

Khulna University, Khulna

Urban and Rural Planning Discipline
1st Year, Term-I Examination, Session 2025-2026
Course No. 0731 04 URP1121

Full Title of Course: History of Human Settlements
Full Marks: 60 Time: 3 hours

- The figures in the margin indicate full marks.
- Use separate sheet for each section.

Section A

There are **four** questions in this section. Answer any **three** questions.

- | | | | |
|----|-----|--|----|
| 1. | (a) | Describe two ways in which walking upright helped early hominins survive in changing environments. [L2, CLO1] | 03 |
| | (b) | Demonstrate how toolmaking and fire helped early humans form camps. [L3, CLO1] | 04 |
| | (c) | Explain with examples why some Egyptian cities, such as Amarna and Memphis, declined or were abandoned. [L3, CLO1] | 03 |
| 2. | (a) | Interpret what the planned layout of towns such as Kahun reveals about social organization in ancient Egypt? [L2, CLO2] | 04 |
| | (b) | Use the example of Babylon or New Babylon to show how political power shaped city development. [L3, CLO2] | 03 |
| | (c) | Mention two functions of ziggurats in Mesopotamian cities. [L1, CLO 2] | 03 |
| 3. | (a) | Identify three ecological planning features of Indus Valley cities other than drainage, raised platforms, and walls. [L2, CLO 2] | 03 |
| | (b) | Describe how flood risks were managed in ancient Mohenjo-daro. [L1, CLO 2] | 03 |
| | (c) | Draw lessons from Dholavira for modern water-sensitive urban planning. [L3, CLO 2] | 04 |
| 4. | (a) | Explain the functions of three major public infrastructures in Roman cities. [L2, CLO3] | 03 |
| | (b) | Detect three major achievements of Roman civilization in urban planning. [L1, CLO3] | 04 |
| | (c) | Discuss two reasons for the decline of the Western Roman Empire. [L4, CLO3] | 03 |

Section B

There are **four** questions in this section. Answer any **three** questions.

- | | | | |
|----|---|---|-----------|
| 1. | (a) | Evaluate the success of the Garden City model in balancing urban economic opportunities with rural environmental quality. [L5, CLO3] | 04 |
| | (b) | Describe the urban planning interventions required to transform a Medieval Town into a Baroque City. [L2, CLO3] | 06 |
| 2. | (a) | Discuss the planning principles used in the development of Model Towns as a response to the negative consequences of industrialization. [L2, CLO3] | 06 |
| | (b) | Evaluate how the introduction of the railway during the Industrial Revolution altered the spatial planning of 19th-century European cities. [L5, CLO 3] | 04 |
| 3. | (a) | Analyze the political factors that led to the decline of Panam City during the colonial period. [L4, CLO2] | 04 |
| | (b) | Examine the significance of the Industrial Revolution as a major turning point in the history of human settlements. [CLO2, L4] | 06 |
| 4. | Write short notes on the following (any five) | | 02X5 = 10 |
| | (a) | Security-oriented settlement pattern in Medieval period [L2, CLO1] | |
| | (b) | Political power and visual control in planning in Baroque city [L2, CLO1] | |
| | (c) | Factory-based urban growth [L2, CLO1] | |
| | (d) | Mixed land use structure in organic Dhaka [L2, CLO1] | |
| | (e) | Religious influence on city planning [L2, CLO1] | |
| | (f) | Khalifatabad [L2, CLO1] | |

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Urban and Rural Planning Discipline

1st Year, Term-I Examination, Session 2025-2026

Course No. 0731 04 URP1131

Full Title of Course: Geography for Planners

Full Marks: 60

Time: 3 hours

- The figures in the margin indicate full marks.
- Use separate sheet for each section.

