



PROGRAM : NATIONAL DIPLOMA
BUILDING

SUBJECT : **CONSTRUCTION TECHNOLOGY 3**

CODE : **CONT 331**

DATE : NOVEMBER EXAMINATION
21ST NOVEMBER 2016

DURATION : (SESSION 1) 12:30 - 16:30

WEIGHT : 50 : 50

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;
: USE A **PENCIL** TO DRAW

REQUIREMENTS : ONE ANSWER SHEET

INSTRUCTIONS TO STUDENTS

PLEASE ANSWER ALL QUESTIONS IN **SEQUENCE**.

QUESTION 1

- 1.1 **Draw** a well annotated section through a structural steel beam to beam connection to enable a level floor (5)
- 1.2 **Draw** a typical vertical section through a storey height framed concrete structure with concrete cladding panel well annotated (15)
- [20]**

QUESTION 2

- 2.1 **Define** the term pile as used in construction project work (2)
- 2.2 **Propose** and **discuss** two types of pile foundations that a developer could use in a 10 storey building to house 5 student apartment per floor in Doornfontein in Gauteng province in South Africa. The soil is collapsible. (6)
- 2.3 **Discuss** the methods that can be used for testing piles used for foundation (8)
- 2.4 **Discuss** using suitable drawings the process of assembling the Franki-driven in-situ piles (8)
- [24]**

QUESTION 3

- 3.1 **Draw** a section through a filled joint used in precast concrete framed structures (6)
- 3.2 **List** ten sections that are included in SANS 10400 (5)
- 3.3 **Discuss** the importance of National Building Regulation to the construction industry stakeholders in South Africa (5)
- [16]**

QUESTION 4

- 4.1 **Discuss** the process of applying Marmoran on old and new surface (8) and **list** four types of Marmoran products (2)
- 4.2 **Describe** the term substrate as used in Marmoran products and give an example (2)
- 4.3 **Draw** a typical section through a multi-storey building with rainscreen cladding (7)
- [19]**
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QUESTION 5

- 5.1 **Describe** the procedure that will be followed when constructing single skin cofferdam (6)
- 5.2 **Draw** a fully annotated section through a double skin cofferdam (8)
- [14]**
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QUESTION 6

- 6.1 **Draw** a well annotated section through a typical foundation formwork and **outline** the reason(s) for using the formwork (8)
- 6.2 **Outline** the requirements of timber formwork to enable it to be successful in its' functionality (7)
- 6.3 **Describe** the coding configuration below and **state** where this configuration can be used in an in-situ concrete frame structure (5)
- 4Y1601
- [20]**
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QUESTION 7

- 7.1 **Draw** a detailed well annotated section through a basement (12)
- 7.2 **Discuss** the reasons why a construction manager will suggest to an engineer to use structural steel for constructing a plane framed structure (6)
- 7.3 **Draw** a pocket connection of pre-cast concrete portal frame (6)
- [24]**
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QUESTION 8

- 8.1 **Draw** a section through a typical cantilever retaining wall indicating all the terminologies (8)
- 8.2 **Discuss** the importance of health and safety to construction workers when constructing a retaining wall (5)
- [13]**
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TOTAL = 150