ECO.MIC8 Wage Determination and the Labour Market

Total Marks

AQA 7136 · Calculators not allowed · about 90 minutes

Name: _____ Date: ____ / ____ / _____

Answer all questions. Full sentences are required for questions worth 4 marks or more. Label any diagrams clearly and show your working for calculations. Time guidance: 90 minutes.

1 Multiple choice, the basic idea of derived demand for labour in a firm producing widgets in the UK. Context: a small workshop in Manchester producing wooden toys.

- ☐ Labour is demanded directly because workers want wages
- ☐ Labour demand is derived from the demand for the goods the workers produce
- ☐ Firms supply labour to the market, so labour demand is fixed
- ☐ Labour demand equals the marginal cost of labour in all markets

(Total for Question 1 is 1 mark)

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2 Define marginal revenue product (MRP) of labour for a firm selling in a competitive product market, context: a UK bakery hiring bakers.

(Total for Question 2 is 2 marks)

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3 Explain two determinants of the demand for labour for a restaurant chain operating in Britain, excluding the wage level. Name the chain context in your answer.

(Total for Question 3 is 2 marks)

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4 Explain two determinants of the supply of labour to the occupation of junior nurses in the UK, excluding wage level. Context: NHS junior nursing posts.

(Total for Question 4 is 2 marks)

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5 Calculate the marginal revenue product (MRP) of an additional worker at a British small manufacturer. Given the extra worker increases output by 8 units per day and the firm sells each unit at GBP 12 in a competitive product market.

(Total for Question 5 is 4 marks)

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6 State and briefly explain what happens to the quantity of labour demanded in a competitive labour market if the market wage rises from GBP 10 to GBP 12 per hour, other factors constant, for a fast-food outlet in London.

(Total for Question 6 is 2 marks)

7 Draw a competitive labour market diagram for baristas in a city cafe chain, showing labour supply and labour demand curves, an initial equilibrium wage and employment, then a rightward shift in labour demand due to a rise in demand for speciality coffee. Describe what must be drawn and state the resulting wage and employment change.

(Total for Question 7 is 6 marks)

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8 A monopsony employer in a small rural town hires delivery drivers. Explain, with a diagram described in words, how introducing a minimum wage set above the monopsony wage but below the competitive marginal revenue product wage can affect employment and wages. State what must be drawn and the expected result.

(Total for Question 8 is 6 marks)

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9 State two ways a trade union can influence wages and employment in a specific industry, context: a railway workers union negotiating with a regional operator.

(Total for Question 9 is 4 marks)

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10 Elasticity of labour demand. A local employer finds that when the hourly wage for gardeners rises from GBP 9 to GBP 10, the quantity of labour demanded falls from 120 hours per week to 108 hours per week. Calculate the wage elasticity of labour demand using the midpoint method and state whether demand is elastic or inelastic.

(Total for Question 10 is 4 marks)

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11 Explain how the introduction of a modest National Minimum Wage that is set slightly above the existing market wage in a competitive local labour market could both reduce poverty for some workers while not causing unemployment to rise in the short run. Context: low-paid retail workers in a town.

(Total for Question 11 is 6 marks)

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12 Essay: National Minimum Wage and unemployment. Context: the UK labour market debate over national minimum pay.

Evaluate the view that introducing a national minimum wage will always cause unemployment. In your answer, analyse the assumptions behind the simple competitive model that predicts unemployment, consider alternative labour market structures such as monopsony, consider empirical and sectoral differences, and reach a supported judgement. You should use diagrams where appropriate.

(Total for Question 12 is 25 marks)

Mark scheme · ECO.MIC8 Wage Determination and the Labour Market

Question 1

- **B1** correct option B, recognising labour demand is derived from product demand
- **Answer: Labour demand is derived from the demand for the goods the workers produce**

Question 2

- **B1** MRP of labour = marginal physical product of labour (MPL) multiplied by marginal revenue (MR), showing the extra revenue from hiring one more worker
- **B1** for a firm in a competitive product market, MR equals price, so MRP = MPL x price, expressed in money per additional worker
- **Answer: MRP = MPL x MR; in a competitive product market MR equals price, so MRP = MPL x price, the extra revenue from one more worker.**

Question 3

- **B1** identifies one determinant and explains it, e.g. changes in demand for the restaurant's meals: higher product demand raises MRP and labour demand
- **B1** identifies a second determinant and explains it, e.g. productivity/technology: better ovens or training raise MPL so MRP rises, increasing labour demand
- **Answer: E.g. a rise in demand for the chain's meals increases its marginal revenue product so it hires more staff; improvements in technology or staff training raise workers' productivity (MPL), increasing MRP and labour demand.**