Evaluate the population structure shown in the population pyramid and recommend appropriate planning strategies to address its implications for economic development, education, and healthcare services. [L5, CLO4]

- | | | | |
|----|-----|--|----|
| 2. | (a) | Define cultural lag. [L1, CLO3] | 02 |
| | (b) | Explain the two basic processes of spatial diffusion and how they contribute to the spread of culture across different regions. [L2, CLO3] | 04 |
| | (c) | Evaluate the views of Environmental Determinism and Possibilism in explaining economic development. [L5, CLO4] | 04 |
| 3. | (a) | Explain how human interaction becomes spatial interaction. [L2, CLO3] | 02 |
| | (b) | Describe why spatial interaction is often compared to the force of gravity. [L2, CLO3] | 02 |
| | (c) | Why does critical distance vary among individuals? [L2, CLO3] | 03 |
| | (d) | Describe the different types of barriers to interaction and their effects on spatial interaction. [L2, CLO3] | 03 |
| 4. | (a) | Illustrate how the Antarctic Treaty has influenced Antarctica's political status. [L3, CLO4] | 03 |
| | (b) | Analyze the relationships and differences among the concepts of state, nation, and country. [L4, CLO3] | 03 |
| | (c) | Explain the different forms of the relationship between nation and state, using suitable examples. [L2, CLO3] | 04 |

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Course No. 0731 04 URP1131

Full Title of Course: Geography for Planners
Full Marks: 60 Time: 3 hours

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Section A

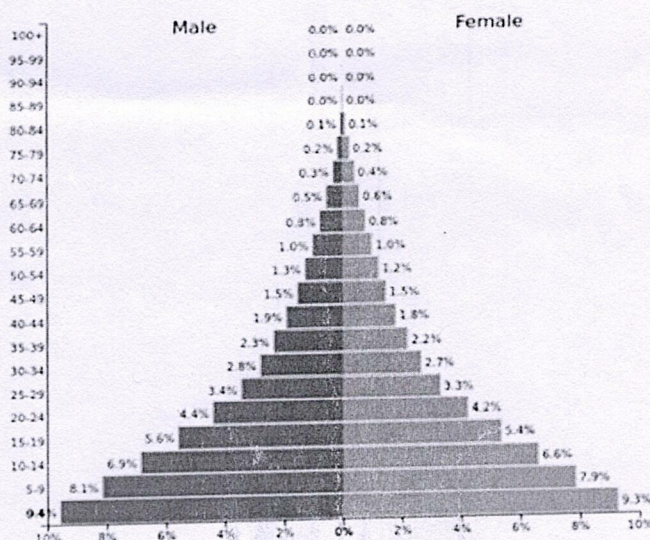
There are **four** questions in this section. Answer any **three** questions.

- (a) State two reasons why geography is important in everyday life. [L1, CLO1] 02
 - (b) "Geography bridges the natural and social sciences." - Explain this statement with suitable examples. [L2, CLO1] 03
 - (c) State and briefly explain the five themes of geography with suitable examples. [L2, CLO1] 05
- (a) Differentiate between latitude and longitude. [L2, CLO1] 04
 - (b) Describe how Earth's revolution leads to the occurrence of seasons. [L2, CLO1] 03
 - (c) Apply GIS knowledge to demonstrate its role in urban planning. [L3, CLO2] 03
- (a) Which atmospheric layer contains most of Earth's weather phenomena, and why? [L2, CLO1] 02
 - (b) In which atmospheric layer do auroras occur, and why? [L2, CLO1] 02
 - (c) Summarize the distinguishing temperature and precipitation, and soil and vegetation characteristics of the major climate types as defined in the Köppen classification system. [L4, CLO1] 06
- (a) Define gradational processes. [L1, CLO1] 02
 - (b) Explain how weathering and mass movement prepare and transfer rock material for erosion. [L2, CLO1] 04
 - (c) Illustrate the role of agents such as running water, glaciers, wind, and waves in shaping new landforms through erosion and deposition. [L3, CLO2] 04

Section B

There are **four** questions in this section. Answer any **three** questions.

- (a) What do you mean by population geography? [L1, CLO3] 02
 - (b) Differentiate between Crude Birth Rate (CBR) and Total Fertility Rate (TFR). [L2, CLO3] 02
 - (c) 06



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Urban and Rural Planning Discipline
1st Year, Term-I Examination, Session 2025-2026

Course No. 0314 04 Soc 1175

Full Title of Course: Sociology for Planners

Full Marks: 60

Time: 3 hours

- The figures in the margin indicate full marks.
- Use separate sheet for each section.

Section A

There are **four** questions in this section. Answer any **three** questions.

