

**FEDERAL UNIVERSITY OF TECHNOLOGY MINNA**  
**SCHOOL OF ENVIRONMENTAL TECHNOLOGY**  
**DEPARTMENT OF QUANTITY SURVEYING**

FIRST SEMESTER EXAMINATION 2016/2017 ACADEMIC SESSION

**COURSE CODE:** QTS 512

**COURSE TITLE:** CIVIL ENGINEERING MEASUREMENT 1

**CLASS:** 500 LEVEL

**TIME:** TWO HOURS THIRTY MINUTES (2HRS 30MINUTES)

**INSTRUCTION:** ANSWER ONLY FOUR QUESTIONS ONLY. BESMM 3 & 4, AND CESMM3 ARE ALLOWED

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**QUESTION ONE (25 marks)**

The Government of Niger State proposed the construction of retaining wall for the river boundary in Katcha Local Government area. You have been commissioned as a professional Quantity Surveyor to take off Quantities for the proposed project using the attached drawing number (DWG/QS/01)

**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 TWO (25 marks)**

The Federal Government of Nigeria proposed the extension of construction of Rail track from Kaduna to Kano. You have been commissioned as a professional Quantity Surveyor to take off Quantities for the proposed project using 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.