Question 4

- **B1** identifies one determinant and explains it, e.g. training places and qualifications: more funded training increases supply to the occupation
- **B1** identifies a second determinant and explains it, e.g. non-wage aspects such as shift patterns or working conditions: better conditions increase willingness to supply labour to nursing
- **Answer: E.g. an increase in funded training places raises the supply of qualified junior nurses; improved working conditions or more flexible shifts increase the willingness of trained nurses to work those posts, raising occupational supply.**

Question 5

- **M1** identify MRP = MPL x price = 8 x GBP 12
- **A1** MRP = GBP 96 per day
- **M1** state the unit and interpretation: GBP 96 is the extra revenue earned per additional worker per day
- **A1** clear final answer with units, awrt GBP 96 per day
- **Answer: MRP = 8 x 12 = GBP 96 per day, the extra revenue from hiring the additional worker.**

Question 6

- **B1** states that quantity of labour demanded falls when wage rises, since firms face a higher cost of hiring
- **B1** brief explanation: at higher wage some previously profitable hirings have MRP < wage, so firms reduce employment
- **Answer: Employment falls: a rise in wage from GBP 10 to GBP 12 raises the cost of labour so the fast-food outlet reduces the number of workers employed because some workers' MRP is now less than the wage.**

Question 7

- **B1** diagram with vertical axis labelled Wage and horizontal axis labelled Quantity of labour or Employment
- **B1** initial downward-sloping labour demand curve D1 and upward-sloping labour supply curve S intersecting at E1 with wage W1 and employment L1
- **B1** a rightward shift of demand curve to D2 shown, with new intersection at E2
- **B1** new equilibrium labelled with higher wage W2 and higher employment L2 relative to W1 and L1
- **B1** short written explanation linking the rise in product demand to higher MRP and increased labour demand, causing wage and employment to rise
- **B1** clear statement that wage rises from W1 to W2 and employment rises from L1 to L2
- **Answer: Draw labelled axes, D1 and S cross at E1 (W1, L1). Shift demand right to D2, new equilibrium E2 with higher wage W2 and higher employment L2. Explanation: higher product demand raises MRP, shifting labour demand right, increasing wage and employment.**

Question 8

- **B1** diagram description: upward-sloping labour supply S, monopsonist marginal expenditure curve ME lying above S, and labour demand (MRP) curve downward-sloping
- **B1** shows monopsony equilibrium where ME intersects demand at employment Lm and wage Wm read from supply at that employment
- **B1** shows a horizontal minimum wage line set above Wm but below the competitive wage where demand equals supply; marks new employment Lmw where demand intersects the minimum wage
- **B1** explains that under monopsony a modest minimum wage can raise both wages and employment because it prevents employer setting wage below marginal revenue product
- **B1** states expected result: wage rises to the minimum level and employment increases from Lm to Lmw, up to the point where MRP equals the mandated wage
- **B1** acknowledges boundary: if minimum wage is set too high above MRP it can reduce employment, so placement matters
- **Answer: Diagram: supply S, ME above it, demand MRP downward. Monopsony chooses Lm at ME=MRP paying Wm from S. Minimum wage horizontal above Wm shifts outcome to higher wage and higher employment Lmw where wage intersects demand, because employer can now hire more at mandated wage. If set too high, employment may fall.**

Question 9

- **B1** identifies one method, e.g. collective bargaining to negotiate higher wages, and explains effect on wage level
- **B1** explains possible employment effect, e.g. higher negotiated wages may reduce employment if operator faces higher labour costs and reduces hiring or uses more automation
- **B1** identifies second method, e.g. organising strikes or threats of industrial action to increase bargaining power
- **B1** explains effect, e.g. strikes can raise wages or force employer concessions but may reduce short-run output and could harm long-run employment prospects if firm loses revenue or market share
- **Answer: E.g. the union uses collective bargaining to secure higher wages, which raises wage levels but may reduce employment if the operator cuts staff; the union may use strikes to increase bargaining power, which can win concessions but reduce short-term output and risk longer-term job losses if the operator is weakened.**