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|----|---|----|
| 1. | Critically analyse the functionalist perspectives in Sociology. [L4, CLO1] | 10 |
| 2. | Do you think divorce and remarriage are increasing alarmingly in our society? Discuss in favor of your answer. [L4, CLO2] | 10 |
| 3. | How are social interactions analysed in everyday life? Explain using the levels of sociological analysis. [L2, CLO4] | 10 |
| 4. | (a) What do you mean by subculture? [L1, CLO5] | 03 |
| | (b) Interpret the major components of symbolic culture with suitable examples. [L2, CLO5] | 07 |

Section B

There are **four** questions in this section. Answer any **three** questions.

- | | | |
|----|---|----|
| 1. | (a) What is the social stratification? [L1, CLO4] | 03 |
| | (b) Illustrate the determinants of social stratification. [L2, CLO4] | 07 |
| 2. | (a) Do you think caste, class and race contribute to create social inequality? Justify your standpoint in the context of contemporary society with examples. [L5, CLO4] | 10 |
| 3. | (a) What do you mean by education? [L1, CLO5] | 03 |
| | (b) Analyse the functionalist perspective of education. [L4, CLO5] | 07 |
| 4. | (a) What do you mean by collective behaviour? [L1, CLO6] | 03 |
| | (b) Evaluate the success and failure of social movement. [L5, CLO6] | 07 |

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Urban and Rural Planning Discipline
1st Year, Term-I Examination, Session 2025-2026

Course No. 0311 04 Econ 1157

Full Title of Course: Principles of Economics

Full Marks: 60

Time: 3 hours

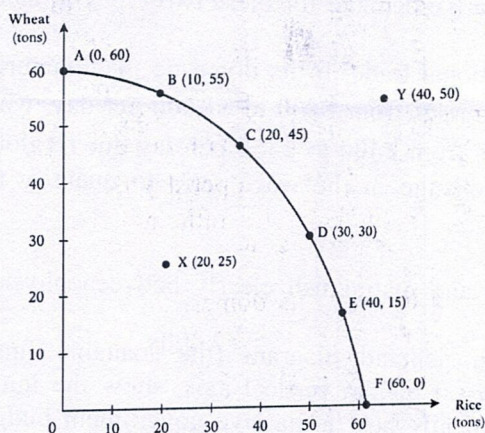
- The figures in the margin indicate full marks.
- Use separate sheet for each section.

Section A

There are **four** questions in this section. Answer any **three** questions.

- Differentiate between positive economics and normative economics. In your answer, explain how the incentive principle and the benefit-cost principle reflects the nature of positive and normative economic analysis. [L4, CLO1] 04
 - "We often ignore implicit cost while taking a decision" explain with an example. [L2, CLO1] 02
 - A planning student X can type five pages in MSWord in 25 minutes or digitize a map in GIS in 60 minutes. Another planning student Y can type five pages in MSWord in 35 minutes or digitize a map in GIS in 40 minutes. What is each student's opportunity cost of digitizing a map? Who has a comparative advantage in digitizing maps? [L3, CLO2] 04

- The following production possibility curve of a farmland shows the maximum combinations of two crops that can be produced with available resources and technologies. Describe the points A, F, C, Y and X. [L3, CLO2] 05



- A household, for example, spends all of its income on food and shelter. The average expenditure on food is BDT 5 per gram and the expenditure on shelter is BDT 10 per square foot. At the current consumption level, the household's marginal utilities for food and shelter is 20 per gram and 30 per square foot, respectively. Evaluate the household's spending pattern from the perspective of utility maximization? Should it reallocate its spending? [L5, CLO2] 05
- In what circumstances the equilibrium quantity may vary from the socially optimal quantity of any good or service that are produced or consumed? Explain with examples. [L2, CLO1] 05
 - A price-taking firm produces laptops. The market price of a laptop is BDT 25000. The production cost information of the firm is given below. 05

Laptop per day	Total cost (BDT per day)
1	18,000
2	30,000
3	45,000
4	70,000
5	1,00,000
6	1,40,000

How many laptops should the firm produce per day to maximize its profit? [L3, CLO2]

4. (a) State the invisible hand principle as conceptualized by Adam Smith. [L1, CLO2] 02
- (b) Define 'Marginal Product of Labor' and state the 'Law of Diminishing Marginal Returns'. [L1, CLO1] 04
- (c) Explain the geometric and structural relationship between a firm's diminishing marginal product of labor and the upward-sloping portion of its short-run Marginal Cost (MC) curve. Why does one directly cause the other? [L4, CLO1] 04

Section B

There are **four** questions in this section. Answer any **three** questions.

