

20 questions, 5 points each. Keep your answers brief. In each case a sufficient answer can be written in the space provided. Use the backs of the pages sparingly.

1. Two sisters contemplate forming an equal partnership and opening a shop in Lexington selling knick-knacks to tourists here to see the local horse industry. One is a college drop-out and the other is a CPA. They come to different conclusions about the economic profitability of such a venture. Does this mean that one of them has made a mistake in her calculations?

A major input in the production process for this business will be the labor of the two sisters. If they value their time differently, they will reach different conclusions about the economic profitability of this business. And the opportunity cost of a CPA's time is likely to be higher than the opportunity cost of a college dropout's time.

2. Recent supply disruptions have led to higher gasoline prices. Using the concept of own-price elasticity of demand, explain why oil company revenues have risen rather than fallen.

Own-price elasticity = $\% \Delta Q_X / \% \Delta P_X$. If a relatively small reduction in Q causes a relatively large increase in P , then total revenue will increase. This will occur if demand is inelastic, i.e. $\% \Delta Q_X < \% \Delta P_X$. Since short-run demand for gasoline is very inelastic, the supply disruptions have led to increased revenues for oil companies.

3. Your instructor grew up in a small town that only had one fast-food restaurant. Briefly explain why, using a simple diagram illustrating the importance of MES in determining market structure.

If each firm must produce a significant portion of market output in order to attain minimum efficient scale, then there is room for only a limited number of producers in the market. In the extreme case, market demand is so small that only one efficient-sized producer can exist. This can be illustrated in a diagram where the market demand curve cuts the long-run average cost curve for a representative firm very close to the point of minimum efficient scale of production.

4. Despite the fact that the number of hog farms has declined, pork prices have fallen significantly in the last decade. Briefly explain why.

Due to the adoption of mass production techniques, average cost has fallen and reaches a minimum (MES) at a much larger output. Competition among these large low-cost producers has driven pork prices down, with a resulting increase in the quantity demanded (and hence market output) of pork. Even though market output has increased, it is being produced by fewer (but much bigger) hog farms.

5. Where do scale economies come from? (A brief list will suffice.)

Indivisibilities and the spreading of fixed set-up costs

Specialization of labor

Physical/engineering relationships

Economies of massed reserves

Meshing

Multi-plant economies—dispersed customers and/or complex product lines

6. Anheuser-Busch operates a dozen breweries around the U.S. Proctor and Gamble also operates multiple plants in various locations around the country. Rationalize each of these corporate strategies.

A-B: Beer is costly to ship. Customers are geographically dispersed. A-B trades off economies of scale in production at the plant level against transportation cost savings from more but smaller plants.

P-G: There are many distinct products in the company's product line, many of which have no synergies (economies of scope) at the physical production level with any other P-G product. So P-G specializes production of each product in a separate plant, e.g. JIF peanut butter prior to Smucker's acquisition of JIF from P-G.

7. Write an algebraic expression explaining economies of scope. Are there economies of scope or diseconomies of scope in raising chickens and alligators?

$C(X, 0) + C(0, Y) > C(X, Y)$.

Since many chickens die every day in the normal course of operating a large factory chicken farm, and since alligators find dead chickens tasty, chicken farms that also operate an alligator ranch can take care of the problem of disposing of dead chicken carcasses by feeding them to their alligators, thus reducing their feed costs.

8. Distinguish between economies of scale and learning curve effects. Bring Boeing and Toyota into your answer.

Economies of scale: as the rate of production increases, per unit costs decline. If Toyota produces 1000 Camrys per day, its average cost per car will be lower than if it produces 100 Camrys per day.

Learning curve: as the cumulative number of units produced increases, the cost of producing each successive unit falls because of learning by doing. It will cost Boeing less to produce the 100th 7E7 than it will to produce the 10th one.

9. Messer Construction Co. is building a parking garage at the southern end of campus. It leases crane services from a company in Nashville, which dismantles its cranes and trucks the parts up to Lexington, and then reassembles them. Wouldn't it be cheaper for Messer to own its own cranes rather than to rent them from so far away?

Markets can perform the function of aggregating uncorrelated demands. Messer's demand for crane services is sporadic. If it owned its own cranes, they would often sit idle. The crane company is able to keep its cranes fully employed by leasing them to companies like Messer that only need a crane every now and then.

