━━━━━ **ANSWERS** ━━━━━

MATCHING

1-e; 2-c; 3-l; 4-f; 5-v; 6-p; 7-t; 8-y; 9-q; 10-x;
11-w; 12-o; 13-a; 14-g; 15-i; 16-r; 17-m; 18-k;
19-u; 20-b; 21-s; 22-j; 23-z; 24-h; 25-n; 26-d.
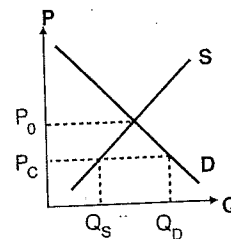
━━━━━ **ANSWERS** ━━━━━

MULTIPLE CHOICE

1. b Consumer surplus is the area under the demand curve above the equilibrium price. See the Knowing The Tools box on page 133 and the accompanying Figure, and text on pages 133-134.

2. d The loss to consumers is E and C (but C is gained by producers). The loss to producers is F. So the total loss is $E + F$. See pages 135-136 and Figure 6-2.

3. c The incorrect options have consumer and producer surplus confused. Deadweight loss is surplus lost by consumers and producers but not gained by anyone. It is a net loss to society from deviating from market equilibrium. See pages 135-136 and Figure 6-2.

4. a Tax revenue is the tax per unit times the units sold, area B + D. Option b should read "is *greater* than." Options c and d would be correct if we reversed the terms consumer and producer, as well as consumer surplus and producer surplus. See pages 135-136 and Figure 6-2.

5. c See the definition of deadweight loss on page 136.

6. a The welfare loss triangle is the cost of taxation in *excess* of the revenue paid to government. It also represents the *loss* of consumer *and* producer surplus from a tax. See pages 135-136.

7. c The benefit and ability-to-pay principles of taxation are *not* easy to apply and *are* often in conflict. With regard to b, government should tax *inelastic* goods. See pages 136-137.

8. a Those with inelastic demand or supply are least able to change their behavior as a result of the tax and, therefore, bear a greater share of the tax. See pages 137-138.

9. d The burden of the tax paid by producers is areas C and D. The burden of the tax paid by consumers is the increase in the price times quantity purchased, area A, and lost consumer surplus, area B. Area B + D represents the welfare loss of the tax. See pages 138-139, especially Figure 6-3.

10. c The per unit tax is $P_1 - P_2$. Of that, consumers pay $P_1 - P_0$ of the per unit tax. Tax revenues equal area A + C. The portion of the per unit tax paid by sellers is $P_0 - P_2$. The welfare loss equals area B + D. See pages 138-139, especially Figure 6-3.

11. d Government divides the taxes among employees and employers equally. However, since the supply of labor is relatively more inelastic, employees bear the greater burden of social security taxes. See pages 141-142.

12. b A price ceiling is imposed below the market equilibrium price. See pages 142-145.

13. b A price ceiling is a government-set price *below* equilibrium and creates a *shortage*. A price ceiling reduces consumer and producer surplus, but a portion of the lost producer surplus is transferred to consumers. A price ceiling creates welfare loss just like taxes do. See pages 144-145.

14. a As discussed on pages 142-145, the quantity demanded exceeds the quantity supplied. The price is below equilibrium, and a shortage is created. You don't use the terms supply and demand because that usage refers to the entire schedule (curve).

15. b   Rent controls are price ceilings and therefore cause the quantity demanded to exceed the quantity supplied. Indeed, the quantity demanded rises while the quantity supplied falls creating a shortage. See pages 142-145 in the text.

16. a   Because the minimum wage is a price floor it increases the quantity supplied and decreases the quantity demanded (decreasing employment) and creating a surplus of workers (causing some unemployment). The higher minimum wage would increase costs of production to businesses. See pages 142-145 in the textbook.

17. b   A price ceiling creates a shortage equal to $Q_2 - Q_1$. It also creates a deadweight loss equal to are C + E and causes the combined producer and consumer surplus to *fall* by areas C and E (the welfare loss triangle). See pages 141-142, especially Figure 6-4.

