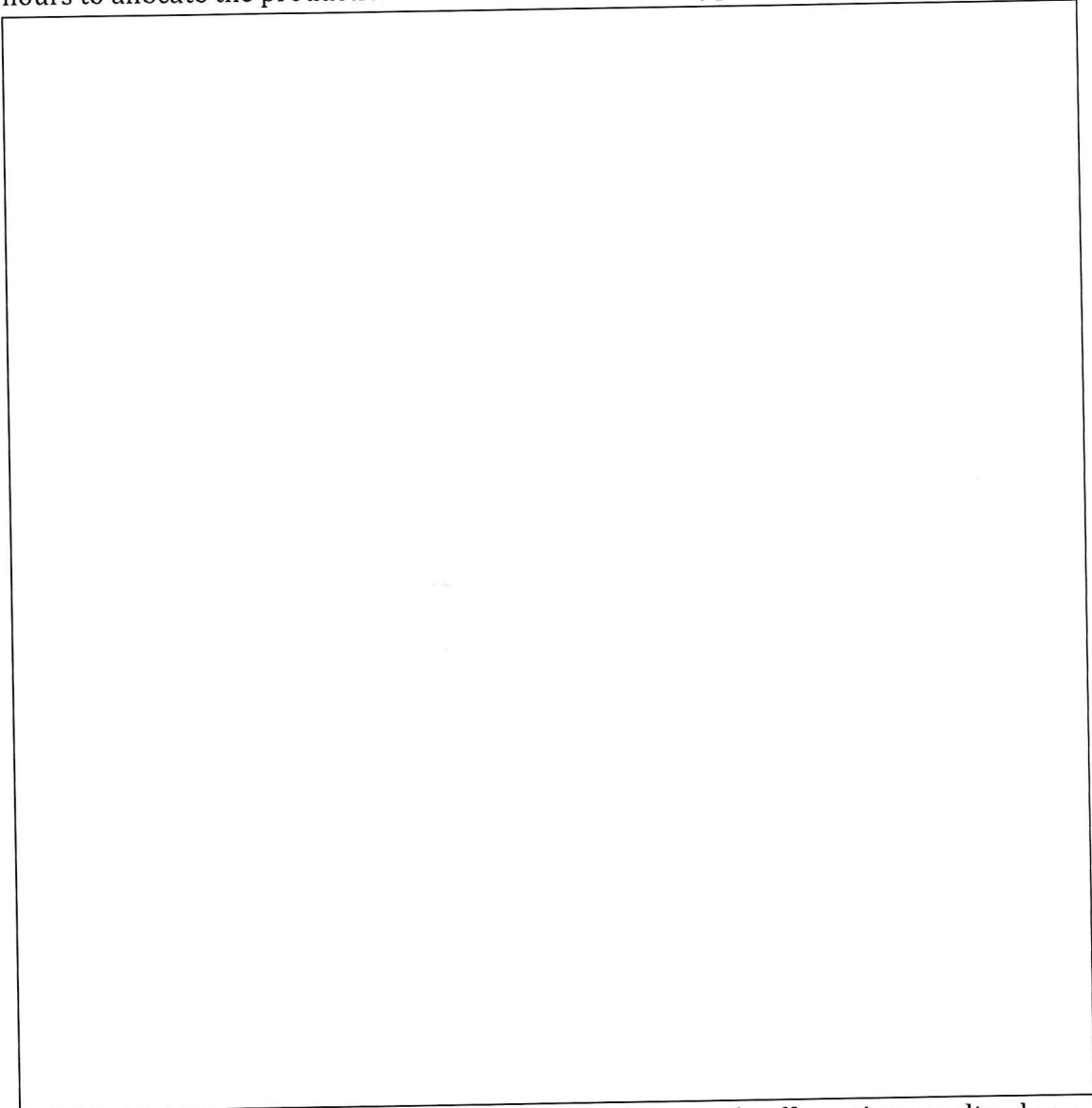
Question 1 (8 points)

Green Coffee, a coffee manufacturer, produces two types of coffee for their end consumer: the Java and the Excelso. Both types of coffee are produced in the same factory. The two types of coffee use different varieties of coffee beans in which the Java uses Arabica coffee beans, and the Excelso uses Robusta. Here is information regarding operation and costs for January 2018:

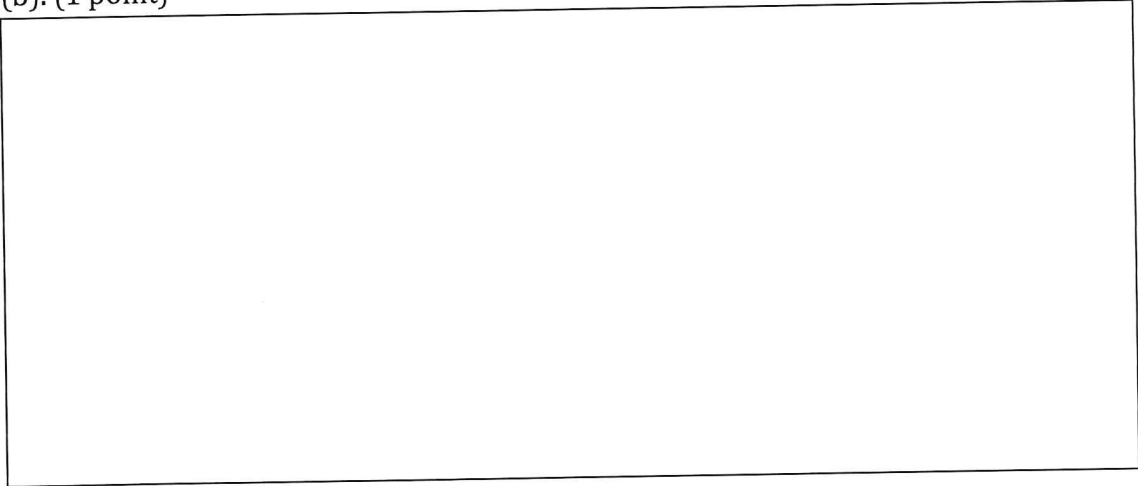|	Java	Excelso	Total
Units produced (kilograms)	20 000	16 000	26 000
Machine hours	4 000 hours	2 500 hours	6 500 hours
Labour hours	3000 hours	2 000 hours	5 000 hours
Production costs (in kronor):			
Direct materials costs	421 800	386 000	549 090
Direct labour costs	70 200	70 000	132 000
Production overhead costs			104 000
Total production costs			771 090

