STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2016 – 17& thereafter)

SUBJECT CODE: 16VS/VM/PA56

B.Voc. DEGREE EXAMINATION, NOVEMBER 2019
SUSTAINABLE ENERGY MANAGEMENT
FIFTH SEMESTER

COURSE : MAJOR CORE
PAPER : GREEN BUILDING AND PASSIVE ARCHITECTURE
TIME : 3 HOURS **MAX.MARKS:100**

SECTION – A

ANSWER ALL QUESTIONS: **(20x1=20)**

I. Choose the correct answer:

1. The building energy use index is usually expressed as
   (a) KWh/m^2/year (b) Wh/m^2/year
   (c) KWh/m/year (d) None of the above
2. Mortar for Masonry contains
   (a) Lime (b) Sand (c) Gypsum (d) All the above
3. Active solar heating systems are comprised of
   (a) Collectors (b)Distribution system
   (c) Storage system (d) All the above
4. Cooling load in a building can be affected by
   (a) Building design (b) Outdoor weather conditions
   (c) Internal equipments (d) All the above
5. Which of the following is/are Green material(s)?
   (a) Cordwood (b) Thatch (c) Cork (d) All the above

II. Fill in the blanks:

6. The unit of heat loss parameter is _____.
7. Trome walls can be made of _____.
8. The expression for efficiency of a collector in an active solar heating system is _____.
9. A heat pump is a device that transfers heat energy from _____ to _____.
10. Indoor environment is affected by _____.

III. Answer in a sentence or two:

11. What is fenestration?
12. What are zero energy buildings.
13. Define thermal comfort.
14. What do you mean by direct heat gain?
15. What are the uses of solar heaters?

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16. What is a space heater?
17. How do you calculate cooling requirements for a room?
18. What is an absorption refrigerator?
19. What are green buildings?
20. Define GRIHA rating system.

SECTION – B

ANSWER ANY FOUR QUESTIONS: (4X10=40)

21. Write a note on energy efficiency of a building and its significance.
22. Explain the factors influencing the thermal comfort.
23. Explain the working of air based active solar space heating system with neat diagram.
24. Write a short note on solar cooling systems.
25. What is IGBC rating system? Explain.
26. What is a heat pump? How does it work?

SECTION – C

ANSWER ANY TWO QUESTIONS: (2x20=40)

27. Explain the how to calculate heating loads of a building.
28. Draw bioclimatic chart and explain the features and challenges of bioclimatic buildings.
29. Explain the sizing, installation and maintenance of solar water heaters.
30. Discuss the features and integrated ecological design of green buildings.

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