18. d   Rent-seeking activity is designed to transfer surplus form one group to another—whether it be from producers to consumers or the other way around. See page 146.

19. b   When both parties have the greatest possibility of change, there will be the greatest surplus. This is in the long run when both demand and supply are more elastic. See pages 146-147.

▬▬ ANSWERS ▬▬

SHORT-ANSWER QUESTIONS

1.   Six roles of government are (1) provide a stable set of institutions and rules, (2) promote effective and workable competition, (3) correct for externalities, (4) provide public goods, (5) ensure economic stability and growth, and (6) adjust for undesired market results. (128-132)

2.   The cost of taxation to society includes (1) the direct cost of the revenue paid to government; (2) the loss of consumer and producer surplus caused by the tax; and (3) and the administrative costs of collecting the tax. (135-136)

3.   The benefit of taxes to society are the goods and services that government provides (when fulfilling the six roles in a market economy as discussed in Chapter 5). (136)

4.   The benefit principle follows the same principle as the market: *the individuals who receive the benefit of the good or service should pay the tax necessary to supply that good.* (136-137)

5.   The ability-to-pay principle simply states: *the individuals who are most able to bear the burden of the tax should pay the tax.* (136)

6.   The relative burden of a tax (also known as a tax incidence) follows the general rule: *The more inelastic one's relative supply and demand, the larger the burden of the tax one will bear.* (137-138)

7.   The general rule about elasticities and tax burden is this: *if demand is relatively more inelastic that supply, consumers pay a higher percentage of the tax. If supply is relatively more inelastic than demand, suppliers pay a higher share.* (137-138)

8.   A price ceiling is a government imposed limit on how high a price can be charged. An effective price ceiling below market equilibrium price will cause QD > QS (a shortage) as shown in the graph below. (142-145)
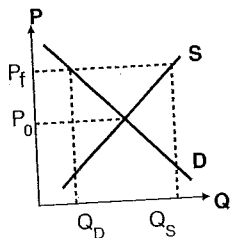
9. A price floor is a government imposed limit on how low a price can be charged. An effective price floor above market equilibrium price will cause QS > QD (a surplus) as shown in the graph below. (142-145)

10. Rent controls are price ceilings and result in shortages in rental housing. As time passes and as the population rises, the demand for rental housing rises. On the supply side, other ventures become more lucrative relative to renting out housing. Owners have less incentive to repair existing buildings, let alone build new ones, reducing the supply of rental housing over time. The housing shortage increases. The shortage becomes more acute over time (142-145)

11. Price ceiling create shortages and price floors create surpluses. (142-145)

12. A price ceiling (a government-set price below market equilibrium price) is in essence an implicit tax on producers and an implicit subsidy to consumers. (144-145)

13. A price floor (a government-set price above market equilibrium price) is in essence an implicit tax on consumers and an implicit subsidy to producers. (145)

14. An important similarity between taxes and price controls (which include price ceilings and price floors) is that they all create a loss of consumer and producer surplus. That is, they all create a loss of producer and consumer surplus, shown graphically by a welfare loss triangle. An important difference between taxes and price controls is that price controls create surpluses (in the case of a price floor) and shortages (in the case of a price ceiling), while taxes do not create surpluses or shortages. (144)

15. Rent seeking is an activity designed to transfer surplus (consumer or producer surplus) from one group to another. (145-147)

16. The more inelastic demand, the greater the incentive suppliers have to drive the price up because this will increase their revenue and they will be better off. The more inelastic supply, the greater the incentive demanders have to lower the price because they will be better off. (145-147)

ANSWERS

PROBLEMS AND APPLICATIONS

1.
   a. Providing a stable set of institutions and rules. (128)
   b. Correcting for an externality (a negative externality in this case). (129)
   c. Promoting effective and workable competition. (129)
   d. Adjusting for undesired market results (an "unfair" distribution of income in this case). (131)
   e. Providing for public goods. (131)
   f. Ensuring economic stability and growth. (130)
   g. Adjusting for undesired market results (subsidizing a merit activity in this case). (131-132)

