

Dy - Anurag

Roll No:

22/11/2023

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# National Institute of Technology, Hamirpur (H. P.)

Name of the Examination: B.Arch. Fifth year

Branch : Architecture

Semester : 9<sup>th</sup> Sem

Course Name : Energy Efficient Architecture

Course Code: AR-512

Time: 03 Hours

Maximum Marks: 50

Note: All questions are compulsory. Students are allowed to bring Table 4.3 – 4.13, Table 4.16-4.20 of ECBC 2017, Table 11.1 of ECBC 2007 and Page 28-29 of IS:3792-1978.

1. What is a green rating system? List various criteria and their suggested points obtained under GRIHA rating system. 8
2. Discuss in detail the procedure used to rate a residential building under Eco Niwas Samhita. Also discuss the provisions of SVAGRIHA. 10
3. Briefly discuss various schemes/programs under BEE. Also discuss their impact on energy savings. 10
4. Discuss the BEE star rating scheme for a BPO buildings. Support your answer through suitable examples. 5
5. A proposed shopping complex of plinth area 60m x 30 m having longer side facing north-south is proposed at Bangalore. There are a total of 5 storeys having 4m clear height and 120m<sup>2</sup>, 40m<sup>2</sup> and 40m<sup>2</sup> window area in each of south, east and west direction respectively with a window height of 2 m. Calculate suitable details for the following:
  - a. Provide suitable ECBC complaint roof, windows and walls specifications. 9
  - b. Due to some reason, the above specification for roof material (as identified at section a) could not be met, then provide alternative specifications as Trade Off for ECBC compliance. 8