

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR  
OF SCIENCE IN PUBLIC HEALTH**

**PUHE 273: BUILDING CONSTRUCTION AND TECHNOLOGY II**

**STREAMS: BSC (PUBLIC HEALTH- Y2 S2)**

**TIME: 2 HOURS**

**DAY/DATE: THURSDAY 08/07/2021**

**2.30 P.M – 4.30 P.M**

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**INSTRUCTIONS**

**Do not write anything on the question paper. Mobile phones and any other reference materials are NOT allowed in the examination room.**

**The paper has three sections. Answer ALL questions in Sections I and II and ONE question in section III.**

**All your answers for Section I (MCQs) should be on one page.**

**Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.**

**Write your answers legibly and use your time wisely**

**SECTION I (20MARKS)**

**MULTIPLE CHOICE QUESTIONS [20 MARKS]**

1. The process in which the difference of temperature between the outside air and the inside air tends to the deposition of moisture on the room surfaces is known as \_\_\_\_\_

- a) Saturation
- b) Accumulation

- c) Precipitation
- d) Condensation

2. The treatment given to the roof of a building to prevent the roof from the leakage of water is known as \_\_\_\_\_

- a) Fire proofing
- b) Damp proofing
- c) Termite proofing
- d) Sound proofing

.3. \_\_\_\_\_ is a flexible material which is commonly used for the damp proofing.

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

4. Which one of the given below is a chemical insecticide for termite proofing?

- a) Dieldrin
- b) Sulphuric acid
- c) Rodenticide
- d) Pyrethrins

1. Raft foundations are used for:

- a) Providing increased area of foundation over poor bearing capacity of soil
- b) panning over small soft or loose pockets
- c) Counter acting the hydrostatic effect
- d) All the above

.6. The \_\_\_\_\_ is a mixture of cement, sand, pebbles or crushed rock and water, which, when placed in the skeleton of forms and are allowed to cure, becomes hard like a stone.

- a) Cement concrete

- b) Cement slurry
- c) Cement grouting
- d) Cement mortar

7. Cement concrete has proven to be more economical than \_\_\_\_\_ as a building Material

- a) Aluminium
- b) Steel
- c) Copper
- d) Silica

8. There is initial \_\_\_\_\_ of cement concrete which is mainly due to loss of water through forms, absorption by surfaces of forms, etc.

- a) Swelling
- b) Cracking
- c) Dispersion
- d) Shrinkage

9. Cement concrete has tendency to be \_\_\_\_\_

- a) Flexible
- b) Elastic
- c) Porous
- d) Shine

10. \_\_\_\_\_ is the commonly accepted theory of corrosion.

- a) Direct corrosion
- b) Chemical action theory
- c) Electro osmosis theory
- d) Electrolytic theory

11. The \_\_\_\_\_ material is most liable to corrosion.

- a) Gold
- b) Copper
- c) Steel
- d) Wood

12. Most important effect of corrosion is the formation of \_\_\_\_\_

- a) Swelling
- b) Cracks
- c) Bubbles
- d) Gas

13. It is found that the \_\_\_\_\_ does not lead to the corrosion of reinforcement, provided that the concrete is dense and there is enough cover to the reinforcement.

- a) Ground water
- b) Lake water
- c) Sea water
- d) Stream Water

14. All \_\_\_\_\_ tend to accelerate the setting of cement and to improve the strength of concrete in early stages.

- a) Chlorides
- b) Sulphates
- c) Sodium
- d) Potassium

15. As a principle of planning, the term \_\_\_\_\_ is used to mean architectural hygiene.

- a) Sanitation
- b) Drainage
- c) Water supply
- d) Waste

1. The proper and sufficient ventilation results in absence of \_\_\_\_\_

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

17. Curing has the following effect on cement

- a). Reduces the shrinkage of concrete

- b). Preserves the properties of concrete
- c). Prevents the loss of water by evaporation
- d). All of the above

18, The commonly used material in the manufacture of cement is

- a) Sand stone
- b) Slate
- c) Lime stone
- d) Graphite

1. Which one of the following factors is 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) All the above

2. For providing a raft foundation, the following activities are involved

- 1. Ramming the foundation bed
- 2. Excavation of the soil upto required depth
- 3. Laying the reinforcement over the foundation bed
- 4. Curing the cement concrete placed over reinforcement
- 5. Pouring the cement concrete over the reinforcement

The correct sequence is

- a) 1, 2, 3, 4, 5

- b) 5, 4, 3, 2, 1
- c) 2, 1, 3, 5, 4
- d) 3, 2, 5, 1, 4

**SECTION II (30 Marks)**

Answer **ALL** questions in this section

1. State the *five* main factors one should consider before setting up a building? (5 Marks)
2. Outline any *five* physical limitations that may limit the construction of a desired form and texture of a building (5 Marks)
3. Outline any *five* Structural defects in Building Construction that can lead to the rejection of the building during inspection by a Public Health Officer. (5Marks)
4. Identify *four* secondary factors that may affect the choice of a foundation type for a building. (4 Marks)
5. Provision of DPC prevents dampness in a building. State five main sources of dampness in a building? (5Marks)
6. Explain the meaning of each of the following terms as used in Building and construction.
  - i. Sub-Contractor (2 Marks)
  - ii. Labor contract (2Marks)
  - iii. Full contract (2 Marks)

**SECTION III (20 Marks)**

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**Answer ONE question in this section.**

1. (a) Outline five Safety Measures that a Public Health officer should put in place during the process of demolition of Building Structures (5 Marks).

(b) Discuss the steps involved in the process of demolition of building structures (15 Marks).

2. Discuss the challenges faced by Public Health officers in enforcing the Building codes as stipulated in Legislation related to buildings in the Public health act CAP 242 (20 Marks).

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