1. (a) Define 'Gross Domestic Product (GDP)'. Briefly identify the four primary components that constitute aggregate expenditure ($Y = C + I + G + NX$) in a national economy. [L1, CLO5] 03
- (b) Explain the value-added method of calculating national output. Why does adding up the final gross sales value of every individual supplier in a production chain cause an inaccurate double-counting distortion? [L2, CLO5] 03
- (c) A national labor survey records the following macroeconomic performance indicators for a country with a total working-age population of 80 million: 04
 - Employed Individuals = 45 million
 - Unemployed Individuals (actively looking for work) = 5 million
 Calculate:
 - i) The total size of the Labor Force.
 - ii) The official Unemployment Rate.
 - iii) The Labor Force Participation Rate. [L3, CLO5]
2. (a) Define Globalization in an economic context. [L1, CLO5] 02
- (b) Explain the economic relationship between international trade, technology adoption, and the widening wage gap between skilled and unskilled workers. How does exposure to global markets shift the relative demand for these two types of labor? [L2, CLO5] 05
- (c) Suppose a country opens up to international trade. In its domestic manufacturing sector, the real wage for skilled workers rises from ₺800 to ₺1,000 per day, while the real wage for unskilled workers falls from ₺400 to ₺350 per day due to global competition. Calculate the percentage change in the wage ratio to quantify the widening inequality gap. [L3, CLO5] 03
3. (a) Define Capital Formation (investment) and distinguish clearly between physical capital and human capital. [L1, CLO5] 03
- (b) Using a financial market supply and demand diagram (the loanable funds framework) with the Real Interest Rate (r) on the vertical axis, show the initial market equilibrium (r^*). Illustrate graphically how a massive government budget deficit shifts the national saving curve and reduces capital formation. [L4, CLO5] 04
- (c) Suppose the government decides to cut down on wasteful administrative spending and uses that saved money to build a new city metro rail system instead. Discuss how better city transport helps local businesses become more productive? [L2, CLO5] 03
4. Write short notes on the following (any four) [L2, CLO 1] 2.5X4 = 10
 - (a) Cross-price elasticity of demand
 - (b) Human capital
 - (c) Limits to growth
 - (d) Budget deficit
 - (e) Fractional-reserve banking system

Khulna University, Khulna

Urban and Rural Planning Discipline

1st Year, Term-I Examination, Session 2025-2026

Course No. 0232 04 Eng 1171

Full Title of Course: Communicative English

Full Marks: 60

Time: 3 hours

- The figures in the margin indicate full marks.
- Use separate sheet for each section.

Section A

There are **four** questions in this section. Answer any **three** questions.

1. Read the following passage and answer the questions that follow:

Urban sprawl often leads to the degradation of agricultural land, but modern “Smart Growth” planning seeks to balance development with conservation. By prioritizing high-density housing near public transit hubs, planners can reduce a city’s carbon footprint and preserve the surrounding rural “greenbelts.” These green spaces are not just aesthetic; they provide essential ecosystem services, such as groundwater recharge and local food production. Effective regional planning requires a symbiotic relationship where the urban core offers economic opportunities while the rural periphery maintains the environmental health of the entire region. [L4, CLO1]

- (a) Which of the following best represents the main idea of the passage? 03

- I. Cities should expand as quickly as possible to boost the economy.
- II. Rural areas are more important than urban centres for survival.
- III. Sustainable planning requires protecting rural land while densifying urban areas.
- IV. Public transit is the only solution to urban sprawl.

- (b) What would be the best title for this paragraph? 03

- (c) Write four keywords used in the passage. 04

2. (a) Choose the correct answer in parentheses and write the correct sentence. [L1, CLO1] 1x5
=05

- I. Neither the teacher nor the students (has, have) arrived yet.
- II. Physics (is, are) a subject that requires a lot of logical thinking.
- III. The jury (was, were) divided in their opinions regarding the verdict.
- IV. Each of the participants (was, were) given a certificate of attendance.
- V. Five miles (is, are) too long a distance for me to run every morning.

