CBCS SCHEME

USN | | | | | | | | | |

17CV562

Fifth Semester B.E. Degree Examination, Aug./Sept.2020
Sustainability Concepts in Engineering

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. Define Sustainability. Illustrate the three pillar model of sustainability. **(10 Marks)**

b. Explain any ten sustainable development goals put forth by United Nations Development Group. **(10 Marks)**

OR

2 a. What are the challenges for sustainable development in out country and suggest some solutions to overcome the same. **(10 Marks)**

b. Explain Environment , Air and Water Acts of India. **(10 Marks)**

Module-2

3 a. Explain IPAT model to assess environmental impact and also discuss its significance. **(10 Marks)**

b. What is Biomimicry? Explain various types of biomimicking with examples. **(10 Marks)**

OR

4 a. Explain the biotic and abiotic factors effects the climate change. **(10 Marks)**

b. Demonstrate the basic concept of Life Cycle Assessment and process, with an example. **(10 Marks)**

Module-3

5 a. Explain the concept of green building. How it satisfy the concept of sustainable habitat. **(10 Marks)**

b. What are the advantages of use of green building materials in building construction? Explain different green building materials and general selection criteria's. **(10 Marks)**

OR

6 a. What are parameters considered in Green building certification by GRIHA and IGBC? Briefly explain. **(10 Marks)**

b. Discuss the importance of Energy efficient building design. Explain Passive solar design technique. **(10 Marks)**

Module-4

7 a. Explain Conventional and Non – conventional energy sources and also discuss the advantages of solar power with respect to sustainability. **(10 Marks)**

b. With neat sketch, explain fuel cells and also discuss the benefits of them align with sustainability. **(10 Marks)**

OR

8 a. Write a short notes on : (10 Marks)
i) Wind Energy ii) Geothermal Energy.
b. How Energy can be derived from oceans and also discuss their advantages and disadvantages? (10 Marks)

Module-5

9 a. Discuss the effective green practices for sustainable industrialization. (10 Marks)
b. How energy nexus poverty? What are the most urgent and severe social issues? (10 Marks)

OR

10 a. What is Industrial Symbiosis? How it accelerates the transition from a linear system towards a circular system of product cycle? (10 Marks)
b. What is Pollution Prevention? What are the approaches for pollution prevention? (10 Marks)

* * * * *