S5 Economics Practice Paper: Demand and Supply, Market Equilibrium, Consumer and Producer Surplus, Price Elasticity, Price Ceiling and Floor, Unit Tax and Subsidy, Costs of Production, Market Structure and HHI, National Income and the Multiplier (100 marks)

Level: S5 | Subject: Economics | 60 minutes | 100 marks | 24 questions | question paper

Section A: Demand, Supply and Market Equilibrium (17 marks)

Each question is worth 4-5 marks; show the equations and working.

#	Question	Marks
1	In a market, demand is Qd = 120 - 2P and supply is Qs = 3P - 30 (P in dollars, Q in units). Find the equilibrium price and quantity, and calculate the consumer surplus and producer surplus at equilibrium.	5
2	If the government sets the price at 20, find the quantity demanded, the quantity supplied and the size of the shortage or surplus.	4
3	If demand rises by 20 units at every price (new Qd = 140 - 2P) and supply is unchanged, find the new equilibrium price and quantity.	4
4	Technical progress raises supply by 10 units at every price (new Qs = 3P - 20) with demand unchanged. Find the new equilibrium price and quantity and state the direction of the price change.	4

Section B: Elasticity of Demand (17 marks)

Each question is worth 4-5 marks; state the sign of each elasticity and interpret it.

#	Question	Marks
5	Demand is Qd = 120 - 2P. When price rises from 30 to 36, quantity falls from 60 to 48 units. Use the arc elasticity formula to calculate the price elasticity of demand over this range and say whether demand is elastic, unit elastic or inelastic.	5
6	Find the point elasticity at P = 30, then compare total revenue at P = 30 and P = 36 and explain the link between total revenue and elasticity.	4
7	A consumer's income rises from 20,000 to 24,000 dollars and demand for a good rises from 500 to 560 units. Calculate the income elasticity of demand and classify the good.	4
8	A 10 per cent rise in the price of good A raises demand for good B by 4 per cent; another pair of goods C and D has a cross elasticity of -0.8. Find the cross elasticity of A and B and identify the relationship in both pairs.	4

Section C: Price Controls, Unit Tax and Subsidy (17 marks)

Each question is worth 4-5 marks; express tax incidence in dollars and per cent.

#	Question	Marks
9	In the same market (Qd = 120 - 2P, Qs = 3P - 30) the government imposes a price ceiling of 24. Find the quantity demanded, the quantity supplied, the shortage and the quantity actually	5

	traded.	
10	If instead a price floor of 40 is imposed, find the quantity demanded, the quantity supplied, the surplus and the quantity traded.	4
11	The government levies a unit tax of 5 on sellers (new supply Qs = 3P - 45). Find the new equilibrium price and quantity, the tax borne by consumers and producers (in dollars and per cent), tax revenue and the deadweight loss.	4
12	The government instead pays sellers a subsidy of 5 per unit (new supply Qs = 3P - 15). Find the new equilibrium price and quantity and the total subsidy paid.	4

Section D: Costs of Production and the Firm (17 marks)

Each question is worth 4-5 marks; show the cost formulas used.

#	Question	Marks
13	A firm has total cost TC = 400 + 20Q + 2Q^2 in dollars. At Q = 10, find total cost, average cost, marginal cost, average fixed cost and average variable cost.	5
14	Find total cost, average cost and marginal cost at Q = 15, and explain why average cost has fallen.	4
15	Find the output that minimises average cost and the minimum average cost (give both to two decimal places).	4
16	In a perfectly competitive market the price is 60. Find the profit-maximising output, total revenue and profit or loss, and decide whether the firm should keep producing in the short run.	4

Section E: Market Structure and Competition (16 marks)

Each question is worth 4 marks; compute HHI as the sum of squared percentage market shares.

#	Question	Marks
17	A monopolist faces demand P = 100 - 2Q and has total cost TC = 200 + 20Q. Find the profit-maximising output, price and profit.	4
18	Find the allocatively efficient output and price where P = MC, and calculate the deadweight loss relative to the monopoly output.	4
19	Four firms in an industry have market shares of 40, 30, 20 and 10 per cent. Calculate the Herfindahl-Hirschman Index (HHI); what is the HHI if the four firms each hold 25 per cent?	4
20	Explain why an industry with an HHI of 3,000 is usually less competitive than one with an HHI of 2,500, and state one condition necessary for price discrimination.	4

Section F: National Income, Multiplier and Macro Indicators (16 marks)

Each question is worth 4-5 marks; state formulas and units.

#	Question	Marks
21	An economy has C = 200 + 0.75Yd, T = 200, I = 300, G = 400, X = 250 and M = 150 (in billions). Find the multiplier and the equilibrium national income.	4
22	If government spending rises by 100 (G = 500), find the new equilibrium income and the change in income.	4

23	Nominal GDP is 2400 billion and real GDP 2000 billion this year; real GDP last year was 1900 billion. Find the GDP deflator and the real growth rate (two decimal places).	4
24	The labour force is 3,800,000 and employment is 3,610,000. Find the number of unemployed and the unemployment rate.	4