- (b) Transform the following sentences as directed in the parentheses: [L3, CLO1] 1x5
=05

- I. In spite of being wealthy, he is very miserly. (compound)
- II. He was so tired that he could not walk. (simple)
- III. If you work hard, you will succeed. (compound)
- IV. I know the place where he lives. (simple)
- V. Hearing the noise, the boy woke up. (complex)

3. (a) Use should or must in the following. [L3, CLO1] 1x5
=05

- I. To enter the high-security lab, you ____ wear a protective suit at all times.
- II. You look pale; I think you ____ see a doctor this afternoon.
- III. Passengers ____ not smoke inside the airplane; it is strictly prohibited.
- IV. It is a beautiful movie; you ____ try to watch it if you have time.
- V. You ____ read if you want to achieve your goals.

- (b) Change the words according to the directions and make sentences with: [L6, CLO1] 1x5
=05

- i. Global (verb)
- ii. Creation (adjective)
- iii. Beautiful (noun)
- iv. Patient (adverb)

4. Read the passage carefully and answer the following questions: [L5, CLO3]

5x2
=10

Urban and rural planning plays a vital role in shaping the development and sustainability of a country. It refers to the process of designing and organizing land use, infrastructure, transportation, housing and public services in both cities and countryside areas. Proper planning ensures that the resources are used efficiently, living conditions are improved, and economic growth is balanced across regions. Without effective planning, both urban and rural areas can face serious challenges such as overcrowding, environmental degradation, and unequal access to basic services. In urban areas, planning is essential to manage the rapid growth of population and infrastructure. Cities often attract people in search of better employment, education, and healthcare opportunities. As a result, unplanned urban expansion can lead to traffic congestion, housing shortages, pollution, and inadequate public service. Urban planning helps address these issues by developing organized road networks, efficient public transportation systems, green spaces and well-structured residential and commercial zones. It also ensures that essential services such as water supply, sanitation, and waste management are accessible to all residents. On the other hand, rural planning focuses on improving the quality of life in villages and less developed regions. Many rural areas face challenges such as poor infrastructure, limited access to education and healthcare, and lack of employment opportunities. Through proper planning, governments and organizations can invest in better roads, irrigation systems, schools and healthcare facilities. Thoughtful planning ensures that natural resources such as forests, water bodies and agricultural land are preserved for future generations. It encourages the use of eco-friendly technologies, renewable energy, and proper waste management systems. By balancing development with environmental conservation, planning contributes to long-term sustainability.

Furthermore, effective planning promotes social equity by ensuring that all people, regardless of their location, have access to basic services and opportunities. It helps reduce the gap between urban and rural areas and support inclusive development. When both regions are developed in a balanced way, the overall progress of a country becomes more stable and resilient. In fact, urban and rural planning is essential for creating organized, sustainable, and liveable environments. It addresses the challenges of population growth, resource management and social inequality while promoting economic development and environmental protection. By investing in proper planning, societies can ensure a better quality of life for present and future generations.

- (a) What is urban and rural planning?
- (b) Why is urban planning important in cities?
- (c) How does rural planning improve village life?
- (d) What role does planning play in environmental protection?
- (e) How does planning promote social equity?

Section B

There are **four** questions in this section. Answer any **three** questions.

- | | | |
|----|--|------|
| 1. | (a) Define art of good speaking. [L1, CLO4] | 02 |
| | (b) Explain how to improve listening skills. [L2, CLO4] | 08 |
| 2. | (a) What is academic writing? [L1, CLO4] | 02 |
| | (b) Discuss the elements of academic writing. [L2, CLO4] | 08 |
| 3. | Write a paragraph on "Eco-friendly planning for Khulna". [L6, CLO3] | 10 |
| 4. | (a) Discuss the importance of listener-speaker rapport for congenial communication. [L2, CLO2] | 05 |
| | (b) Write two short notes on [L3, CLO1] | 2.5x |
| | i. Intonation and stress | 2=5 |
| | ii. Ethics in writing | |

Khulna University, Khulna

Urban and Rural Planning Discipline
1st Year, Term-I Examination, Session 2025-2026

Course No. 0541 04 Math 1173

Full Title of Course: Mathematics I

Full Marks: 60

Time: 3 hours

- The figures in the margin indicate full marks.
- Use separate sheet for each section.