2.
   a. Area A + B + C represents consumer surplus at the market equilibrium price. (133-136, and Figure 6-2)
   b. Area D + E + F represents producer surplus at the market equilibrium price. (133-136, and Figure 6-2)
   c. Area A is consumer surplus after the tax. (133-136, and Figure 6-2)
   d. Area B is what consumers pay in tax revenues to government. This represents lost consumer surplus gained by government. (133-136, and Figure 6-2)
   e. Area C is lost consumer surplus not gained by government. (133-136, and Figure 6-2)
   f. Area F is producer surplus after the tax. (133-136, and Figure 6-2)
   g. Area D is what producers pay in tax revenues to government. This represents lost producer surplus gained by government. (133-136, and Figure 6-2)

h. Area E represents lost producer surplus not gained by government. (133-136, and Figure 6-2)

i. Area C + E is the deadweight loss from a tax. This area is the welfare loss triangle. (133-136, and Figure 6-2)

3. a. Benefit principle of taxation. Gas taxes raise revenues to provide roads to those who use them. (136-137)

b. Benefit principle of taxation. The fees raise revenues to provide public parks to those who use them. (136-137)

c. Benefit principle of taxation. The tolls raise revenues to provide roads to those who use them. (136-137)

d. Ability-to-pay principle. The income tax is a progressive tax (the percentage of taxes paid increases as income increases) because the wealthy can "afford" to pay more taxes. (136-137)

e. Ability-to-pay principle. The more property you own, the more you pay. (136-137)

f. Benefit principle of taxation. Although Employment Insurance premiums are used to pay benefits to those currently temporarily unemployed, the expectation is that if current employees ever become unemployed, a similar benefit would be paid to them from employment insurance premiums collected at that time. (136-137)

4. a. The consumers now have to pay 44,000 takas per car which is 4,000 takas more than before. Their tax burden is (4,000 × 250) = 1,000,000 takas. Suppliers now receive 34,000 takas (44,000 − 10,000) on each car they sell, which is 6,000 takas less per car than before the tax. Their tax burden is (6,000   250) = 1,500,000 takas. (135-140, especially Figure 6-3)

b. The graph above shows the relative taxes paid by consumers and producers. The upper shaded portion is consumers' tax burden. The lower shaded portion is suppliers' tax burden. (135-141, especially Figure 6-3)

c. Since the supplier's tax burden is greater, the supply curve is more inelastic than the demand curve. This is discussed in the textbook. (135-141, especially Figure 6-3)

5. Consumers pay the largest percentage of a tax when demand is inelastic and supply is elastic. (135-141)

6. a. Government should tax goods with *elastic* demand if it wishes to have as large effect on individual actions as possible. This is because an elastic demand means there are many substitutes buyers can turn to in response to the higher price as a result of the tax. Buyers will cut back on their consumption rather dramatically. (135-141).

b. Government should tax goods with *inelastic* demand or supply if it wishes to raise revenues and minimize welfare loss. Revenues to government will rise because an inelastic demand or supply means there are few substitutes or alternatives for buyers and sellers to turn to. Moreover, an inelastic demand or supply will minimize welfare loss because the welfare loss triangle will be smaller the steeper (the more inelastic) the demand or supply curves. (135-141, Figure 6-3, and the Applying The Tools box on page 140)

7. a. Market equilibrium is P_e and Q_e. Consumer surplus is area A + B + C. Producer surplus is area D + E + F. (135)

b. As a result of the price ceiling the quantity supplied falls from Q_e to Q_1 and the quantity demanded rises from Q_e to Q_2. This creates a shortage of $Q_2 - Q_1$. (142, especially Figure 6-5)

c. Consumer surplus becomes area A + B + D. Producer surplus becomes area F. (144-145)

d. The welfare loss triangle is area C + E. (144-145, especially Figure 6-6)