Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec– 2017**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **14EE3054** | **Duration :** | **3hrs** |
| **Sub. Name :** | **PASSIVE SOLAR ARCHITECTURE** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Give the procedural study of site selection for good solar exposure for the solar panels. | CO1 | 15 |
| b. | Define and explain heat gain. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Give the significance of Passive Solar Architecture on Air-conditioning system. | CO1 | 10 |
| b. | Describe about wind scoops and earth cooling tubes with neat sketch. | CO1 | 10 |
|  |  |  |  |  |
| 3. |  | Summarize the Energy management opportunities for the building envelope to reduce heat losses due to conduction, convection and radiation. | CO3 | 20 |
| (OR) | | | | |
| 4. |  | Explain energy management and economics of solar energy in energy efficient building. | CO2 | 20 |
|  |  |  |  |  |
| 5. | a. | What are the effects of thermal mass in heating and cooling systems? | CO2 | 10 |
|  | b. | Write about the Insulation techniques for moisture infiltration and air infiltration. | CO2 | 10 |
| (OR) | | | | |
| 6. |  | Estimate the building loads with heat loss calculation in detail. | CO3 | 20 |
|  |  |  |  |  |
| 7. |  | Write down various passive concepts appropriate for the various climatic zones in India. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Demonstrate the principles and structure of passive solar heating and cooling with necessary diagrams. | CO2 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Explain passive cooling technologies appropriate for various climatic conditions. | CO3 | 20 |

ALL THE BEST