Section A

There are **four** questions in this section. Answer any **three** questions.

- (a) Find the value of k so that the equation $kx^2 - 3y^2 - 7xy + 16x - 2y + 8 = 0$ may represent a pair of straight lines. [L4, CLO1] 02
 - (b) If the equation $x^2 - 5xy + 4y^2 + x + 2y - 2 = 0$ represents two straight lines, then find their equations, point of intersection and angles between them. [L4, CLO1] 05
 - (c) Find the equation of bisector of the angle between the straight lines represented by the equation $y^2 + xy - 2x - 5y + 6 = 0$. [L5, CLO3] 03
- (a) Find the conditions under which the general equation of second degree $ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$ represents (i) a parabola, (ii) a hyperbola, (iii) a rectangular hyperbola, (iv) an ellipse, and (v) a circle. [L1, CLO3] 03
 - (b) Trace the conic $8x^2 + 5y^2 + 4xy - 16x - 14y + 13 = 0$ and also find its center. [L4, CLO2] 03
 - (c) Reduce the equation $5x^2 + 2xy + 5y^2 + 10x - 22y + 29 = 0$ to its standard form. [L5, CLO3] 04
- (a) Which conic does the equation $16x^2 + 9y^2 - 24xy - 104x - 172y + 44 = 0$ represent? Reduce it to its standard form. Determine length and equation of latus rectum, equation of directrix and equation of axis. [L4, CLO3] 06
 - (b) Find the equation of the parabola whose focus is $(-2, -3)$ and whose directrix is the line $3x - 2y + 6 = 0$. [L5, CLO4] 04
- (a) Find the equation of the circle which passes through the points $(1,2)$, $(3,4)$ and touches the line $y + 3x = 3$. [L5, CLO3] 05
 - (b) One of two straight lines tangent to the parabola $y^2 = 4a(x + a)$ and other to the parabola $y^2 = 4b(x + b)$. If two tangents are perpendicular to each other then prove that $x + a + b = 0$. [L6, CLO3] 05

Section B

There are **four** questions in this section. Answer any **three** questions.

- (a) Define function with example. Draw the graph of the following functions and find the domain and range. [L2, CLO2] 04
 - i) $f(x) = |x + 3| + |x - 4|$
 - ii) $f(x) = x^2 - x + 6$
 - (b) Discuss the continuity and differentiability of the function [L3, CLO2] 06

$$f(x) = \begin{cases} 2x - 1 & \text{when } x \leq 2 \\ 3 & \text{when } -1 \leq x < 2 \text{ at } x = -1 \\ 1 - 2x & \text{when } x < -1 \end{cases}$$

2. (a) Use Leibnitz's theorem to find an equation connecting y_n , y_{n+1} and y_{n+2} where $y = (x + \sqrt{1+x^2})^2$. [L3, CLO4] 04
- (b) Define maxima of a function at a point. Find the extreme values of $f(x) = 2x^3 - 3x^2 - 12x$. [L1, CLO4] 03
- (c) Differentiate $\tan^{-1}\left(\frac{x}{\sqrt{1-x^2}}\right)$ with respect to $\sec^{-1}\left(\frac{1}{2x^2-1}\right)$. [L2, CLO2] 03
3. (a) Integrate $\int \frac{2x-5}{\sqrt{x^2+x+3}} dx$ [L4, CLO4] 03
- (b) Integrate $\int \frac{dx}{(2-x)\sqrt{4-x^2}}$ [L4, CLO4] 04
- (c) Evaluate $\int_0^{\frac{\pi}{2}} \frac{dx}{1+\sqrt{\cot x}}$ [L4, CLO4] 03
4. (a) Find a reduction formula for $\int \operatorname{cosec}^n x dx$ and hence evaluate $\int \operatorname{cosec}^5 x dx$. [L3, CLO3] 05
- (b) Find the area of the parabola $y^2 = 4ax$ cuts off by its latus rectum. [L6, CLO3] 05