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(92 & A-34)

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SARDAR PATEL UNIVERSITY

M.Sc. 4th Semester (Surface Coating Technology) Examination (CBCS)

Tuesday, April 12th, 2016

Time: 2:30 p.m. to 5:30 p.m.

PS04ESCT02: *Environmental Management.*

Total Marks: 70

N.B. (1) *Marks allotted to the question are on its RHS*
(2) *Illustrate your answers wherever necessary with the help of neat sketches & chemical equations*

Q.1 Choose the correct answer from the followings: [08]

1. Environmental pollution refers to_____.
   a. peeling of top soil
   b. dissipation of energy
   c. release of toxic/undesirable materials in environment
   d. None of the above

2. Which of the following is NOT the principle of green chemistry?
   a. Maximizing atom economy
   b. Increasing by-products
   c. Designing degradable chemical products
   d. Using catalysts

3. Particulate matter in atmosphere are known as____
   a. Aerosols b. Plastisols c. Organosols d. None of these

4. In the case were carbon dioxide is used as a carbon-source building block, if the CO_2 were made from burning fossil fuels it would be considered as _____
   a. depleting b. renewable c. both a & b d. none of these

5. Photochemical smog is related to pollution of _____.
   a. air b. water c. soil d. all of these

6. Acid rain caused due to _____ .
   a. Ozone and dust b. CO_2 and CO c. SO_3 and CO d. SO_2 and NO_2

7. In which process decomposition of organic waste is done by exposing it to high temperature in absence of oxygen?
   a. Incineration b. Pyrolysis c. Gasification d. none of these

8. Which of the following reaction consider as 100 % atom economical?
   a. Addition b. Substitution c. Elimination d. None of these

Q.2 Answer *Any Seven* of the following short questions: [14]

1. List the tools of Green Chemistry.
2. Explain atom economy and % yield?
3. From a green chemistry standpoint, what would be advantages and disadvantages are of using a solvent that is volatile versus one that is not?
4. What is a renewable and depleting feedstock? Give its example.
5. Explain how waste reduction, waste reuse and waste recycle are the preferred option for solid waste management?
6. What are harmful effects of acid rain?
7. List the various air pollution control methods.
8. Write about benefit of ISO 14001 certification.
9. Give an example of local and global environment problem.

(P.T.O.)

Q.3 a	Define Green Chemistry and write a note on principles of it.	[06]
Q.3 b	Explain the different general types of chemical transformation and rank in order of most atoms economical.	[06]
	OR	
Q.3 b	Write a note on Green Solvent.	[06]
Q.4 a	Explain in detail real-time, in-process analysis beneficial to green chemistry.	[06]
Q.4 b	Write a note on 'Evaluating feedstock and starting materials' with respect to green chemistry concept.	[06]
	OR	
Q.4 b	How does a chemist evaluate a chemical product or process for its effect on human health and the environment?	[06]
Q.5 a	Discuss in detail how waste minimization can be done by Paint manufacturer?	[06]
Q.5 b	Write a note on ISO 14000 series.	[06]
	OR	
Q.5 b	Write a note on component of an Environment Management System.	[06]
Q.6 a	Discuss in detail about Green House Effect.	[06]
Q.6 b	Write a note on BOD and COD.	[06]
	OR	
Q.6 b	Write a note on thermal treatment processes for solid waste management.	[06]

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