Müəllimin adı: Hajiyeva Arzu Ali

Fənnin adı: Economy of the firm

Qrupun nömrəsi: 1025, 1026

**Mövzu 1: Introduction to the firm. Main Theoretical views**

1. The nature of the firm. Explain why firms exit.
2. Explain Coasian theory of the firm.
3. Explain Williamsons theory of the firm
4. A complete and incomplete contracts. Bounded ratioanlity, adverse selection, moral hazard.

**Mövzu 2: Corporate Governance and the forms of Business ownership**

1. Forms of Business Ownership: Sole propriertorship.
2. Forms of Business Ownership: Partnership.
3. Forms of Business Ownership: Corporation.(Explain S&C Corporations and LLC)
4. What is corporate governance:objectives and attributes.
5. Explain possible conflicts between main figures of corporations.

**Mövzu 3: Industry and Company Analysis. Assets of the firm**

1. A) Explain sum of the years’ digits method of depreciation of firms’ assets.

B) An asset costing $24,000 has estimated useful life of 6 years and residual value of $4,500. Calculate the depreciation of its life using double declining balance method.

1. A)Explain straight-line method of depreciation of firms’ assets.

B)Use sum of the years' digits method of depreciation to prepare a depreciation schedule of the following asset:

Cost $45,000

Residual Value $3,000

Useful Life in Years 5

1. A) Explain double declining balance method of depreciation of firms’ assets.

B)An asset costing $45,000 has estimated useful life of 20 years and residual value of $30,000. Calculate the depreciation of its life using straight line method.

1. Explain different industry and company analysis approaches
2. Explain Porter’s “Five Forces Framework” and Industry life-cycle model

**Mövzu 4: Models of Market Behavior: Perfect Competition**

1. Explain and show in the graph curve demand curve and individal firm’s supply curve under perfect competition.
2. Explain the performance of the firms under perfect competitive market according the following graphs.



1. Explain the following graph under perfect competitive market and calculate the profit of the firm.



1. Concepts of competition. When the firm is considered to be competitive?
2. Explain perfect competition in the long-run.
3. Market demand is given by Q = 144 – 2P, where P is the market price and Q is the total output of the industry. The industry is perfectly competitive and is made of N identical firms. Each firm’s cost function is given by Ci = 25+ qi2 for qi > 0 and C = 0 for qi = 0. Obtain the individual supply function f of a single firm as well as the market supply function. What is the market equilibrium for a given number of firms N? How many firms are there in the market in the long run equilibrium?
4. Market demand is given by Q = 64 – P, where P is the market price and Q is the total output of the industry. The industry is perfectly competitive and is made of N identical firms. Each firm’s cost function is given by Ci = 36+ qi2 for qi > 0 and C = 0 for qi = 0. Obtain the individual supply function f of a single firm as well as the market supply function. What is the market equilibrium for a given number of firms N? How many firms are there in the market in the long run equilibrium?
5. Market demand is given by Q = 49 – P, where P is the market price and Q is the total output of the industry. The industry is perfectly competitive and is made of N identical firms. Each firm’s cost function is given by Ci = 9+ qi2 for qi > 0 and C = 0 for qi = 0. Obtain the individual supply function f of a single firm as well as the market supply function. What is the market equilibrium for a given number of firms N? How many firms are there in the market in the long run equilibrium?

**Mövzu 5: Models of Market Behavior: Oligopoly**

1. Explain Oligopolistic market, types and features of Oligopoly.
2. Explain what is cartel and why they are illegal? State possible penalties for cartels.
3. Explain Kinked demand curve.

**Mövzu 6: Models of Market Behavior: Oligopoly**

1. Explain dominant firm positioning in oligopoly.
2. Prisoner’s Dilemma and its application to business decisions.
3. Cournot and Stackelberg models of Oligopoly
4. Compare Cournot and Stackelberg models and draw the graphs.

**Mövzu 7: Game theory: Cournot model**

1. The inverse demand function is P=68-Q. Firm 1 has a constant unit cost of production equal to 6 and firm 2 C=4. What is Cournot equilibrium. Find the quantities produced, price and profit of the firms
2. The inverse demand function is P=82-Q. Firm 1 has a constant unit cost of production equal to 14, Firm 2 C= 7. What is the Stackelberg equilibrium if firm 1 moves first? Find the quantities produced, price and profit of the firms.

