



TECHICAL UNIVERSITY OF MOMBASA  
**Faculty of Engineering &  
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING  
**HIGHER DIPLOMA IN BUILDING & CIVIL ENGINEERING (HDBC 12S)**

EBC 3133: CONSTRUCTION TECHNOLOGY & SERVICES

**SPECIAL/SUPPLEMENTARY EXAMINATION**

**SERIES: FEBRUARY 2013**

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*
- *Scientific Calculator*

This paper consists of **FIVE** questions.

Answer any **THREE** questions

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

### **Question One**

- a) State the **THREE** functional requirements of building foundations.
- b) Briefly explain the contents of site exploration report
- c) With the aid of sketches, describe the installation of insitu driven piles

### **Question Two**

- a) State **SIX** reasons for using pile foundation **(6 marks)**
- b) (i) State **FOUR** reasons for site dewatering.  
(ii) With the aid of a sketch, describe the installation of a well point dewatering system. **(10 marks)**
- c) State **FOUR** cases where sheet piles are used. **(4 marks)**

### **Question Three**

- a) (i) State **FOUR** factors which may necessitate under-pinning to an existing foundation. **(4 marks)**  
(ii) With the aid of a sketch, describe wall under-pinning. **(8 marks)**
- b) With the aid of a sketch, describe the construction of steel grillage foundation. **(8 marks)**

### **Question Four**

- a) With the aid of a sketch, describe external tanking in mastic asphalt. **(10 marks)**
- b) Briefly explain **THREE** basic methods of water proofing basement structures. **(10 marks)**

### **Question Five**

- a) Briefly explain the work involved in site clearance. **(6 marks)**
- b) Using sketches explain **THREE** methods of leveling a site. **(9 marks)**
- c) State **FIVE** stages of works that are applied for inspection by local authority. **(5 marks)**