

**CONFIDENTIAL**



**UTHM**

Universiti Tun Hussein Onn Malaysia

**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2016/2017**

COURSE NAME : PIPE AND GAS  
COURSE CODE : BNB 40203  
PROGRAMME : BNB  
EXAMINATION DATE : JUNE 2017  
DURATION : 2 HOURS 30 MINUTES  
INSTRUCTION : ANSWER ALL QUESTIONS

**TERBUKA**

THIS QUESTIONS PAPER CONSISTS OF FOUR (4) PAGES

**CONFIDENTIAL**

**CONFIDENTIAL**

- Q1** (a) Enumerate **THREE (3)** advantages and disadvantages of direct and indirect cold water supply system. (6 marks)
- (b) Sketch the typical layout for indirect cold water supply system for a double storey terrace house. (9 marks)
- (c) With the aid of sketches, how does sewage treatment work for housing scheme where Population Equivalent is less than 150 PE? (10 marks)

**Q2** Based on the table below, calculate:

Fittings	Ground floor	First floor	Second floor	Third floor	Fourth floor
Water closet (wc)	14	14	14	14	14
Wash basin (wb)	18	14	14	14	14
Urinal	6	6	6	6	6
Tap	22	14	14	14	14
Sink	3	-	-	-	-

- (a) Number of all fittings in the building (nos) (5 marks)
- (b) Total water storage needed for this building (*I*) (5 marks)
- (c) Suction tank size ( $m^3$ ) (5 marks)
- (d) Bulk storage tank size ( $m^3$ ) (5 marks)
- (e) Flow rate required (igpm) (5 marks)
- Q3** (a) Outline the various processes in solid waste management. (15 marks)
- (b) Which traditional method of solid waste management is suitable for a small upland community of about 1000 inhabitants? (5 marks)
- (c) State any five reasons for your choice of method. (5 marks)

**CONFIDENTIAL**

- Q4** (a) The water distribution system is divided into **THREE (3)**, which is the gravity system, continuous pump system and the combination of both systems. Draw a picture for each system and state **TWO (2)** advantages of the gravity system, **ONE (1)** advantage and **ONE (1)** disadvantage of the combination system and **TWO (2)** advantages and **ONE (1)** disadvantage of continuous pump system.  
(10 marks)
- (b) A medium low cost house will be constructed by the Al-Adlu Properties Development Sdn. Bhd. You are to prepare a sketch of a piping system of the house according to the layout plan in **Figure S1**. The hardware included were listed in the table below:

Area	Piping hardware
Master Bathroom	1 Toilet Seat, 1 Sink and tap, 1 Tap, 1 Shower
Bathroom	1 Squat Toilet, 1 Sink and tap, 1 Tap 1 Shower
Kitchen	2 Sinks and 1 Tap
Court Yard	1 Pipe
Storage Tank	

(15 marks)

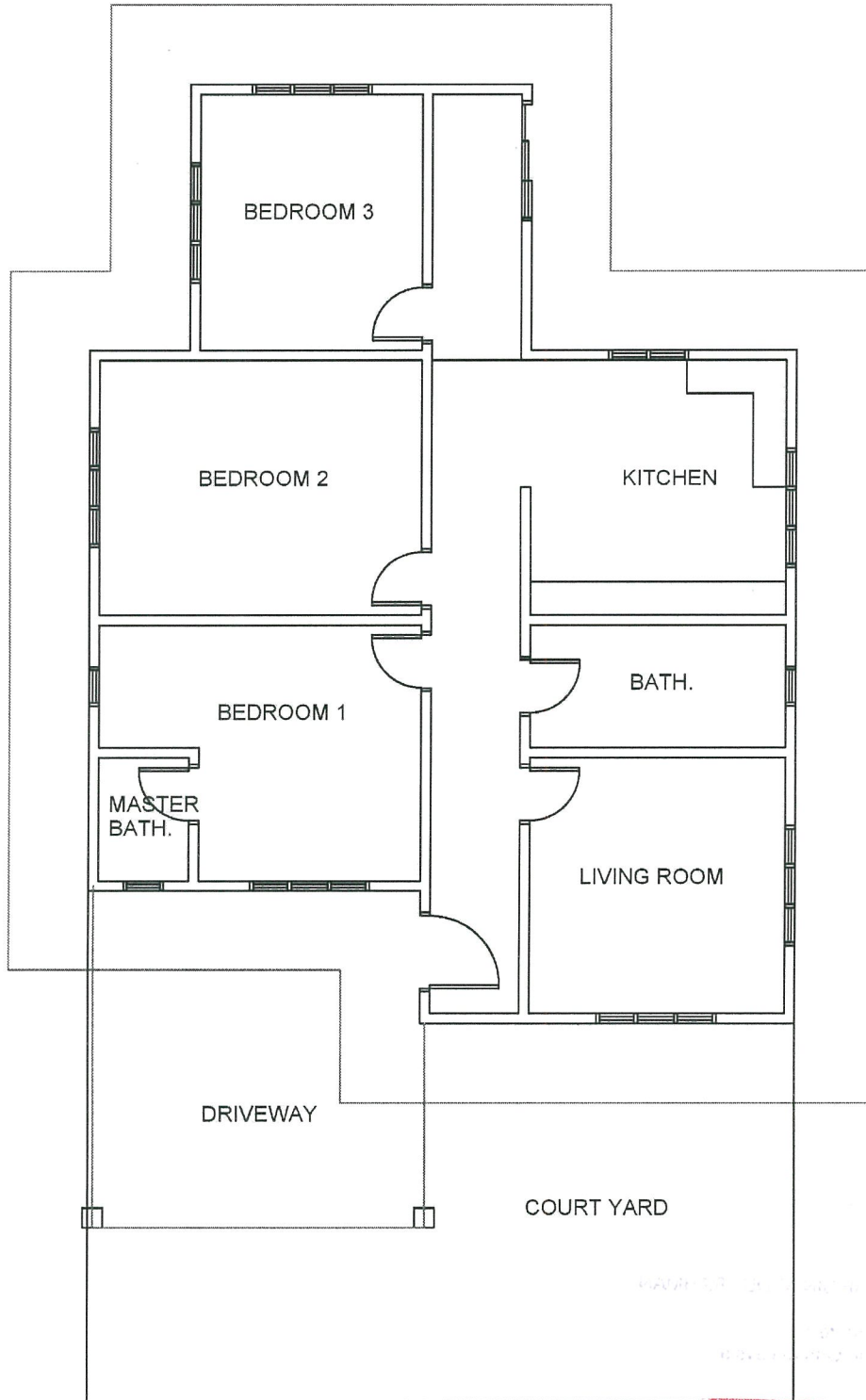
**- END OF QUESTION -****TERBUKA****CONFIDENTIAL**

**FINAL EXAMINATION**

SEMESTER / SESSION : SEM II / 2016/2017  
COURSE NAME : PIPE AND GAS

PROGRAMME CODE : BNB  
COURSE CODE : BNB 40203

**Figure S1**



FLOOR PLAN

**TERBUKA**