Required:

a. (i) Calculate the production overhead rate, assuming that Green Coffee uses **machine hours** as a basis to calculate that rate and also (ii) calculate how much production overhead costs should be allocated to each type of coffee. (3 points)

b. Calculate **<u>total production cost</u>** for each type of coffee if the company uses machine hours to allocate the production overhead costs to each type of coffee. (4 points)

c. Calculate **total production cost per kg** for each type of coffee using results above (b). (1 point)

Question 2 (19 points)

Ljungby Fisk AB is a wholesale distributor of fresh salmon. The company services restaurants in Stockholm area. Small but steady growth in sales has been achieved by Ljungby Fisk AB over the past few years, while salmon prices have been increasing. The company is formulating its plans for 2018 and has gathered the following information:

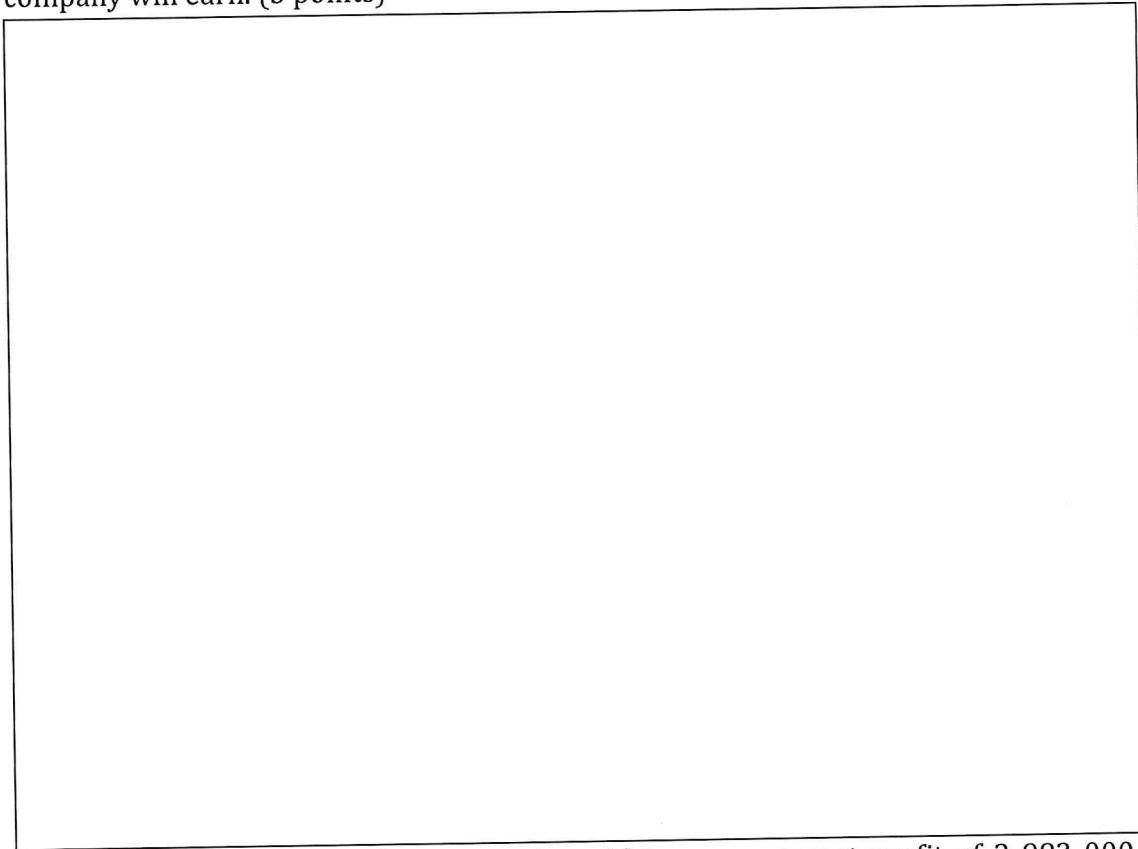|	
Selling price per kilogram	85 kronor
Costs:	
Cost of salmon per kilogram	55 kronor
Shipping expense per kilogram	3 kronor
Sales commissions per kilogram	8 kronor
Rent and salaries per year	4 788 000 kronor

