

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE
AAR 3203 BUILDING SERVICES II
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE
BACHELOR OF QUANTITY SURVEYING (HONOURS) DEGREE
2010-2011 ACADEMIC YEAR
PART III SUPPLEMENTARY EXAMINATIONS – AUGUST 2011

Instructions

Time: 3 Hours

Choose any four questions.
Number all sheets

QUESTION 1

- (b) Discuss most suitable methods of collecting refuse in the following circumstances /environments:
- (i) Industrial areas
 - (ii) High density suburbs
 - (iii) Tall buildings in town
- (15)
- (a) Calculate the gradient required for a private sewer flowing half full bore at a velocity of 0.8m/s.
- (10)
- [25]

QUESTION 2

- a) Explain the following terms used in waste disposal:
- (i) Soil water
 - (ii) Anti – siphon pipe
 - (iii) Sewer
 - (iv) Waste water
 - (v) Sewerage
- (10)
- b) Calculate the diameter of a main surface water drain for an asphalt covered car park measuring 100x75m. Assume the following:
- Rainfall intensity – 50mmk/hr
 - Velocity – 0,8m/sec
 - Impermeability factor – 60
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- (15)
- [25]

QUESTION 3

(a) Discuss the following causes to lose of seals in traps.

- (i) Induced siphonage
- (ii) Wavering out
- (iii) Capillary action
- (iv) Self siphonage
- (v) Momendum

(15)

(b) On each of the above advise on measures that can be taken to harness the problem. (10)

[25]

QUESTION 4

a) Underground drainage systems from buildings are categorised into three (3). Discuss any two (2). [25]

END