**Mövzu 8:Change in reaction functions depending on costs**

1. Market demand is Q=150-P. there are 2 firms. Firm 1 has a constant unit cost of production equal to 8 and firm 2 has a constant cost of production equal to 8+a, a>0. How does firm1’s output change with a?
2. Market demand is Q=48-P. there are 2 firms. Firm 1 has a constant unit cost of production equal to 6 and firm 2 has a constant cost of production equal to 6+a, a>0. How does firm1’s output change with a?
3. Market demand is Q=48-P. there are 2 firms. Firm 1 has a constant unit cost of production equal to 4 and firm 2 has a constant cost of production equal to 4+a, a>0. How does firm1’s output change with a?
4. Market demand is Q=76-P. there are 2 firms. Firm 1 has a constant unit cost of production equal to 4+a and firm 2 has a constant cost of production equal to 4, a>0. How does firm 2’s output change with a?

**Mövzu 9: Oligopoly: Stackelberg model**

1. The inverse demand function is P=172-Q. Firm 1 has a constant unit cost of production equal to 3, Firm 2 has a constant unit cost of production equal to 6. What is the Stackelberg equilibrium if firm 2 moves first? Find the quantities produced, price and profit of the firms
2. The inverse demand function is P=156-Q. Firm 1 has a constant unit cost of production equal to 5 and firm 2 a constant unit cost of production equal to 8. What are Cournot equilibrium and the Stackelberg equilibrium? Draw the reaction functions of the firms and show necessary points.
3. The demand function is Q=102-P. Firm 1 has a constant unit cost of production equal to 6 and firm 2 a constant unit cost of production equal to 3. What is Cournot equilibrium and the Stackelberg equilibrium? Draw the reaction functions of the firms and show necessary points.
4. The demand function is Q=123-P. Firm 1 has a constant unit cost of production equal to 4 and firm 2 a constant unit cost of production equal to 11. What is Cournot equilibrium and the Stackelberg equilibrium? Draw the reaction functions of the firms and show necessary points.
5. The demand function is Q=89-P. Firm 1 has a constant unit cost of production equal to 12 and firm 2 a constant unit cost of production equal to 7. What is Cournot equilibrium and the Stackelberg equilibrium? Draw the reaction functions of the firms and show necessary points.
6. The demand function is Q=63-P. Firm 1 has a constant unit cost of production equal to 3 and firm 2 a constant unit cost of production equal to 9. What is Cournot equilibrium and the Stackelberg equilibrium? Draw the reaction functions of the firms and show necessary points.
7. The inverse demand function is P=65-Q. Firm 1 has a constant unit cost of production equal to 3 and firm 2 has C=5. What is Cournot equilibrium and the Stackelberg equilibrium? Draw the reaction functions of the firms and show necessary points.

 **Mövzu 10: Mergers and Acquisitions**

1. Define Merger and Acquisitions. Explain their categories.
2. Explain reasons for merging and acquiring firms. Synergy value.
3. Strategic reasons for business combination.
4. Basic business reasons for business combination
5. The steps for merging and acquiring firms. Explain overall process.
6. The reasons for mergers to fail. Explain problems in achieving success.

**Mövzu 11: Mergers and Acquisitions – Due diligence process and legal issues**

1. Legal and regulatory considerations with mergers. Merger agreement. Representation, Indemnification and Confidentiality
2. Explain due diligence process during merger and acquisitions.

**Mövzu 12: Measuring concentration of market: Herfindahl Hirshchman index**

1. Company Sales(thousands of dollars)

Company A - 750 Company E - 125

Company B - 500 Company F - 135

Company C - 250 Company G - 125

Company D - 125 Company H - 125

Companies C, F and H decide to merge. are proposing to merger. What is new HHI index if the merger takes place? What is the decision of Federal Trade Commission?

1. Explain the HHI index and general rules by Federal Trade Commision.
2. Calculate the HHI of an industry with the following distribution of sales: 40%, 25%, 3%, 35%. The firm with 3 and 35 percent market share are proposing to merger. What is the decision of Federal Trade Commission?
3. The sales in the industry are as follows: $200000, $600000, $100000, $800000, $700000. Find HHI index and C4. The firms with $600000and $100000 sales supposed to merge. Explain the decision of Federal Trade Commission.
4. Company Sales(thousands of dollars)

Company - 340 Company E - 90

Company B - 200 Company F - 140

Company C - 12 Company G - 125

Company D - 136 Company H - 125

Companies E, and H decide to merge. are proposing to merger. What is new HHI index if the merger takes place? What is the decision of Federal Trade Commission?