The company expects to be able to sell 420 000 kilograms of salmon in 2018.
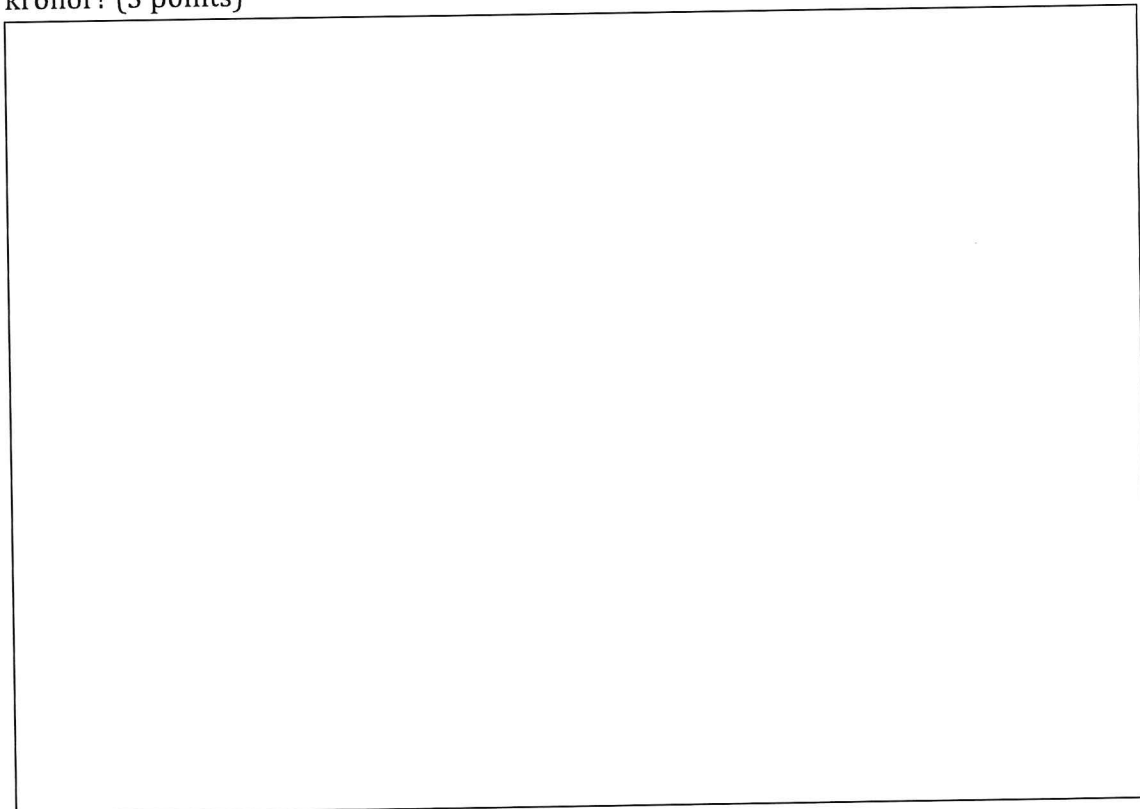
Required:

Note: before you answer the questions below; you need to identify which cost that should be classified as variable and fixed costs, so you know how much the total variable cost is and how much total fixed cost is.

a. What are the break-even point in kilograms sold and the break-even point in revenues? (5 points)

b. If the expected annual sales volume is reached, calculate how much profit the company will earn. (3 points)

c. How many kilograms of salmon must be sold to earn a target profit of 2 983 000 kronor? (3 points)

d. Suppose that Ljungby Fisk AB considers raising the selling price. The company is aware that if it raises the selling price, then the expected sales will drop. There are two alternative plans (A and B) that a company can choose and each plan has a different effect on the expected sales:

	Plan A	Plan B
Selling price	89 kronor	91 kronor
Expected sales	395 000 kilograms	360 000 kilograms

Based on the information above, should the company raises the selling price? Why? If it should so, which plan the company has to choose (Plan A or B)? Why! (8 points)
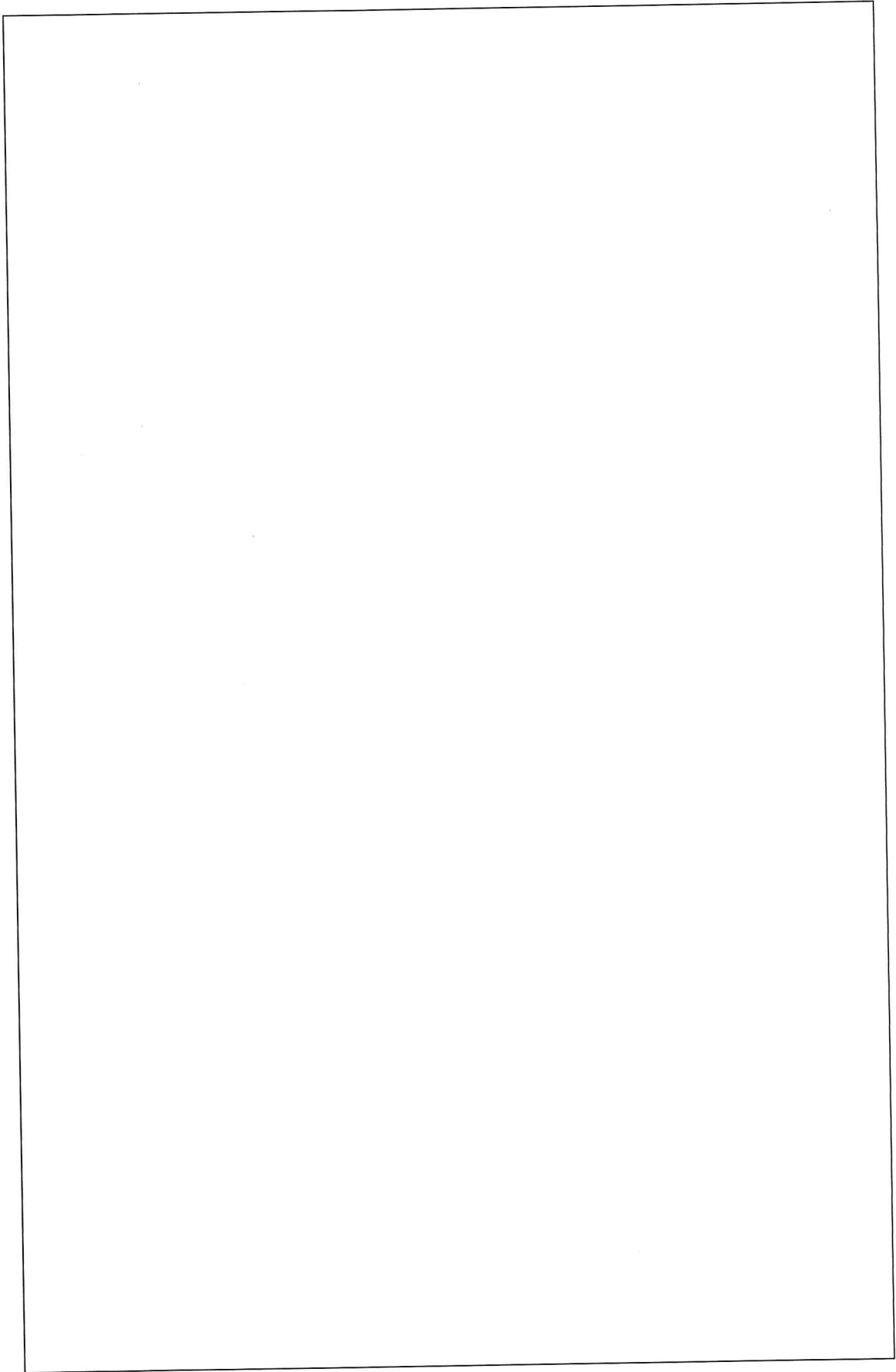
Question 3 (12 points)

