END TERM EXAMINATION
End-Semester, May-2016

Subject Code: BAS 106	Subject: Environmental Sciences
Time : 3 Hours	Maximum Marks : 60

Note: Attempt five questions in all.
Question No. 1 is compulsory. Attempt one question from each of the Units I, II, III & IV.

Q1. (2x10=20)

(a) What do you mean by timber extraction?
(b) Comment on the fertilizer problems on environment.
(c) Explain the term non-renewable energy.
(d) Enlist four common air pollutants.
(e) What do you understand with the term nuclear waste?
(f) Write in brief the atom economy with respect to Green chemistry.
(g) Report about the gross and net calorific values of a fuel.
(h) Explain the term geo thermal energy.
(i) Write four biochemical effects of mercury and chromium.
(j) Comment on biodegradable polymers.

UNIT-I

Q2. (5,5)
(a) Discuss about the environmental effects of extracting mineral resources.
(b) Give details of biodiversity conservation and comment on the problems in achieving it.

Q3. (5,5)
(a) Discuss the effects of overutilization of surface and ground water.
(b) What do you understand with the environment impact assessment?

UNIT-II

Q4. (5,5)
(a) What is photochemical smog? Report its role in environmental pollution.
(b) Write about the primary and secondary treatment of waste water.

Q5. (5,5)
(a) Gove details of carbon credits and report its significance in the industrial pollution.
(b) What do you know about zero waste technology? Give its importance in Green technology.

UNIT-III

Q6. (5,5)
(a) Discuss the determination of caloric value of a liquid fuel with the help of Boy's Gas calorimeter.
(b) Explain the thermal and catalytic cracking of fuels.

Q7. (5,5)
(a) How do you obtain coke by Otto-Hoffman oven method?
(b) Give details of alternate energy sources. Comment on biodiesel and biomass energy.

UNIT-IV

Q8. (5,5)
(a) Illustrate the impact of toxic chemicals on enzymes.
(b) Write about the condensation polymerization. Give suitable example also.

Q9. (5,5)
(a) Discuss about the biochemical effects of pesticides on environment.
(b) Give details of photo biodegradable polymers. Mention their meritorious properties.

(Please write your Enrollment Number) Enrollment No. 026

END TERM EXAMINATION
(May, 2018)

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Time : 3 Hours	Maximum Marks : 60

Note: Q1 is compulsory. Attempt one question each from the Units I, II, III & IV. Various scientific symbols have their usual meanings.

Q1 Attempt any five (4x5=20)
(a) What is Atom Economy? Explain it with suitable example
(b) What are the advantages of Catalytic Cracking over Thermal Cracking?
(c) Explain the Formation of Acid Rain
(d) Explain the following terms with suitable examples.
(1) Antagonism (2) Synergism
(e) Give the importance of use of Promoters and Photosensitisers in polymers.
(f) Discuss the concept of Conflicts Over river Water in Indian scenario.

UNIT-I

Q2 (5,3,2)
(a) Explain the Threats to Biodiversity.
(b) What do you understand by surface mining and sub-surface mining processes?
(c) Explain the term Desertification.

Q3 (5,3,2)
(a) Discuss the harmful effects of Fertilizers and Pesticides on Modern Agriculture.
(b) How is Under Nutrition different from Malnutrition
(c) How is Water Harvesting practiced in India?

UNIT-II

Q4 (5,5)
(a) What is Photochemical Smog? Describe the Chemistry involved in its formation.
(b) How are the impurities removed from waste water using secondary and Tertiary Treatment process?

(Please write your Enrollment Number) Enrollment No. 03501022016

END TERM EXAMINATION
(May, 2017)

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Note: Q. 1 is compulsory. Attempt any One question from the each unit I, II, III and IV.

Q1. (2x10= 20)

(a) Distinguish between renewable and non-renewable energies with examples.
(b) What are the negative impacts of timber extraction?
(c) What do you understand by Natural and Artificial sequestration?
(d) Chemists sometimes refer to "by-products" rather than "waste". List one advantage of using this term.
(e) How is the red hot coke quenched in Otto Hoffmann's process of carbonization?
(f) How is bio diesel obtained from vegetable oil? What is its importance?
(g) "Dose makes the poison". Comment.
(h) What do you understand by the term "bioplastics". Discuss one method used to produce bioplastics.
(i) List one positive and one negative impact of developing a project in an area.
(j) Why is it necessary to remove "S" compounds from oil and natural gas?