Question 10

- **M1** calculate percentage change in quantity demanded: (108 - 120) / ((108 + 120)/2) x 100 = -12 / 114 x 100 = -10.526...%, awrt -10.53%
- **M1** calculate percentage change in wage: (10 - 9) / ((10 + 9)/2) x 100 = 1 / 9.5 x 100 = 10.526...%, awrt 10.53%
- **A1** elasticity = % change in Q / % change in wage = -10.53% / 10.53% = -1.0, so elasticity magnitude 1.0
- **B1** conclusion: demand is unit elastic in magnitude, so neither elastic nor inelastic conventionally; state as unit elastic
- **Answer: Using midpoint method: %Q = -10.53%, %W = 10.53%, elasticity = -1.0. Demand is unit elastic (magnitude 1.0).**

Question 11

- **M1** states that a modest minimum wage increases pay for those at bottom of distribution, directly raising incomes for low-paid workers
- **M1** explains that if minimum wage is only slightly above market wage, the increase in employers' labour costs may be small, and firms may absorb costs via lower profits, higher prices or productivity improvements rather than cutting employment immediately
- **M1** states that increased wages can raise worker morale and reduce turnover, which saves hiring and training costs, offsetting some increased wage bill
- **A1** develops that if labour demand is relatively inelastic in short run, employment response is small, so unemployment may not rise
- **M1** acknowledges potential short-run trade-off: some firms may reduce hours or staff if wage rise is significant relative to productivity
- **A1** concludes that a modestly set minimum wage can raise incomes without necessarily causing higher unemployment in short run, but effects depend on size of increase and firm/sector characteristics
- **Answer: A modest minimum wage lifts pay for low-paid retail workers and can be absorbed without large job losses if firms adjust profits, prices or productivity and if short-run labour demand is inelastic. However, larger hikes risk reduced hours or job cuts.**

Question 12

- **Level 1** (1-5): Basic statements about minimum wages and unemployment with little application, limited development and no sustained analysis. Diagrams, if present, are poorly labelled or incorrect. Judgement, if any, is unsupported.
- **Level 2** (6-10): Clear explanation of the simple competitive model in which a minimum wage above equilibrium causes unemployment. Some use of diagrams with basic labelling. Some consideration of alternative views or evidence, but analysis is limited and the conclusion is partial.
- **Level 3** (11-15): Detailed analysis of reasons why a minimum wage might lead to unemployment in a competitive market, and reasons why it might not. Diagrams are correctly drawn and labelled. Discussion includes monopsony, search frictions, productivity and empirical evidence. A clear and supported judgement is reached, considering magnitude and context.
- **Level 4** (16-20): Comprehensive evaluation showing balance. Explains multiple mechanisms and empirical nuances, such as labour market heterogeneity, monopsony effects, effects on hours and informal employment, and dynamic responses. Diagrams and quantitative reasoning used to support points. Judgement is well supported and qualified.
- **Level 5** (21-25): Thorough, well-structured argument with sophisticated analysis and synthesis. Covers assumptions, short-run versus long-run effects, distributional impacts, monopsony and bargaining, and empirical literature or plausible illustrative evidence. Integrates diagrams and evaluates policy design features. Final judgement is balanced, justified and explicitly linked to analysis.
- **Indicative content:**
  - Competitive labour market model: supply and demand, minimum wage set above equilibrium creates excess supply (unemployment), diagram showing wage floor, surplus of labour measured by difference between quantity supplied and quantity demanded
  - Assumptions behind competitive model: perfect competition, instant adjustment, homogeneous labour, no search costs, employers pay wage equal to MRP, these assumptions may not hold
  - Monopsony model: monopsonist sets wage below competitive level, a minimum wage can increase both wages and employment if set between monopsony wage and competitive wage; diagram showing supply, ME, and MRP
  - Search and matching frictions, efficiency wage and insider outsider models: wages and employment determined by bargaining, so outcomes differ from simple supply and demand predictions
  - Empirical and sectoral considerations: low-paid sectors, evidence that modest minimum wages have small employment effects, heterogeneity across regions and sectors, firms may absorb costs via prices or lower profits, reduction in turnover and productivity effects
  - Short run versus long run: short-run adjustment costs, possible reduction in hours or job sharing, long-run effects on labour supply, training and automation
  - Measurement and distributional effects: even if some unemployment rises, policy reduces poverty for many low-paid workers; consider unintended consequences like increased informal work or reduced fringe benefits
  - Policy design matters: level of minimum wage relative to median wage, exemptions, phased introduction, regional differentiation, tax and benefit interactions
  - Judgement should weigh models, empirical evidence and practical policy design. Conclude that minimum wage does not always cause unemployment; effect depends on market structure, size of increase and context, and in many realistic settings modest increases do not lead to significant unemployment