The capital investment committee of Linne AB is currently reviewing two investment proposals (Alpha and Beta). Proposal Alpha requires 850 000 kronor, and Proposal Beta requires 900 000 kronor. The two proposals are expected to have the similar useful life that is five years, and no residual value is expected. Furthermore, the two proposals have similar an 11 percent cost of capital and are viewed as equally risky. Because Linne AB has limited funds, only one proposal will be selected. Here is information regarding the proposals
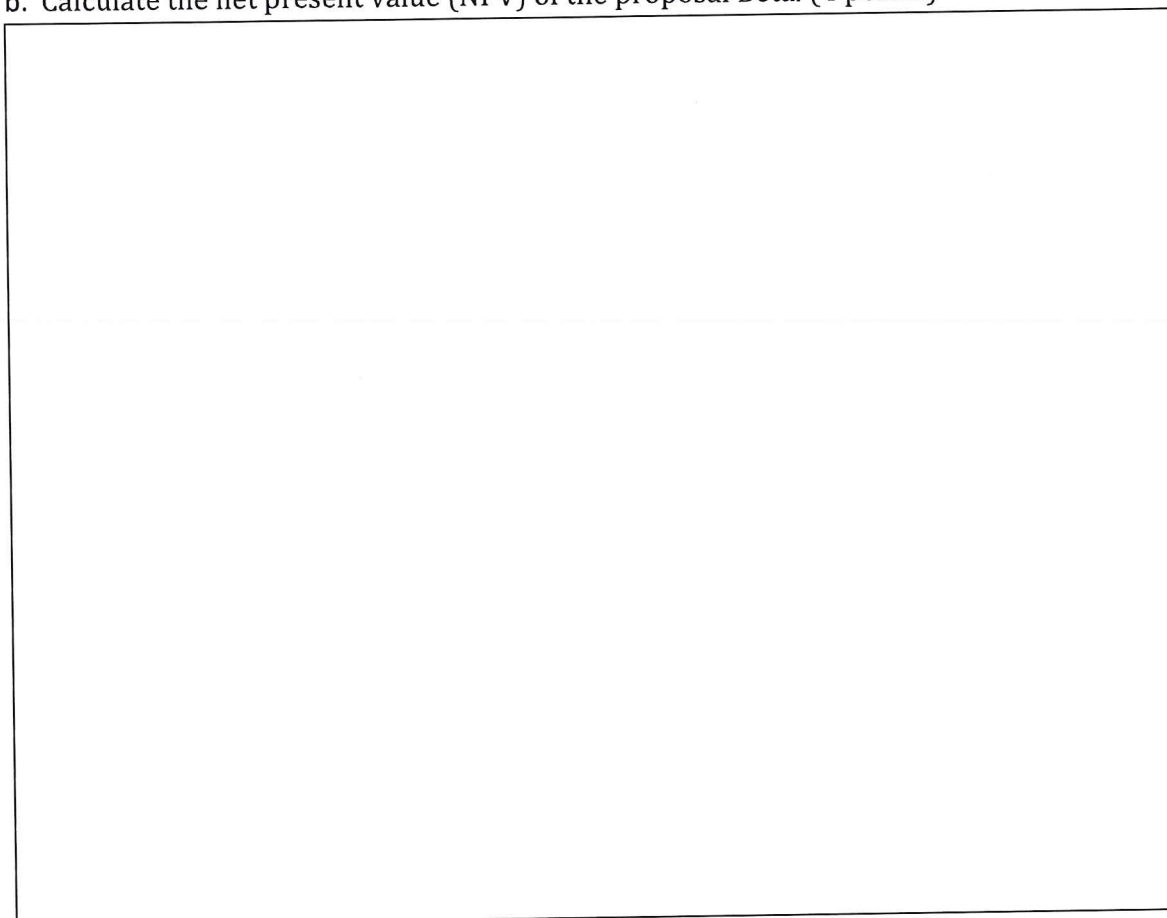
Year	Proposal Alpha Cash Inflows (in kronor)	Proposal Beta Cash Inflows (in kronor)
1	220 000	290 000
2	250 000	260 000
3	260 000	240 000
4	240 000	250 000
5	270 000	250 000

Note: the present value table is available in the appendix (on the last page of this exam).

Required:

a. Calculate the net present value (NPV) of the proposal Alpha. (4 points)
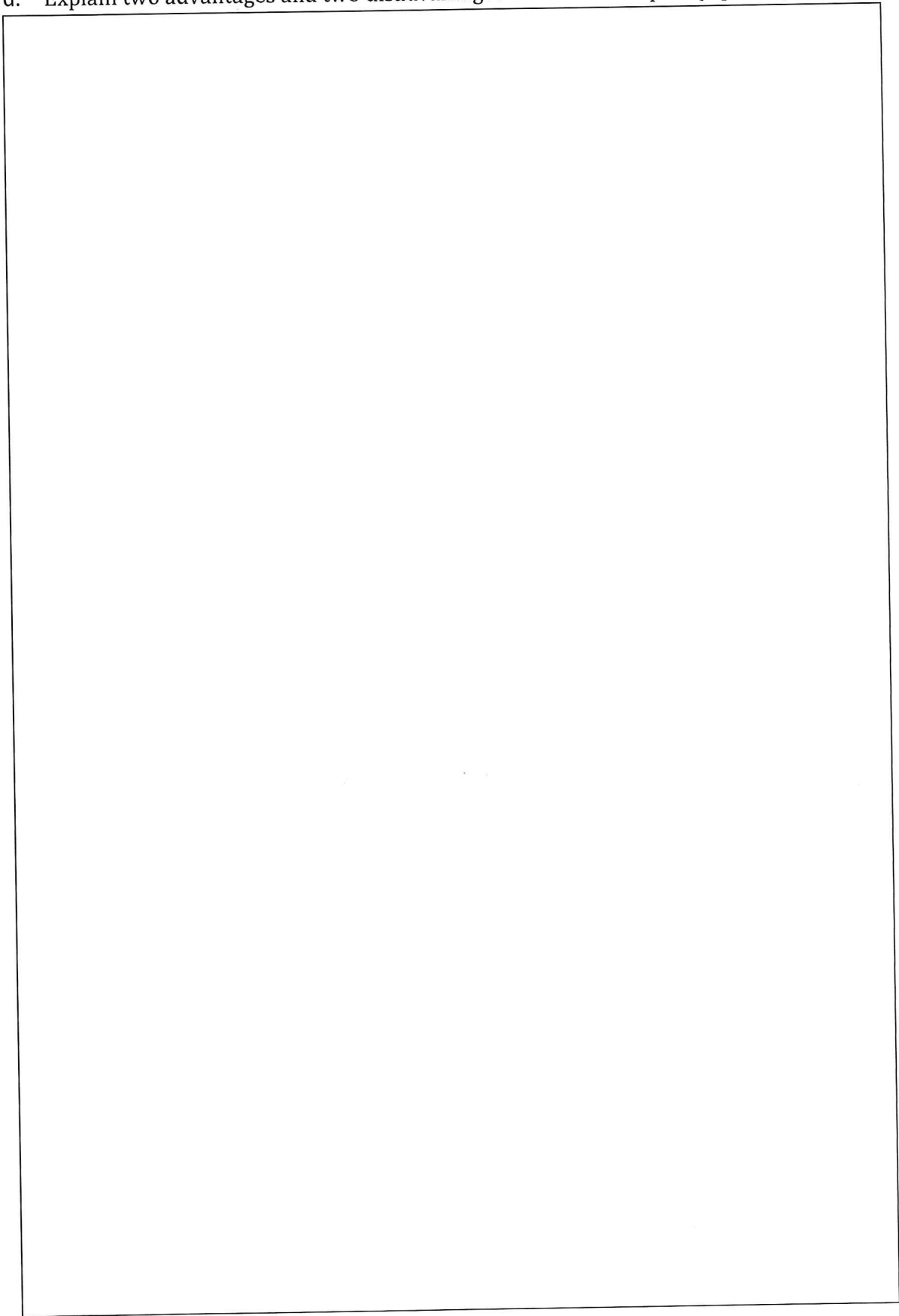
b. Calculate the net present value (NPV) of the proposal Beta. (4 points)

c. Prepare a summary for the capital investment committee, advising it on the relative merits of the two investment proposals. (2 points)

