

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA
SCHOOL OF ENVIRONMENTAL TECHNOLOGY
DEPARTMENT OF QUANTITY SURVEYING
SECOND SEMESTER EXAMINATION

COURSE CODE: *QTS 323*

COURSE TITLE: *CIVIL ENGINEERING CONSTRUCTION I*

INSTRUCTION: *ANSWER ALL QUESTION*

TIME: *2hr.*

Q1. Due to the nature of work involves in cofferdam and caisson, they are classified as high risk hazard activities and as such a permit to work need to be obtained. A permit to work is a written document procedure, which authorize and control work within high risk hazard such as cofferdams and caissons. As an expert in cofferdam and caisson construction you are required to draw out the necessary procedure to be contained in the proposed permit to work and explain the important of permit to work.

Q2. With the aid of diagram only explain the following:

- a. Rigid pavement
- b. Flexible pavement
- c. Composite pavement

Q3. a. Briefly explain the circumstances under which cofferdam and caisson, and permanent underwater foundation can be selected.

b. In underwater foundation certain factors are term "limiting factors", outline in detail these limiting factors in underwater foundation.

Q4. a. With the aid of a diagram, explain road above arch bridge and road below arch bridge.

b. Under what condition can road above arch bridge and road below arch bridge are used.

Q5. Outline the factors to be considered in selection of a suitable cofferdam.

GOODLUCK