UNIT-I

2. (5,5)

(a) Write short notes on:
(i) Soil erosion (ii) Desertification.
(b) What are the major approaches to conserve water resource? How is water harvesting practiced in India?

3. (3,4,3)

(a) Discuss the impacts of dams on the forests and tribal people.
(b) What do you understand by surface mining and sub-surface mining give examples?
(c) What is meant by EIA? Why is it necessary to have EIA before the development of any project?

UNIT-II

4. (6,2,2)

(a) Describe sources, sinks, harmful effects and methods to control NO_x and SO_x
(b) What are the advantages of Sanitary Landfills?
(c) What do you understand by the term "Green Starting Materials".

5. (3,3,4)

(a) Write short notes on:
(i) Primary and Secondary air pollutants.
(ii) Activated Sludge Process.
(b) How are hazardous waste classified? Mention physical processes to remove hazardous waste.

UNIT-III

6. (4,6)

(Please write your Enrollment Number) Enrollment No._____ 17

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Note: Q1 is compulsory. Attempt one question each from the Units I, II, III & IV. Various scientific symbols have their usual meanings.

Q1 Attempt any five **(4x5=20)**

(a) What is Atom Economy? Explain it with suitable example
(b) What are the advantages of Catalytic Cracking over Thermal Cracking?
(C) Explain the Formation of Acid Rain
(d) Explain the following terms with suitable examples.
(1) Antagonism (2) Synergism
(e) Give the importance of use of Promoters and Photosensitisers in polymers.
(f) Discuss the concept of Conflicts Over river Water in Indian scenario.

UNIT-I

Q2 **(5,3,2)**

(a) Explain the Threats to Biodiversity.
(b) What do you understand by surface mining and sub-surface mining processes?
(c) Explain the term Desertification.

Q3 **(5,3,2)**

(a) Discuss the harmful effects of Fertilizers and Pesticides on Modern Agriculture.
(b) How is Under Nutrition different from Malnutrition
(c) How is Water Harvesting practiced in India?

UNIT-II

Q4 **(5,5)**

(a) What is Photochemical Smog? Describe the Chemistry involved in its formation.
(b) How are the impurities removed from waste water using secondary and Tertiary Treatment process?

Q5 **(4,3,3)**

(a) Discuss Zero Waste Technology with suitable examples.
(b) Explain the concept of Carbon credits discussing its applicability for Indian scenario.
(c) What is CO_2 sequestration? How CO_2 is sequestered artificially?

UNIT-III

Q6 **(5,5)**

(a) What is Regenerative Principle of Heat Economy? How is it used in manufacture of coke?
(b) A boiler is fired with a coal with composition: C=75 %, H=9%, S=2%, O=4%, N=3%, Ash=7%: calculate (i) Gross and Net Calorific Value of 1 kg of coal (latent heat of steam = 587 kcal/kg), (ii) minimum theoretical air required for combustion of 1 kg of coal (by weight and by volume) (iii) Percentage composition of dry flue gas, if 25% excess air is used. (Gross C.V. in kcal/kg: C=8080; H=34500; S=2240)

Q7 **(5,3,2)**

(a) A gaseous fuel has the following composition by volume. CH_4 =5%; H_2=20%; CO=25%; CO_2= 6%, and rest nitrogen. If 20 % excess air is used for combustion, then calculate volume of air supplied per m^3 of fuel and composition of dry flue gases.
(b) Explain the following (i)Biodiesel (ii) Power Alcohol
(c) What is the relation between chemical structure and knocking in petrol engine?

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UNIT-IV

Q8

(a) Enumerate various forms of Mercury (Hg). Describe its sources and Biochemical Effects. **(5,5)**

(b) Differentiate between Hydro-Biodegradable and Photo-Biodegradable Polymers. Give the mechanism of degradation of Photodegradable Polymers.

Q9

(a) Write a short note on the following terms by giving suitable examples. **(5,5)**

(i) Acute Toxicity and Chronic Toxicity

(ii) Explain the term ED_{50} and TD_{50} in toxicology

(b) Discuss the thermal degradation of plastics during the recycling process.