



**FIRST SEMESTER EXAMINATION 2017/2018 SESSION**

**COURSE CODE:** QTS 512 **COURSE TITLE:** CIVIL ENGINEERING MEASUREMENT I

**TIME ALLOWED:** 2 Hours

**CREDIT LOAD:** 2 Units

**INSTRUCTION:** Answer *Only Four (4)* Questions BESMM 3 & 4 and CESMM3 are allowed

**QUESTION ONE (25 marks)**

Take off Quantities for the proposed construction of **cast iron tunnel lining** in the attached drawing number (DWG/QS/01)

**Brief Specification**

- i. 350m length of tunnel excavation with external diameter of 2.40m
- ii. Lining segmental 500mm entre to centre with thickness of 25mm thick
- iii. Flange depth is 60mm thick
- iv. Caulking joint is 55mm thick
- v. Length of the drilling holes not exceeding 4.0m

**QUESTION TWO (25 marks)**

The Federal Government of Nigeria proposed the extension of construction of **Rail track** from Kaduna to Kano. You have been commission as a Quantity Surveyor to take off Quantities for the proposed extension of project in the attached drawing number (DWG/QS/02)

**Brief Specification**

- A. Crushed stone ballast: shall consist of crushed granite free dust and vegetable matter as specification clauses. The aggregate shall be random size 32-40mm max thickness.
- B. Rails: shall be flat bottom weighting 56km/m supplied in stock length of 18.00 tracks shall be jointed with 450mm long x 25mm thick fish plates at 36.00m centre to centre.
- C. Sleeper: timber sleepers shall be 2750mm long x 250mm wide x 275mm thickness in materials treated as described in specification clause and laid at the rate of 24/18mm of track length.
- D. Formation level: the formation level in location of high water table shall be protected with 100mm thick layer of approved sharp sand over laid single layer of 100 polythene damp proof membrane.

**QUESTION THREE (25 marks)**

The Government of Niger State proposed the construction of **retaining wall** for the river boundary in Makwa Local Government area. You have been commission as a Quantity Surveyor to take off Quantities for the proposed project in the attached drawing number (DWG/QS/03)

**Brief Specification**

For the purpose of this examination a 30m length of wall is recommended for the proposed project and omit the earth work

**QUESTION FOUR (25 marks)**

- A. Briefly explain the followings terms in road construction projects
  - i. Base course
  - ii. Sub based course
  - iii. Binder course
  - iv. Wearing course
- B. Describe kerbs and outline the functions of kerbs
- C. Describe shoulders and list out the functions of shoulders

### QUESTION FIVE (25 marks)

The Niger State Government proposed the construction of shopping complex of a ten storey building at Paiko and the site was located in water loading area. You have been commission as a Quantity Surveyor to take off Quantities for the proposed project in the attached drawing number (DWG/QS/04)

#### Brief Specification

- A. Take 108m length of Quay with concrete and timber piles
- B. 300mm stone pitching with chalk filling
- C. Piles size are 900 x 1200mm and 900 x 600mm respectively and both are 3.600m centre to centre
- D. 300 x 300mm greenheart sleeper.
- E. Reinforced concrete pile cap 1200 x 900 x 450mm and 900 x 600 x 450mm.
- F. 300 x 300mm sleeper and 300 x 300mm fender pile.

GOOD LUCK

DWG/QS/02