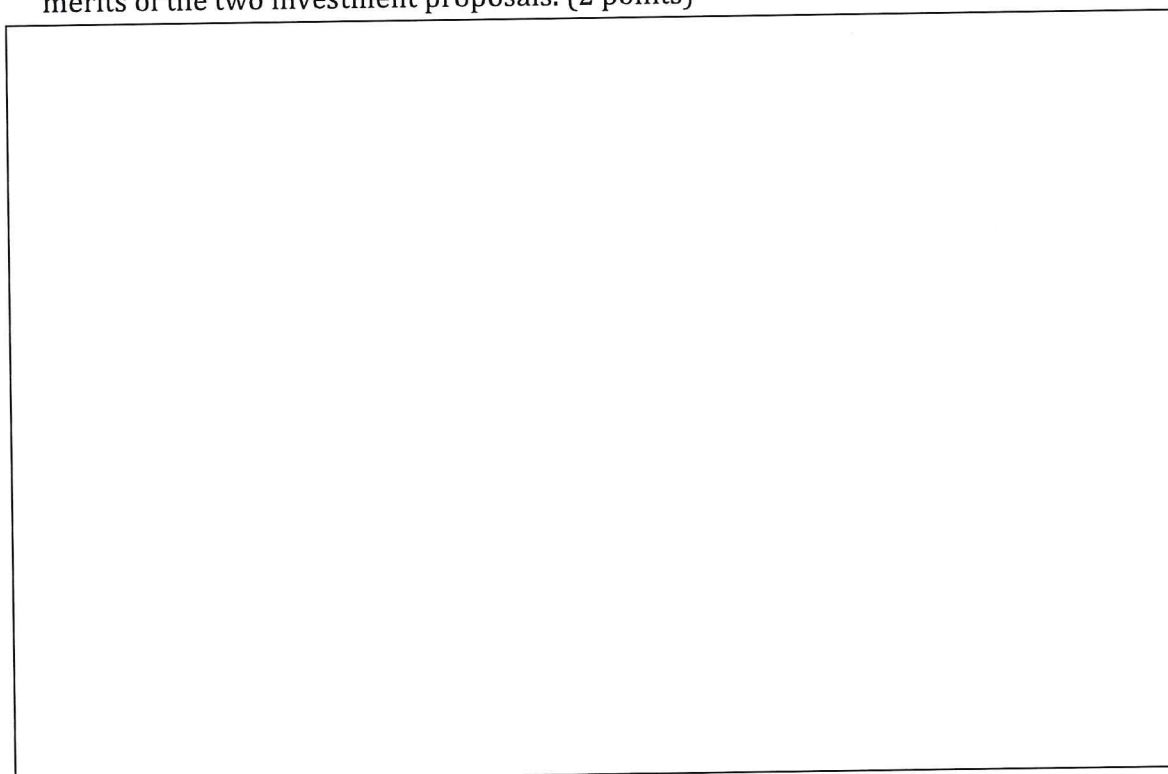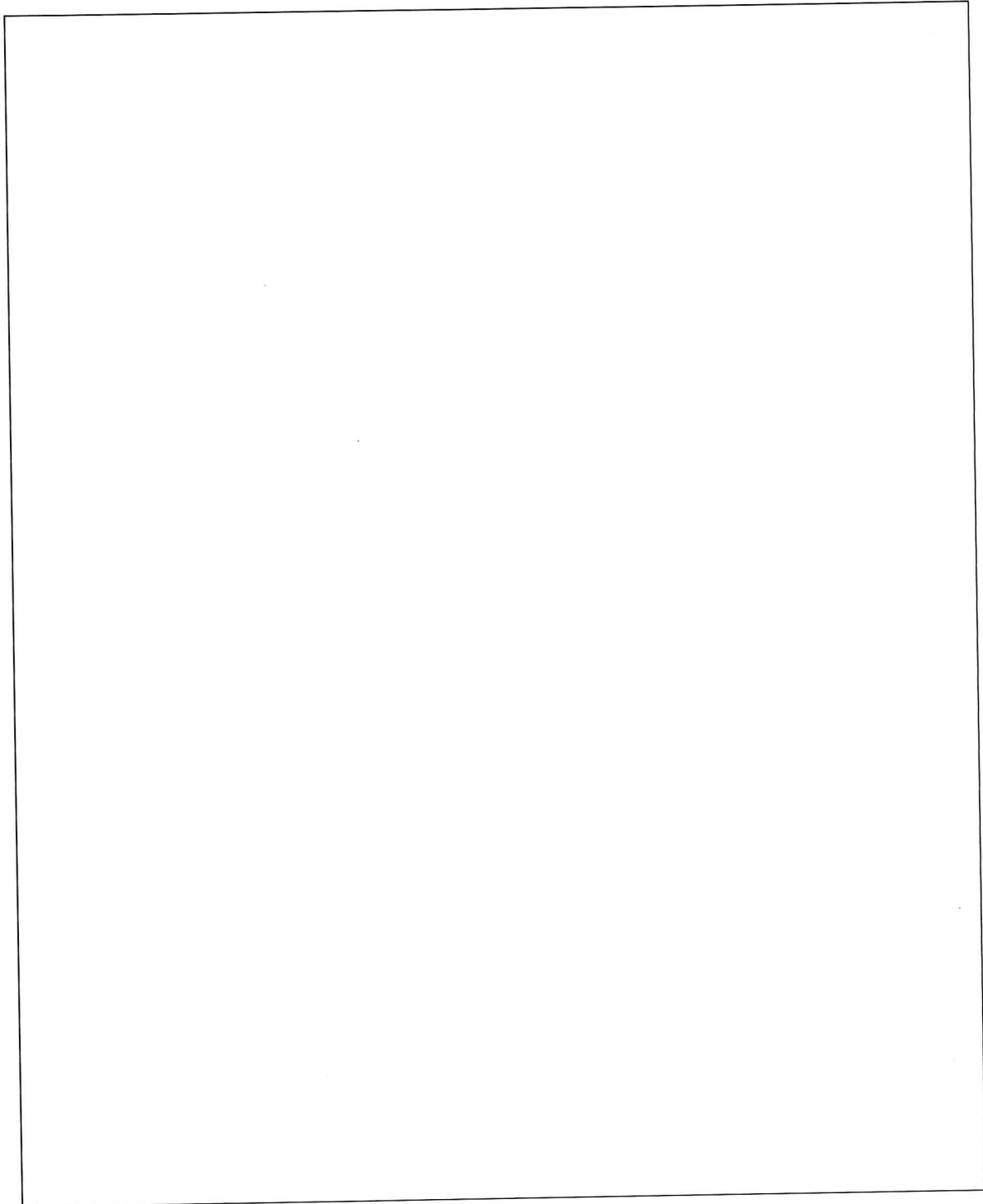d. Explain two advantages and two disadvantages of NPV techniques (2 points)
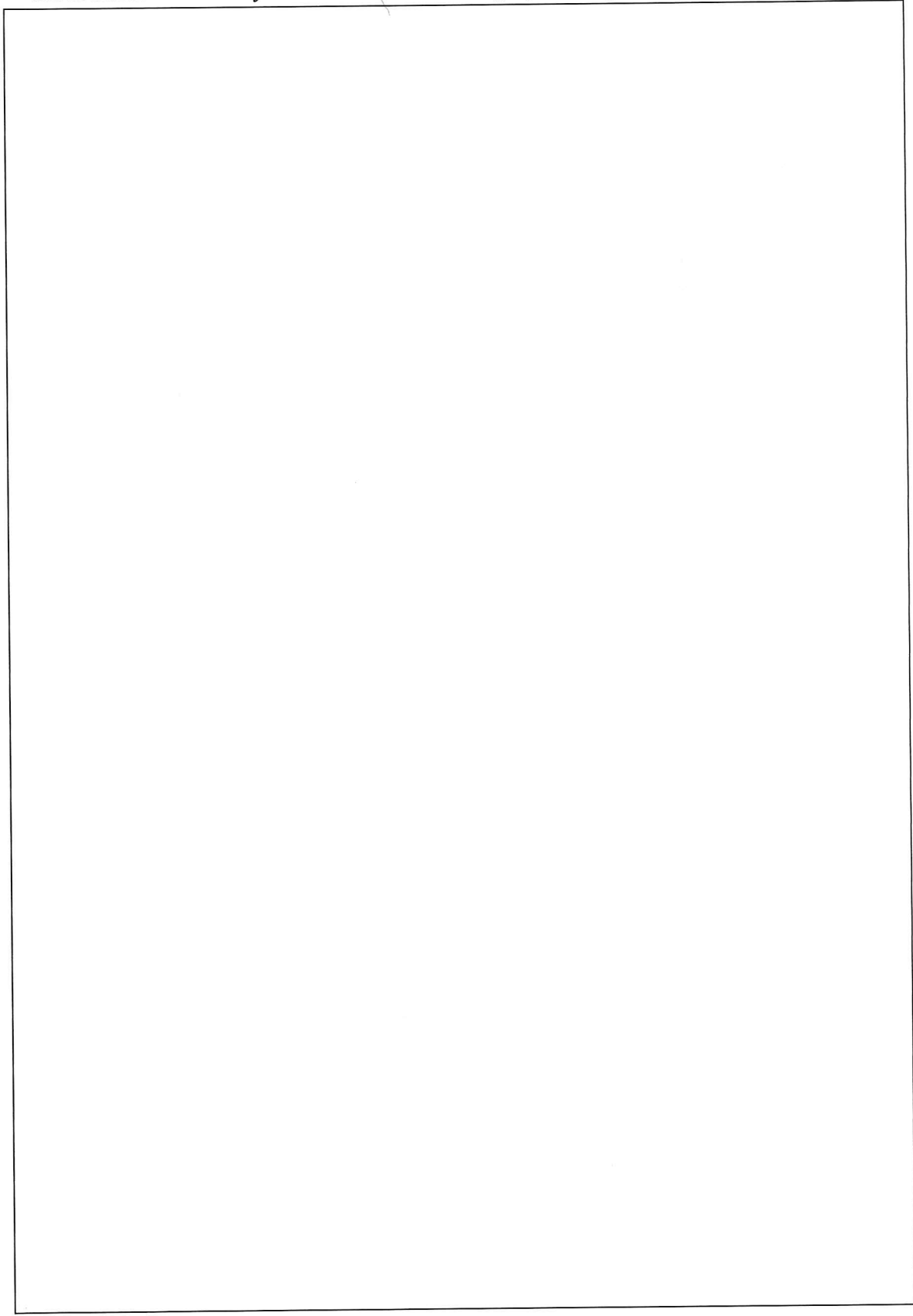
Question 4 (6 points)

