C/18/DDE/MSc/Part-II/ENV/8

2018

M.Sc.

Part–II Examination

ENVIRONMENTAL SCIENCE

PAPER—VIII

Full Marks : 100

Time : 4 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *Q. No. 1* and any *five* questions from the rest.

1. Answer any *ten* questions : 10×2

(i) Why is natural gas known as cleanest fuel ?

(ii) Mention the idea of a 'large dam'.

(iii) What is 'Plasma' ?

(iv) Explain—'All energy directly or indirectly originates from nuclear energy'.

(v) What is green energy ?

(vi) How does the tidal energy is converted to electrical energy ?

(vii) What are the different types of fossil fuels ?

(viii) How does solar energy influence earth's climate ?

(ix) Write two negative impacts of large hydroproject.

(x) Write the relation between Sievert (Sv) and 'rem'.

(xi) What is MHD power generator.

(xii) Write four names of radiation monitoring devices.

(xiii) What are the impacts of global warming ?

(xiv) Write two basic differences between dry and wet natural gases.

(xv) What is OTEC ?

(xvi) Write down the chemical equation where glucose is formed by photosynthesis.

2. (a) Give a comparative account of environmental impact of fossilfueled power plant and hydroelectric plant.

(b) What are the advantages and disadvantages of using a solar pond as the thermal energy collector ? 8+8

3. (a) Why solar energy is called 'environmental friendly and independent' ?

(b) Write notes on (i) radiative zone and (ii) convective zone of the sun. 8+8

4. Give a general outline of ocean energy. How does tidal energy converted into electrical energy ? What are the advantages and disadvantages of tidal energy ? 7+3+6

5. (a) How wind power is transformed to electrical energy ?

(b) Describe the factors that determine placing of wind parks. 8+8

6. Write the characteristics of hazardous waste ? Why is radioactive waste a hazardous waste ? Give an outline of radioactive waste management and disposal. 6+2+8

7. (a) What is the principle of generating nuclear electricity ? Why is fusion not used till date for producing green electricity ?

(b) Give schematic diagram of nuclear reactor operation. 6+2+8

8. (a) Describe with a flowchart about different steps of refining of petroleum.

   (b) Write a short note on different types of coal based on its energy content ? 8+8

9. What are the resources of geothermal energy ? Narrate the geothermal energy use pattern in different countries of the world. 4+12

10. (a) Why is Sun the Earth's primary source of energy ?

    (b) Describe solar energy spectrum with graphical presentation. 8+8
