



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2018/2019

**FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
CONSTRUCTION MANAGEMENT**

BRE 209: CONSTRUCTION TECHNOLOGY

DATE: Tuesday 18th December 2018

TIME: 11.00 a.m. – 1.00 p.m.

INSTRUCTIONS:

- 1. Question 1 in Section One is compulsory**
- 2. Answer any other TWO questions in Section Two**

SECTION ONE: Compulsory (30 marks)

Question One

- a) Using sketches show the two construction detail at the twin column of pad foundation. (5 marks)
- b) Show the treatment detail of the joint at meeting point between the two leaves of a wall joint. (5 marks)
- c) Sketch the detail of construction at the roof and show how water tightness is achieved at the flat asphalt roof (5 marks)
- d) In framed construction, frames are normally placed (laid) in a GRID LAY OUT, state FIVE reasons why this is the case. (5 marks)
- e) Using a labeled sketch, outline the suspended slab incorporating a beam (10 marks)

SECTION TWO: Answer any two questions from this section

Question Two

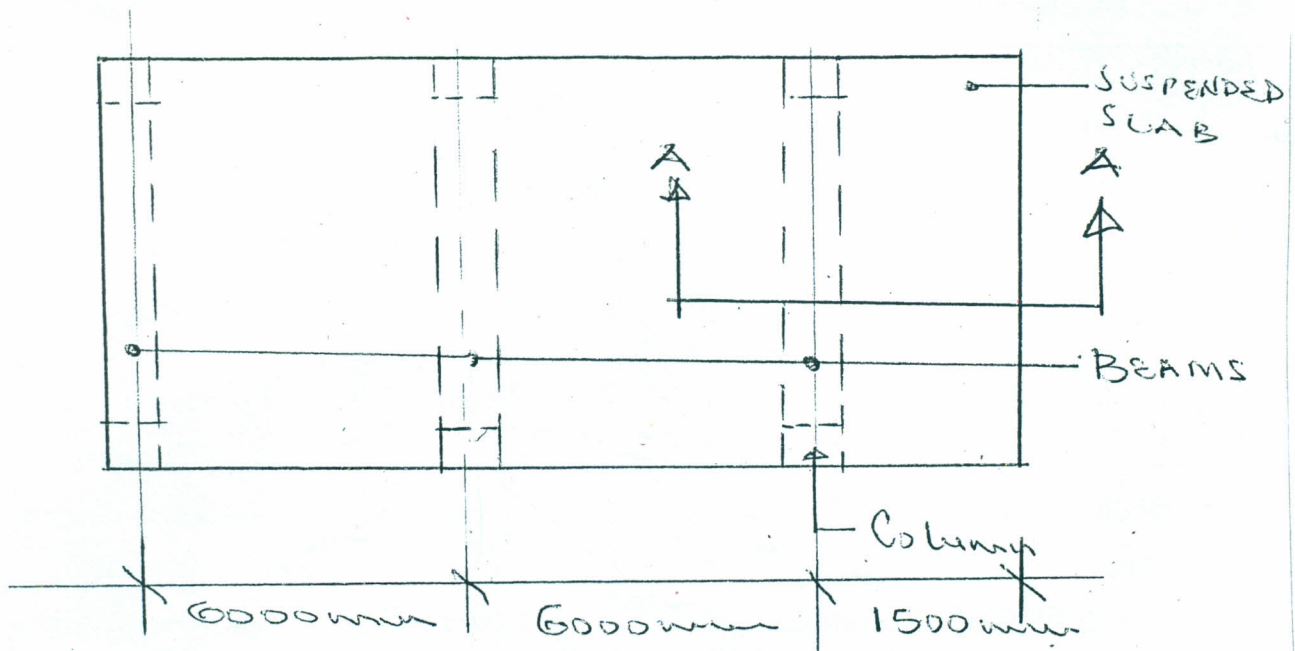
- a) Outline the five objectives of controlling water level on sites (5 marks)
- b) With aid of sketches show at least FIVE patterns of laying sub-soil pipes for controlling water levels in the ground. (5 marks)
- c) Outline the fabrication procedure for castellated beams. (6 marks)
- d) Outline the advantages of castellated beam construction (4 marks)

Question Three

- a) A foundation for a building is to be set out in such a way that the wall be $2\frac{1}{4}:1$. If the thickness of the wall is 225mm, determine suitable width of foundation and thickness of the concrete foundation (5 marks)
- b) There are three methods of placing screeds to the solid concrete floors. Name and explain the methods (15 marks)

Question Four

- a) Figure 1. Shows floor plan of a building sketch section A-A to show construction detail incorporating hollow plot floor construction. (5 marks)



- b) Considering the building code requirements, design a staircase using the following data: (7 marks)

Floor to soffit of suspended ceiling	= 3000mm
Suspended ceiling	= 300mm
Structural floor	= 200mm
Screed average	= 22mm
Floor finish	= 8mm

- c) Illustrate in a table form, building code requirements for design of stairs in groups 1 and 2 (8 marks)

Question Five

- a) With aid of a sketch outline THREE situations where permanent formwork could be used. (10 marks)
- b) Using a well labelled sketch outline the fixing of timber gladding to concrete framed construction (10 marks)