According to Gowthorpe (2008), a budget is a plan that is expressed in financial/quantitative terms and extending forward for a period in the future. While a budget is expressed in quantitative terms; however, the process of setting or developing a budget and the budget targets be set up could affect employees' motivation.

a. Explain five criteria for setting up good budget targets (hint: SMART). (3 points)
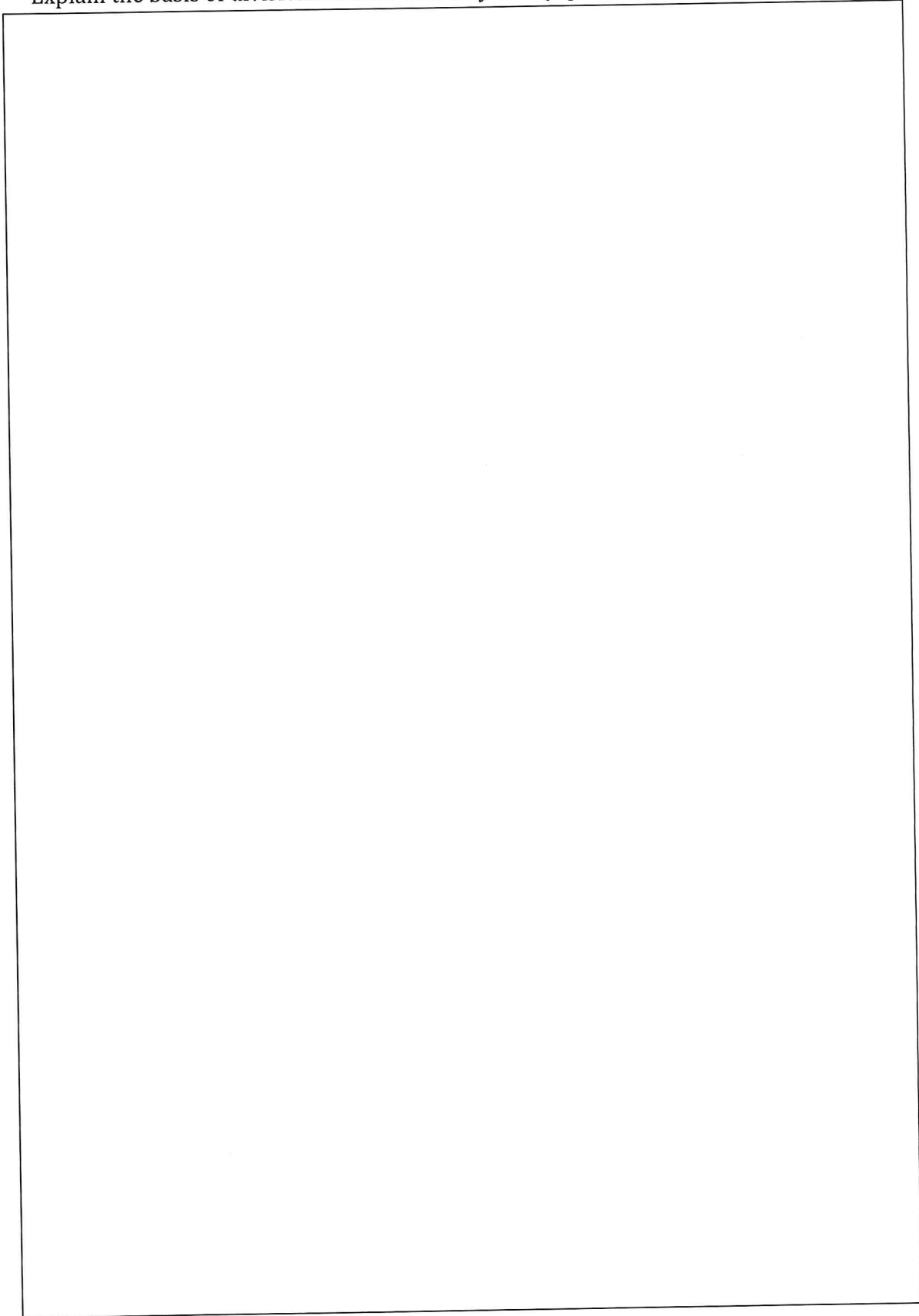
b. Explain the relationship between the level of budget difficulty and employees' motivation. Elaborate your answers and use a graph to explain your points! (3 points)