1. The sales in the industry are as follows: $220000, $300000, $120000, $80000, $650000. Find HHI index and C4. The firms with $220000 and $80000 sales supposed to merge. Explain the decision of Federal Trade Commission.

**Mövzu 13: Capital budgeting. Firms’ investing decisions.**

1. ABC company is considering the purchase of testing equipment that will cost $500,000 to replace old equipment. Assume the new machine will generate after-tax savings of $250,000 per year over the next four years. If r is 15%, what’s Net Present Value of the investment?
2. Capital budgeting tools. Net Present Value, Payback-Period, Profitability index and Accountability index.
3. Compare these 2 projects. Find NPV. And decide which of the to choose.

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Cash Flow ($) | Discount factor 5.3% | PV |
| 0 | -800000 |  |  |
| 1 | 230000 |  |  |
| 2 | 35000 |  |  |
| 3 | 400000 |  |  |
| 4 | 140000 |  |  |
| 5 | 180000 |  |  |
| 6 | 250000 |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Cash Flow ($) | Discount factor 5.3% | PV |
| 0 | -500000 |  |  |
| 1 | 120000 |  |  |
| 2 | 14000 |  |  |
| 3 | 700000 |  |  |
| 4 | 250000 |  |  |
| 5 | 270000 |  |  |
| 6 | 300000 |  |  |

1. Determine the net present value for a project that costs $110,000 and would yield after-tax cash flows of $16,000 the first year, $18,000 the second year, $15,000 the third year, $14,000 the fourth year, $23,000 the fifth year, and $33,000 the sixth year. Your firm's cost of capital is 6%.
2. Two projects are given. The first project is expected to yield cash flows of £15,000 annually for the next 4 years. The initial cost of the investment is £14,000. The second project is expected to yield cash flows of £12,000 annually for the next 6 years. The initial cost of the investment is £19,000. Compare these 2 projects and explain which is more worthwhile by calculating accounting rate of return.
3. Explain net present value and calculate the following problem:

A project with a 15 year life and a cost of $200,000 generates revenues of $22,000 each year. If the discount rate is 7%, what is the NPV of the project?

1. The ABC Corporation is considering an investment that will cost $80000 and have a useful life of 4 years. During the first 2 years, cash flows are $25000 per year and for the last 2 years they are $ 20000 per year. What is the payback period for this investment?
2. A project with a 3 year life and a cost of $26,000 generates revenues of $9,000 in year 1, $17,000 in year 2, and $18,000 in year 3. If the discount rate is 3%, what is the NPV of the project?
3. Explain profitability index and calculate the following problem:

Company A is undertaking a project at a cost of $45 million which is expected to generate future net cash flows with a present value of $75 million. Calculate the profitability index.

1. Compare these 2 projects. Find NPV. And decide which of them to choose.

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Cash Flow ($) | Discount factor 3.4% | PV |
| 0 | -800000 |  |  |
| 1 | 230000 |  |  |
| 2 | 45000 |  |  |
| 3 | 330000 |  |  |
| 4 | 140000 |  |  |
| 5 | 200000 |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Cash Flow ($) | Discount factor 3.4% | PV |
| 0 | -600000 |  |  |
| 1 | 120000 |  |  |
| 2 | 17000 |  |  |
| 3 | 700000 |  |  |
| 4 | 250000 |  |  |
| 5 | 320000 |  |  |

1. The ABC Corporation is considering an investment that will cost $120000 and have a useful life of 6 years. During the first 3 years, cash flows are $25000 per year and for the 4th year 32000 and for the last two years they are $ 20000 per year. What is the payback period for this investment?

**Mövzu 14: Restuctring of firm and liquidation**

1. Divestiture and spin-off process
2. Explain Corporate restructuring and types of corporate downsizing (divestitures, equity carve-outs, spin-offs, split-offs and split-ups)
3. Involuntary and voluntary divestitures, explain reasons.
4. Reorganization versus liquidation – explain bankruptcy and reorganization process

**Mövzu 15: Auctions**

1. Auctions, their types and bidding process
2. Auctions, known, unknown values
3. E-auctions, their benefits and limitations