



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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\*8526521010\*

**INDIA STUDIES**

**0447/02**

Paper 2 Case Studies

**May/June 2017**

**1 hour 45 minutes**

Candidates answer on the Question Paper.

No Additional Materials are required.

**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name in the boxes above.

Write in dark blue or black pen.

You may use a pencil for any rough working.

Do not use staples, paper clips, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

Answer **two** questions: select **one** from Section A and answer the one question in Section B. Answer in the spaces provided.

You are advised to spend about 40 minutes in answering Section A and about 50 minutes in answering Section B. The allocated time for the paper includes an allowance of about 15 minutes to think and plan your answers.

If additional space is required, you should use the lined pages at the end of this booklet. The question number(s) must be clearly shown.

The total mark for this paper is 60. The number of marks is given in brackets [ ] at the end of each question or part question.

Any rough work must be done in this booklet.

This document consists of **13** printed pages and **3** blank pages.











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**Section B**

Use the sources and your own knowledge to answer Question 3.

You are advised to spend about 50 minutes in answering Section B.

**Improving Environmental Sustainability in India: a problem-solving exercise**

**Source A**

About 1.2 billion people in developing nations lack clean, safe water because most household and industrial wastes are dumped directly, without appropriate chemical treatment, into rivers and lakes. This contributes to the rapid increase of waterborne diseases in humans, with India losing 73 million working days each year, and 1.5 million children are estimated to die from diarrhoea. Out of India's 3119 towns and cities, just 209 have partial treatment facilities, and only 8 have full waste-water treatment facilities. 114 cities dump untreated sewage and partially cremated bodies directly into the river Ganges. Downstream, the untreated water is used for drinking, bathing and washing. This river is typical of many rivers in India.

- 3 (a) Use Source A to help you explain **three** problems caused by untreated water in India.

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[6]

**Source B**

India is blessed with an abundance of sunlight, water, wind and biomass. It has the largest programmes for the development of these renewable energy resources. Solar energy is fast becoming popular in rural and remote areas. It is expected that the use of solar energy will minimise the dependence of rural households on firewood. India ranks as a 'wind super power', with many regions having large wind farms and India being the fifth largest producer in the world. Biogas plants have been established at municipal, cooperative and individual levels. The Gulf of Kachchh has provided the ideal location for tidal power and a 900 MW power plant has been set up there. Experimental projects have also been established to harness geothermal energy.

**The total amounts of energy produced from renewables in November 2014.**

<b>Energy Source</b>	<b>Total Installed Capacity (MW)</b>
Wind Power	22 465.03
Solar Power	3 062.68
Biomass Power	1 365.20
Waste to Power	1 365.20
<b>Total</b>	<b>28 258.11</b>





**Source C**

The Control of Environmental Degradation

**Approach 1 Water pollution:**

Every litre of waste water discharged by industry pollutes eight times the quantity of freshwater. The use of water for processing could be minimised by reusing and recycling it in two or more successive stages. Rainwater could be harvested to meet water requirements and hot water and effluents could be treated before releasing them in ponds and rivers.

**Approach 2 Air pollution:**

Particle matter in the air could be reduced by fitting smoke-stacks with filters. Smoke could be reduced by using oil or gas instead of coal in factories.

**Approach 3 Noise pollution:**

Machinery and equipment can be used and generators fitted with silencers. Almost all machinery can be redesigned to increase energy efficiency and reduce noise. Noise-absorbing material could be used apart from the personal use of ear-plugs and earphones.









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