Market Equilibrium

Standard difficulty · 20 questions · 40 marks · Time: 37 minutes

Name: _____ Date: _____ Score: ____ / 40

Write full answers in Sections B and C. Answers are on the last page — try every question first!

Section A — Choose the correct answer — 8 × 1 = 8 marks

1. Market equilibrium is where:
   (a) demand is greater than supply **(b)** supply is greater than demand
   (c) price equals zero **(d)** market demand equals market supply

2. With a fixed number of firms, what happens if supply falls, demand unchanged?
   (a) quantity falls; price may go either way **(b)** price falls; quantity may go either way
   (c) price rises, quantity falls **(d)** price rises; quantity may go either way

3. What is meant by “excess demand”?
   (a) a legal minimum price above equilibrium
   (b) where market demand equals market supply
   (c) demand more than supply at a price
   (d) firms can join or leave the market freely

4. For cooking oil, qD = 325 − 3p and qS = 125 + 5p. What is the equilibrium price?
   (a) ₹25 **(b)** ₹30 **(c)** ₹26 **(d)** ₹50

5. For bicycles, qD = 559 − 7p and qS = 316 + 2p. What is the equilibrium quantity?
   (a) 740 units **(b)** 380 units **(c)** 559 units **(d)** 370 units

6. For cooking oil, qD = 379 − 3p and qS = 249 + 7p. If a price ceiling is set at ₹12, how large is the excess demand?
   (a) 10 units **(b)** 20 units **(c)** 343 units **(d)** 333 units

7. In a market with free entry and exit, each identical firm’s minimum average cost is ₹18, at an output of 3 units. Market demand is qD = 180 − 5p. How many firms will there be in equilibrium?
   (a) 60 firms **(b)** 31 firms **(c)** 30 firms **(d)** 29 firms

8. A competitive firm sells its good at ₹10. The marginal product of workers 1 to 7 is 29, 27, 25, 22, 20, 18, 15 units. If the wage is ₹200, how many workers will it hire?
   (a) 4 workers **(b)** 7 workers **(c)** 6 workers **(d)** 5 workers

Section B — Short answer — 8 × 2 = 16 marks

9. What is meant by market equilibrium?

10. With a fixed number of firms, what happens to equilibrium price and quantity if (a) supply rises, demand unchanged (b) demand falls and supply rises?

11. Explain each term: (a) equilibrium (b) value of marginal product of labour

12. For onions, qD = 250 − 7p and qS = 6p − 10. Find the equilibrium price and quantity.

13. For tomatoes, qD = 235 − 5p and qS = 83 + 3p. A price floor is set at ₹23. Is there excess demand or excess supply, and how much?

14. For cooking oil, qD = 525 − 7p and qS = 200 + 6p. At p = 28, find qD and qS. Which way will the price move?

15. A competitive firm sells at ₹6 per unit, and the marginal product of one more worker is 20 units. What is the value of the marginal product of labour? Should the firm hire the worker at a wage of ₹125?

16. With free entry and exit, each firm's minimum AC is ₹30 at 8 units of output, and qD = 316 − 2p. Find the equilibrium price, quantity and number of firms.

Section C — Longer answers — 4 × 4 = 16 marks

17. Explain how equilibrium price and quantity are reached in a market with a fixed number of firms.

18. Match each with its meaning: (a) price floor (b) marginal revenue product of labour (c) excess supply. Choose from: supply more than demand at a price; a legal minimum price above equilibrium; MR × marginal product of labour.

19. For school bags, qD = 420 − 5p and qS = 288 + 6p. (a) Find the equilibrium price and quantity. (b) The government sets a price ceiling of ₹10: find the excess demand. (c) Why may rationing be needed?

20. With free entry and exit, each firm's minimum AC is ₹22 at 2 units, and qD = 94 − 3p. (a) Find the equilibrium price, quantity and number of firms. (b) Demand rises to qD = 112 − 3p: find the new values. (c) Why does the price not change?

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Answer key

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Q	Answer	Working
1	**(d) market demand equals market supply**	—
2	**(c) price rises, quantity falls**	—
3	**(c) demand more than supply at a price**	—
4	**(a) ₹25**	325 − 3p = 125 + 5p → 8p = 200
5	**(d) 370 units**	p* = 27; q* = 559 − 7 × 27
6	**(a) 10 units**	qD − qS = 343 − 333
7	**(c) 30 firms**	p = 18; qD = 180 − 90 = 90; ÷ 3
8	**(d) 5 workers**	hire while p × MPL ≥ w: 10 × 20 = 200
9	**A situation where quantity demanded equals quantity supplied, so there is no tendency for price to change.**	—
10	**(a) price falls, quantity rises (b) price falls; quantity may go either way**	—
11	**(a) where market demand equals market supply (b) price × marginal product of labour**	—
12	**p* = ₹20, q* = 110 units**	13p = 260 → p = 20; q = 250 − 140
13	**excess supply of 32 units**	qS − qD = 152 − 120
14	**qD = 329, qS = 368: excess supply of 39, so the price falls**	525 − 196; 200 + 168
15	**VMPL = ₹120; no, the wage is more than the worker adds**	6 × 20; compare with 125
16	**p = ₹30, q = 256, 32 firms**	q = 316 − 2 × 30; 256 ÷ 8
17	**Price moves until demand equals supply: excess demand pushes it up, excess supply pushes it down; equilibrium is where the curves cross.**	—
18	**(a) a legal minimum price above equilibrium (b) MR × marginal product of labour (c) supply more than demand at a price**	—
19	**(a) ₹12, 360 units (b) 370 − 348 = 22 units (c) At the low price demand exceeds supply, so the limited amount must be shared out.**	11p = 132

Q	Answer	Working
20	**(a) ₹22, 28, 14 firms (b) ₹22, 46, 23 firms (c) New firms enter until price is back at minimum AC.**	q = 94 − 66; (112 − 66) ÷ 2