

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2008–09)

SUBJECT CODE: CH/ME/EC34

B.Sc. DEGREE EXAMINATION, NOVEMBER 2009
BRANCH IV- CHEMISTRY
THIRD SEMESTER

REG.NO

COURSE : MAJOR ELECTIVE

PAPER : ENVIRONMENTAL CHEMISTRY

TIME : 30 MINUTES

MAX.MARKS : 30

SECTION – A

(30x1=30)

ANSWER ON THE QUESTION PAPER ITSELF:

Answer all the questions:

Choose the correct answer the following:

- The lower region of the atmosphere which extends upto 100 Km is _____.
a) Homosphere b) Heterosphere c) Exosphere d) mesosphere
- _____ gas combines rapidly with hemoglobin and reduces blood capacity for carrying oxygen.
a) CO_2 b) CO c) SO_2 d) NO_2
- The contamination of water by _____ causes Typhoid Fever.
a) Salmonella b) Vibrio Cholerae c) Shigella d) Entamoeba
- _____ is the primary pollutant released from tanneries.
a) Cr b) acids c) smoke d) fly ash
- _____ vapour causes damage to the central nervous system
a) Hg b) Cr c) As d) Cd

Fill in the blank:

- _____ is the antidote for arsenic poisoning.
- The common trace metal present in superphosphate fertilizers is _____.
- Water samples with _____ BOD value are considered to be polluted.
- By anaerobic fermentation in paddy fields _____ gas is emitted.
- Dissolved oxygen can be removed by using _____.

State whether the following statements are true or false.

- Terpene hydrocarbons are emitted in significant quantities by plants and animals.
- In exosphere, ozone formation takes place.
- Peroxy benzoyl nitrate is not poisonous than peroxy acyl nitrate.
- Wilson's diseases is caused by the excessive concentration of copper in the tissues.
- Fluorosis causes hypermineralisation of skeleton and painful joints in human beings.

Match the following:

- | | | | |
|-----|-------------------------------------|---|--------------------------------|
| 16. | Solar radiation reflected by clouds | – | sort formation. |
| 17. | Anthracite | – | Albedo. |
| 18. | Linear alkyl Sulfonates | – | Carcinogen. |
| 19. | Asbestos | – | Sodium formaldehyde sulfoxide. |
| 20. | Hg poisoning | – | biodegradable. |

Answer in a line or two:

21. What is stratopause?
22. Define Lapse rate.
23. What is the origin of NO_x pollution?
24. Define aerosol with an example.
25. What are the additives that are used as brighteners and solubllisers?
26. What is BOD? Mention its significance.
27. Name any two carcinogens released from dyeing industries along with their carcinogenic effect.
28. What is a mutagenic substance?
29. What are the main constituents of Smog?
30. Define L.D.₅₀ value.



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TIME : 2½ HOURS

MAX.MARKS : 70

SECTION – B

5X6=30

Answer any five questions.

1. Discuss the composition of soil.
2. How is the green house effect produced? Mention any four sources of Green house gases.
3. Write short notes on sources and characteristics of effluents from tannery and detergents industries.
4. Explain indoor air pollution with examples.
5. What is eutrophication? Explain the types and control of eutrophication.
6. What are the measures to be taken to control the emission of NO_x and SO_x .
7. Write a note on Bhopal gas tragedy.

SECTION – C

2X20=40

Answer any two questions.

8. Briefly explain the segments of the environment.
9. Write short notes on the following:
 - a) acid rain and its adverse effects.
 - b) CFC's – consequences and alternatives.

(10+10)
10.
 - a) Discuss the various steps involved in the treatment of municipal and domestic waste water.
 - b) How is the Fluoride and dissolved oxygen content in water estimated?

(10+10)
11.
 - a) Briefly explain the following
 - (i) Love canal episode
 - (ii) Itai Itai disease

(8)
 - b) Explain the toxicity of DDT and cadmium. (6)
 - c) Discuss Hydrological cycle. (4)

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