Question 5 (6 points)

a. Explain why companies/corporations choose to decentralise its business through divisionalisation and what the benefits for the companies by doing so. (3 points)

b. Mondelēz International and Yum use divisionalisation to organise their businesses. Explain the basis of divisionalisation that they use. (3 points)

Question 6 (9 points)

The handball division of Mikasa Sports manufactures and sells baseballs. Assume production equals sales. Budgeted data for January 2018 are as follows:

Current assets	20 000 000	Kronor
Fixed assets	40 000 000	kronor
Production output	300 000	Handballs per month
Selling price	194	Kronor per handball
Variable cost	80	Kronor per handball
Fixed costs	15 200 000	Kronor per month

Required:

a. Calculate the ROI of the handball division using two separate components (ROI = profitability x assets turnover). (5 points) *Hint: Sales = Revenues*

b. If you were the manager of the handball division, explain the possible ways that you can do to increase your division ROI. Elaborate your answers! (4 points)

Present Value Tables

APPENDIX TABLE 1

Discount factors: Present value of $1 to be received after t years $= 1/(1 + r)^t$.

Number of Years	Interest Rate per Year														
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
1	.990	.980	.971	.962	.952	.943	.935	.926	.917	.909	.901	.893	.885	.877	.870
2	.980	.961	.943	.925	.907	.890	.873	.857	.842	.826	.812	.797	.783	.769	.756
3	.971	.942	.915	.889	.864	.840	.816	.794	.772	.751	.731	.712	.693	.675	.658
4	.961	.924	.888	.855	.823	.792	.763	.735	.708	.683	.659	.636	.613	.592	.572
5	.951	.906	.863	.822	.784	.747	.713	.681	.650	.621	.593	.567	.543	.519	.497
6	.942	.888	.837	.790	.746	.705	.666	.630	.596	.564	.535	.507	.480	.456	.432
7	.933	.871	.813	.760	.711	.665	.623	.583	.547	.513	.482	.452	.425	.400	.376
8	.923	.853	.789	.731	.677	.627	.582	.540	.502	.467	.434	.404	.376	.351	.327
9	.914	.837	.766	.703	.645	.592	.544	.500	.460	.424	.391	.361	.333	.308	.284
10	.905	.820	.744	.676	.614	.558	.508	.463	.422	.386	.352	.322	.295	.270	.247
11	.896	.804	.722	.650	.585	.527	.475	.429	.388	.350	.317	.287	.261	.237	.215
12	.887	.788	.701	.625	.557	.497	.444	.397	.356	.319	.286	.257	.231	.208	.187
13	.879	.773	.681	.601	.530	.469	.415	.368	.326	.290	.258	.229	.204	.182	.163
14	.870	.758	.661	.577	.505	.442	.388	.340	.299	.263	.232	.205	.181	.160	.141
15	.861	.743	.642	.555	.481	.417	.362	.315	.275	.239	.209	.183	.160	.140	.123
16	.853	.728	.623	.534	.458	.394	.339	.292	.252	.218	.188	.163	.141	.123	.107
17	.844	.714	.605	.513	.436	.371	.317	.270	.231	.198	.170	.146	.125	.108	.093
18	.836	.700	.587	.494	.416	.350	.296	.250	.212	.180	.153	.130	.111	.095	.081
19	.828	.686	.570	.475	.396	.331	.277	.232	.194	.164	.138	.116	.098	.083	.070
20	.820	.673	.554	.456	.377	.312	.258	.215	.178	.149	.124	.104	.087	.073	.061

Number of Years	Interest Rate per Year														
	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%	29%	30%
1	.862	.855	.847	.840	.833	.826	.820	.813	.806	.800	.794	.787	.781	.775	.769
2	.743	.731	.718	.706	.694	.683	.672	.661	.650	.640	.630	.620	.610	.601	.592
3	.641	.624	.609	.593	.579	.564	.551	.537	.524	.512	.500	.488	.477	.466	.455
4	.552	.534	.516	.499	.482	.467	.451	.437	.423	.410	.397	.384	.373	.361	.350
5	.476	.456	.437	.419	.402	.386	.370	.355	.341	.328	.315	.303	.291	.280	.269
6	.410	.390	.370	.352	.335	.319	.303	.289	.275	.262	.250	.238	.227	.217	.207
7	.354	.333	.314	.296	.279	.263	.249	.235	.222	.210	.198	.188	.178	.168	.159
8	.305	.285	.266	.249	.233	.218	.204	.191	.179	.168	.157	.148	.139	.130	.123
9	.263	.243	.225	.209	.194	.180	.167	.155	.144	.134	.125	.116	.108	.101	.094
10	.227	.208	.191	.176	.162	.149	.137	.126	.116	.107	.099	.092	.085	.078	.073
11	.195	.178	.162	.148	.135	.123	.112	.103	.094	.086	.079	.072	.066	.061	.056
12	.168	.152	.137	.124	.112	.102	.092	.083	.076	.069	.062	.057	.052	.047	.043
13	.145	.130	.116	.104	.093	.084	.075	.068	.061	.055	.050	.045	.040	.037	.033
14	.125	.111	.099	.088	.078	.069	.062	.055	.049	.044	.039	.035	.032	.028	.025
15	.108	.095	.084	.074	.065	.057	.051	.045	.040	.035	.031	.028	.025	.022	.020
16	.093	.081	.071	.062	.054	.047	.042	.036	.032	.028	.025	.022	.019	.017	.015
17	.080	.069	.060	.052	.045	.039	.034	.030	.026	.023	.020	.017	.015	.013	.012
18	.069	.059	.051	.044	.038	.032	.028	.024	.021	.018	.016	.014	.012	.010	.009
19	.060	.051	.043	.037	.031	.027	.023	.020	.017	.014	.012	.011	.009	.008	.007
20	.051	.043	.037	.031	.026	.022	.019	.016	.014	.012	.010	.008	.007	.006	.005