10. What are some of the specific sources of cost savings resulting from Penney's arrangement with TAL Apparel Ltd?

Inventory holdings of men's shirts in distribution centers have fallen to near zero. Out-of-style leftovers are nearly nonexistent. Design and market testing of new shirts is now handled by TAL, reducing the lag in getting new products to market. TAL has helped Penney's optimize inventory holdings of each shirt at the store level to match up with their own production and delivery capabilities.

11. Give a one-sentence example of each type of asset specificity.

Physical asset specificity: doughnut machines at Krispy Kreme.

Site specificity: mine-mouth power plants.

Human asset specificity: learning company-specific software.

Dedicated assets: extra production line at plastic manufacturer specifically for Boston Market plates.

12. What is a quasi-rent? Give an example.

A quasi-rent is the ex post return earned on an irreversible (sunk) investment, i.e. the amount above and beyond the minimum necessary to keep the asset employed in its current use. After digging a giant hole in the ground, the AVC of operating our coal mine is \$15 per ton. Any price that we get above \$15 is a quasi-rent. Whether we get a price that is high enough to allow us to recoup our original investment is irrelevant to our decision whether to operate the mine after we have dug the hole.

13. Why would a grain elevator located at the terminus of a rail line benefit from vertical integration?

The grain elevator is vulnerable to hold-up by the railroad. If the grain elevator owns the railroad or vice versa, hold-up can be avoided.

14. Why would a manufacturer of a product with a national brand name reputation who uses distributors that arrange for advertising and promotional activities in local markets benefit from vertical integration?

Retailers who do not provide local advertising and promotional activities can free ride on those that do provide those services. Since their costs will be lower, they can charge lower prices, ultimately driving the non-free-riders out of business. If the manufacturer wants local provision of advertising and promotional activities, vertical integration is one way to assure that retailers do this.

15. Are the courts enough? Briefly discuss why legal remedies to complex business transactions are often unsatisfactory.

It is impossible to write a contract sufficiently complex to cover all contingencies. Conditions may change over time in unpredictable ways. Clever, opportunistic firms will find ways to cheat that are impossible for courts to detect. Certain things that the parties would like to put in a contract are unenforceable at law. Litigation is very, very costly.

16. Why did it make sense for MGM to sign Johnny Weismuller to a ten-year contract?

MGM invested heavily in the Tarzan series of movies. Much of its investment was irreversible. MGM's investment in Johnny Weismuller to play the role of Tarzan is an example of firm-specific human capital. A long-term contract protected both sides from hold-up.

17. How can offering a hostage make a complex business interaction self-enforcing?
Use an example in your answer.

By offering a hostage one party can create incentives for itself not to renege on its commitment to another party. If a franchisee builds an expensive restaurant on land owned by the franchisor, the franchisor knows that the franchisee is less likely to chisel on quality and hurt the franchisor's brand-name capital.

18. What are some things McDonald's does to monitor its franchisees?

Electronic clip-boards that monitor staff making periodic inspections of different parts of the restaurant.

Purchase of supplies from corporate or approved vendors.

Avoidance of too much variety in the menu, or use of ingredients whose quality is hard to standardize.

Inspectors who visit and inspect restaurants.

19. What is an efficiency wage and how does it remedy the shirking problem for employees whose job makes it difficult/costly to monitor them?

An efficiency wage is a wage paid to a worker that exceeds the worker's next best alternative wage. If it is costly to monitor a worker's activities, such a worker may be tempted to shirk. If this worker is paid an efficiency wage, they will weigh the short-run gain from shirking (and risking being fired) against the present discounted value of the future stream of wage premiums they receive from not shirking.

20. As coach of a youth soccer team, you notice that when your team scores more goals, you are more likely to win. You buy an expensive trophy and tell your players that it will be awarded at the end of the season to the player who scores the most goals. Will this "tournament" be productivity enhancing?

As in most team sports, synergies exist among members of a soccer team. Scoring goals is a team activity, unlike say, hitting home runs in baseball. Tournaments that reward one individual for the team's actions reduce the incentives for team members to engage in cooperative activities, and hence reduce the overall productivity of the team.