

2012

ENVIRONMENTAL SCIENCE

Time : 3 hours

Full Marks : 70

Instructions :

- (i) All questions carry equal marks.
 (ii) There are **NINE** questions in this paper.
 (iii) Attempt any **FIVE** questions.
 (iv) Question No. 1 is compulsory.

1. Choose the correct answer on any seven of the following :

~~(i)~~ The primary pollutant caused by incomplete combustion of organic matter is

- (i) ozone
 (ii) carbon monoxide
 (iii) sulphur dioxide
 (iv) None of the above

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~~(i)~~ The specified standard under US Ambient Air Quality standard for SO_2 , NO_2 and CO respectively are

- (i) $100 \mu\text{g}/\text{m}^3$, $10 \text{mg}/\text{m}^3$, $80 \mu\text{g}/\text{m}^3$
 (ii) $80 \mu\text{g}/\text{m}^3$, $100 \mu\text{g}/\text{m}^3$, $500 \mu\text{g}/\text{m}^3$
 (iii) $100 \mu\text{g}/\text{m}^3$, $80 \mu\text{g}/\text{m}^3$, $10 \text{mg}/\text{m}^3$

~~(i)~~ \rightarrow $80 \mu\text{g}/\text{m}^3$, $100 \mu\text{g}/\text{m}^3$, $10 \text{mg}/\text{m}^3$
 (0.08ppm) (0.05ppm) ($10 \mu\text{g}/\text{m}^3$)
~~(i)~~ The depletion of ozone in the outer atmosphere may result in increased

- (i) heart attack cases
~~(ii)~~ skin cancer cases
 (iii) asthma cases

(iv) None of the above akubihar.com

~~(i)~~ The rain is generally termed as acidic if pH value of rain water falls below

- (i) 3
 (ii) 5
~~(iii)~~ 7
 (iv) 8

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The specified standard for SO_2 under US Ambient Air quality standard is $80 \mu\text{g}/\text{m}^3$.

This is approximately equal to

- (i) 0.03 p.p.m.
- (ii) 0.05 p.p.m.
- (iii) 0.08 p.p.m.
- (iv) 8 p.p.m.

11. Ozone Layer in the upper atmosphere is getting destroyed owing to its reaction with

- (i) CO_2
- (ii) hydrogen peroxide
- (iii) oxides of nitrogen
- (iv) chlorofluorocarbon

12. The acid rain caused by the following pollutants

- (i) SO_2 and O_3
- (ii) SO_2 and NO_x
- (iii) NO_x and O_3
- (iv) CO and SO_2

13. To express sound levels in decibels, sound pressure levels are usually adopted on a reference scale of

- (i) $10 \mu\text{Pa}$
- (ii) $20 \mu\text{Pa}$
- (iii) $50 \mu\text{Pa}$
- (iv) $100 \mu\text{Pa}$



The most common cause of acidity in water is

- (i) CO_2
- (ii) oxygen
- (iii) hydrogen
- (iv) nitrogen

14. Ground water is usually free from

- (i) suspended impurities
- (ii) dissolved impurities
- (iii) Both (i) and (ii)
- (iv) None of the above

2. (a) What are the major air pollutants? Discuss their sources and effects.

(b) What is acid rain? Write its effects and methods to control.

3. (a) Discuss steps to control noise pollution. Also discuss the policy made by the government in order to combat noise pollution.

(b) How does energy flow take place in an ecosystem? Discuss 10% energy rule of energy flow.

4. (a) Explain the concept of biodiversity. Also discuss the importance of biodiversity.

(b) Explain the role of decomposers in the ecosystem.

5. ~~Q~~ Discuss about the importance of hydrologic cycle in the environment. Also write about the various loops involved in the hydrologic cycle.

(b) Define the following terms :

~~Q~~ (i) Green water

~~Q~~ (ii) Blue water

~~Q~~ (iii) Ozone hole

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~~Q~~ (iv) Sustainable development

(v) Vermicomposting

~~Q~~ (vi) Greenhouse gases

~~Q~~ (vii) Layers of atmosphere

6. ~~Q~~ Discuss the various disposal methods adopted for waste disposal. Also discuss the advantages and disadvantages of incineration method.

(b) Discuss briefly the impacts of anthropogenic activities on our environment.

7. ~~Q~~ Define toxicity and explain their adverse impacts on human beings by citing few examples of toxicants.

~~Q~~ Giving suitable examples, differentiate a food chain and a food web in an ecosystem.

8. ~~Q~~ Briefly discuss on impacts of climate change on global environment.

(b) Explain how particulate matters can harm human respiratory system.

9. Write short notes on any four of the following :

~~Q~~ Soil pollution

~~Q~~ Ground water pollution

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~~Q~~ Ozone layer depletion

~~Q~~ Conservation of biodiversity

~~Q~~ Renewable and non-renewable sources of energy

~~Q~~ Global warming

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