



PROGRAM : NATIONAL DIPLOMA
BUILDING

SUBJECT : **CONSTRUCTION TECHNOLOGY 3**

CODE : **CONT 331**

DATE : NOVEMBER EXAMINATION
1ST NOVEMBER 2013

DURATION : (SESSION 1) 08:30 - 12:30

WEIGHT : 40 : 60

TOTAL MARKS : 150

ASSESSOR : DR JN AGUMBA

MODERATOR : Ms. M LASERSON

NUMBER OF PAGES : 3 PAGES

INSTRUCTIONS : ANSWER ALL THE QUESTIONS IN **SEQUENCE** ALL
DRAWINGS MUST BE WELL ANNOTATED.

REQUIREMENTS : ONE ANSWER SHEET

INSTRUCTIONS TO STUDENTS

PLEASE ANSWER ALL QUESTIONS IN **SEQUENCE**.

QUESTION 1

- 1.1 Outline five requirements that are required for materials used for sealing joints on framed structures (5)
 - 1.2 Outline six requirements curtain wall should have in order for it to fulfill its function (6)
 - 1.3 Draw a typical vertical section through a storey height framed concrete structure with concrete cladding panel well annotated (15)
- [26]**

QUESTION 2

- 2.1 Define the term soakaway as used in drainage system (2)
 - 2.2 Discuss the three types of drainage systems that could be used in a 30 unit townhouse project (9)
 - 2.3 Draw a section through a cantilever retaining wall indicating all the terminologies (8)
 - 2.4 Illustrate using drawings and discussion, your understanding of raked joints and toothed joints as used in brickwork (5)
- [24]**

QUESTION 3

- 3.1 Outline five requirements that are required for materials used for sealing joints on framed structures (5)
 - 3.2 List ten sections that are included in SANS 10400 (5)
 - 3.3 Outline five relevant government Acts that are related with the National Building Regulations (5)
 - 3.4 Discuss the methods used for testing piles (8)
 - 3.5 Draw section through strip foundation that has been underpinned using brickwork (8)
- [31]**
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QUESTION 4

- 4.1 Discuss the reasons for underpinning a foundation (6)
- 4.2 Draw the section of a fully annotated needle and piles underpinning method (6)
- 4.3 Describe the term substrate as used in Marmoran products and give an example (2)
- 4.4 Draw a typical section through a multi-storey building with rainscreen cladding (7)
- [21]**
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QUESTION 5

- 5.1 Draw a detailed typical timber formwork to be used for an in-situ reinforced concrete beam lintel to a door opening (8)
- 5.2 Describe two types of defects that can occur on a finished concrete surface and outline a method of alleviating them (6)
- [14]**
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QUESTION 6

- 6.1 Describe the two types of pre-stressed reinforced concrete (6)
- 6.2 Outline the advantages of using ECHO pre-stress slabs (7)
- [13]**
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QUESTION 7

- 7.1 Discuss the different types of timber portal frames (6)
- 7.2 Describe three structural theories of designing portal frame. (9)
- 7.3 Draw a pocket connection of pre-cast concrete portal frame (6)
- [21]**
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TOTAL = 150