*Total No. of Questions: 6* *Total No. of Printed Pages:3*

**Enrollment No.....**

# Faculty of Engineering

## End Sem (Odd) Examination Dec-2017

## EN3HS03 Environmental Sciences

Programme: B.Tech. Branch/Specialisation: All

**Duration: 3 Hrs.** **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. E.F.A. widely used in the analysis of sustainability. E.F.A. is…….. **1**

(a) Ecological footprint analysis
(b) Environmental footprint analysis
(c) Economical footprint analysis
(d) Ecosystem footprint analysis

ii. The "triple bottom line" of sustainability includes: **1**

(a) Ecological, social and economic factors
(b) Architectural, engineering and financial factors
(c) Human, animal and plant factors
(d) All of these

iii. The unit of measurement of ozone concentration is _____ **1**

(a) Milligram (b) Dobson Units
(c) Microgram (d) Picogram

iv. Carbon footprint can be reduced by **1**

(a) Drive a low carbon vehicle
(b) Car pooling
(c) Eat locally and organic food
(d) All of these

v. _____ is an example of Ex-situ conservation of biodiversity **1**

(a) Zoo (b) Botanical gardens
(c) Gene Banks (d) All of these

P.T.O.

| | | | |
|---|---|---|---|
| | vi. | Which of the following is responsible for desertification?<br>(a) Deforestation (b) Mining<br>(c) Overgrazing (d) All of these | **1** |
| | vii. | The term ecosystem was first proposed by<br>(a) A.G. Tansley (b) P.A. Tweiter<br>(c) A.G. Raman (d) C.P. Tansley | **1** |
| | viii. | Autotrophs are the …… producer<br>(a) Secondary (b) Tertiary (c) Primary (d) None of these | **1** |
| | ix. | Which one is not related with green computing?<br>(a) Recyclability (b) Energy efficiency<br>(c) Wireless system (d) Environmental friendly | **1** |
| | x. | Which of the following is India's own green building certification rating system<br>(a) LEED India (b) GRIHA (c) BEE (d) All of these | **1** |
| Q.2 | i. | Write significance of environmental education. | **2** |
| | ii. | State the difference between organic farming and sustainable agriculture. | **3** |
| | iii. | What is EIA? Describe various steps involved in EIA process. | **5** |
| OR | iv. | Write a detail note on clauses and section of water act. | **5** |
| Q.3 | i. | Write short note on Kyoto protocol. | **4** |
| | ii. | Describe various techniques of solid waste management. | **6** |
| OR | iii. | What is acid rain? Discuss its effects and also write its prevention methods. | **6** |
| Q.4 | i. | What is salination? | **2** |
| | ii. | Write short note on renewable energy sources. | **3** |
| | iii. | Discuss sources, effects and control of water pollution. | **5** |
| OR | iv. | Write a detail note on sources, effects and control of air pollution. | **5** |
| Q.5 | i. | How energy flows in an ecosystem? | **2** |
| | ii. | Write short note on food web. | **3** |



| | | | |
|---|---|---|---|
| | iii. | Discuss various factors responsible for loss of biodiversity. | **5** |
| OR | iv. | How can we conserve biodiversity? Explain in detail. | **5** |
| Q.6 | | Attempt any two: | |
| | i. | What are the features and types of hybrid vehicle technology? | **5** |
| | ii. | What is the need of HVAC system? How it works? | **5** |
| | iii. | Discuss criteria, level, significance of LEED with suitable example. | **5** |

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EN3HS03 Environmental Sciences

## Marking Scheme

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|---|---|---|---|
| Q.1 | i. | (a) Ecological footprint analysis | **1** |
| | ii. | (a) Ecological, social and economic factors | **1** |
| | iii. | (b) Dobson Units | **1** |
| | iv. | (d) All of these | **1** |
| | v. | (d) All of these | **1** |
| | vi. | (d) All of these | **1** |
| | vii. | (a) A.G. Tansley | **1** |
| | viii. | (c) Primary | **1** |
| | ix. | (c) Wireless system | **1** |
| | x. | (d) All of these | **1** |
| Q.2 | i. | Min 4 points (1/2 marks each) (1/2 mark * 4 = 2 marks) | **2** |
| | ii. | Min 6 points (1/2 mark each) (1/2 mark * 6 = 3 marks) | **3** |
| | iii. | EIA- 1 mark,<br>Various steps involved in EIA -4 marks | **5** |
| OR | iv. | Min 10 points (1/2 mark each) (1/2 mark * 10 = 5 marks) | **5** |
| Q.3 | i. | Kyoto protocol-1 mark<br>Mech-3 marks | **4** |
| | ii. | Six methods with detail-1 mark each (1 mark * 6 = 6 marks) | **6** |
| OR | iii. | Definition-1 mark<br>Six effect-3 marks (1/2 mark * 6 = 3 marks)<br>Four prevention-2 marks (1/2 mark * 4 = 2 marks) | **6** |
| Q.4 | i. | Definition-1 mark<br>Detail-1 mark | **2** |
| | ii. | Three sources with explaination-1mark each<br>(1 mark * 3 = 3 marks) | **3** |
| | iii. | Two sources-1 mark (0.5 mark * 2 = 1 mark)<br>Four effects-2 marks (1/2 mark * 4 = 2 marks)<br>Four control-2 marks (1/2 mark * 4 = 2 marks) | **5** |
| OR | iv | Two sources-1mark (0.5 mark * 2 = 1 mark)<br>Four effects-2 marks (1/2 mark * 4 = 2 marks)<br>Four control-2 marks (1/2 mark * 4 = 2 marks) | **5** |
| Q.5 | i. | Flow sheet-1 mark<br>Detail-1 mark | **2** |
| | ii. | Diadram-2 marks<br>Detail/significance-1 mark | **3** |
| | iii. | Five points with explaination-1 mark each (1 mark * 5 = 5 marks) | **5** |
| OR | iv | Five points with explaination-1 mark each (1 mark * 5 = 5 marks) | **5** |
| Q.6 | | Attempt any two: | |
| | i. | Two features -1 mark<br>Series- figure – 1 mark<br>Detail -1 mark<br>Parallel figure – 1 mark<br>Detail – 1 mark | **5** |
| | ii. | Two points need-1 mark<br>Diagram-2 marks<br>Working-2 marks | **5** |
| | iii. | Four points criteria-1 mark<br>Level-2 marks<br>Two significance-1 mark<br>Two example -1 mark | **5** |

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