

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF PUBLIC HEALTH

PUHE 236: BUILDING CONSTRUCTION AND TECHNOLOGY

STREAMS: PUHE

TIME: 2 HOURS

DAY/DATE: MONDAY 14/04/2025

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS

1. Do not write anything on the question paper.
2. Mobile phones and any other reference materials are NOT allowed in the examination room.
3. The paper has three sections. Answer ALL questions in Sections I, II and III.
4. All your answers for Section I (MCQs) should be on one page.
5. Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.
6. Write your answers legibly and use your time wisely

SECTION I. MULTIPLE CHOICE QUESTIONS (MCQs). (20 MARKS)

1. The reason why Timbering is important in buildings during foundation trench excavation is
 - a) Widen the trench
 - b) Protect the operatives from collapsing trench sides
 - c). Firm layout for foundation.
 - d). Lining of the trench walls.
2. Strip foundations are type of foundation which are used for:
 - a) Spanning over small soft or loose pockets of soil.
 - b) Providing increased area of foundation over poor bearing capacity of soil
 - c) Counter acting the hydrostatic effect
 - d) Spanning in sites which are firm below 750mm.

3. Which of the following statement describes pointing as applied to wall finish?

- a) The finish given to the joints by raking.
- b) The finish given to the joints by raking to depth of approximately 20mm and filling in on the additive which can be applied to both new and old buildings.
- c) The finish given to the joints by raking to depth of approximately 20mm
- d) The finish given to the joints by raking to depth of approximately 20mm and filling.

4. Which statement does not describe site clearing while setting up a building?

- a). Surface cleaning of grass, trees, anthills, hillocks, etc.
- b). Cleaning of obstructions that may be above or below the ground level.
- c). Cleaning of obstructions belonging to other organizations.
- d). Outlining and fencing of the building site borderlies.

5. Which is the primary function of a window in a building?

- a) Provide means for admission of natural daylight to the interior of a building
- b) Provide means of security to the interior of the building.
- c) Provide access to the building.
- d) Provide beautiful design of the building.

6. Why is it important to keep short distances if the concrete is to be transported for some distance on rough grounds?

- a) Variations cause segregation of the concrete mix.
- b) Losing of water in the concrete mix
- c) Hardening of the concrete
- d) Softening of concrete.

7. Curing has the following effect on cement except-

- a). Reduces the shrinkage of concrete
- b). Preserves the properties of concrete
- c). Prevents the loss of water by evaporation
- d). Allows loss of water in concrete by evaporation.

8. Which of the following is a mixture of cement and fine aggregate used as mortar for jointing in buildings finish work.

- a) 1:2
- b) 1:4
- c) 1:3
- d) 1:2

9. Of the given ratios, which is recommendable for general concrete for foundations in light buildings?

- a) 1:3:6
- b) 1:2:4
- c) 1:4:2
- d) 1:6:3

10. Which one of the following factors is not considered for the orientation of buildings?

- a) The direction of the prevailing winds in the area
- b) The exposure of the walls and roof of the buildings to the rays of sun
- c) The extent up to which the sunrays penetrate with the verandah
- d) The trees and other structures surrounding the building.

11. Which statement is true that describes Jointing as applied to wall finish?

- a) The finish given to the joints when carried out as the work stops.
- b) The finish given to the joints when carried out as the work proceeds.
- c) The finish given to the joints when carried out as the work starts
- d) The finish given to the joints.

12. Which of the following is a mixture of cement, fine aggregate, coarse aggregate and water ratios, which is suitable for reinforced concrete structures such as pillars and beams in storey buildings.

- a) 1:2:5
- b) 1:4:9

- c) 1:3:6
- d) 1:2:4.

13. Which is not a flexible material which is commonly used for the damp proofing course in buildings?

- a) Hot bitumen
- b) Bituminous felts
- c) Mastic asphalt
- d) Metal sheets

14. What is the main reason behind blinding of building floor before plastering?

- a) To even off the surface of hardcore if a damp-proof membrane (DPM) is to be placed under the concrete bed
- b) To even off the surface of hardcore if a damp-proof Course (DPC) is to be placed under the concrete bed
- c). To even off the surface of hardcore.
- d). To even off the surface of hardcore and smoothed.

15. Which of the following methods is used in reducing sloppy building sites?

- a). Cut and Fill.
- b). Cut.
- c). Fill.
- d). Cut and level.

16. The purpose of a building foundation is to

- a). Avoid collapsing of building walls
- b). Support the timbering of building trench
- c). Safely transmit the building to a suitable sub soil
- d) Support sound proofing for the building.

17. The standard brick dimensions measures

- a) 225 x 112.5 x 75 mm
- b) 205 x 112.5 x 75mm
- c) 215 x 112.5 x 65mm
- d) 215 x 112.5 x 55mm

18. The proper and sufficient ventilation in building results in absence of-

- a) Condensation
- b) Deposition
- c) Precipitation
- d) Circulation

19. Why is it important to excavate the building trench to a required and recommended depth before foundations are erected?

- a). Lay a firm base for the building.
- b). Easy identification of the building site
- c). Safety procedures when laying foundation.
- d). Quick bill of building quantities development

20. Timber floor finishes are available in the market as-

- a). Slates
- b). Board strips
- c). Ceramic tiles
- d). Metal sheets

SECTION 11: SHORT ANSWER QUESTIONS (30 Marks)

- 1. Explain five requirements for a building floor finish (5 marks)
- 2. Explain five principles of quantity surveying. (5 Marks)
- 2. Briefly discuss four cement batching methods in building construction. (8 marks)
- 3. Differentiate between load bearing wall and non-load bearing wall. (2 marks)
- 4. Outline four basic requirements for building ventilation openings. (4 marks)
- 5. Outline three types of natural building stones. (6 marks)

SECTION III. LONG ANSWER QUESTION. (20 Marks).

1. A Public Health Officer is charged with advising the developer in building industry to avoid dampness as per the building Code and Public Health Act Cap 242 laws of Kenya.

Discuss causes of dampness in buildings, prevention and mitigation. (20 marks)

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