

AR327 – Green Architecture

Date: Monday (24/10/2022)
Time: 8.20am
Room: Studio 1
Duration: 3 hours

Instruction to Candidates:

- 1.0 You have 10 minutes to read the paper.
You must not begin writing during this time.
- 2.0 All answers must be written on the answer book(s) provided
- 3.0 Print your name and student identification number on the answer book(s) provided.
Do it now.
- 4.0 No reference material is allowed in the examination room.
- 5.0 No mobile phones allowed.
- 6.0 Attempt All Questions

Question No.1 (3 marks)

Green building is an integral part of sustainable architecture. Explain how this is the case, highlighting the main goals of green building.

Question No.2 (4 marks)

Suggest some strategies on how architects can contribute to the promotion of green building.

Question No.3 (10 marks)

Green building focuses mainly on these five areas:

- (i) Sustainable sites
- (ii) Indoor air quality
- (iii) Materials and resources
- (iv) Energy
- (v) Water management

Briefly explain each of the five (5) areas listed above, highlighting their importance in achieving green building objectives.

Question No.4 (11 marks)

- (a) What is the purpose of establishing Green Building Rating Systems, explain their benefits (3 marks)
- (b) Name three (3) of these Green Building Rating Systems, highlighting their country of origin (6 marks)
- (c) Name the first Green Building Rating System that was launched and its country of origin. (2 marks)

Question No.5 (4 marks)

Passive design can mean *passive heating* or *passive cooling*. Explain the differences.

Question No.6 (3 marks)

Energy used in buildings located in extreme climates to achieve thermal comfort objectives can be very costly. Explain why this normally the case.

Question No.7 (3 marks)

Understanding the prevailing climate of a site through the process of site analysis is important. Explain why this is a crucial task in building design.

Question No.8 (3 marks)

Why are ecosystems crucial in ensuring the health of the natural environment?

Question No.9 (3 marks)

The use of natural daylighting in providing illumination in buildings should be a useful and worthy strategy in green building. Explain.

Question No.10 (4 marks)

The use of green strategies such as green roofs and green walls can be beneficial to the quality of built environments in cities. Explain