



TERTIARY AND VOCATIONAL EDUCATION COMMISSION



COMMON WRITTEN EXAMINATION – 2021/ 2022

Diploma in Quantity Surveying		
NVQ Level 05 –Semester I		
Construction Technology 1	F45C002M03	Three Hours
Answer any five (5) questions only		

1. i) The basement excavation of a high-rise building is 2-3m deep and excavation has to be commenced soon.
 - a) What are the main activities to be performed to accomplish the excavation work? (04 marks)
 - b) Name the resources required for each of them. (04 marks)
 - c) What are the challenges you may face while executing excavation? (04 marks)
 ii) Staircase is a mode of connection of two different elevations and to move safely. Draw a sketch of one (01) type of it and name the parts. (08 marks)

2. i) Concreting of a floor slab is planned and it is the responsibility of the technical staff to ensure the quality of the end product.
 - a) Briefly explain the list of activities/ items that should be checked, a day before concreting; (06 marks)
 - b) What are the actions you should take to ensure the quality when the concreting is progressing? (04 marks)
 ii) Draw a sketch of English bond and Flemish bond of the right angle corner of the 225mm thick wall. (10 marks)

3. Multi story construction project with underground car park has been decided to construct in Malabe. Soil investigation report indicates that the soil condition is very weak and distance to the bedrock is too far. Design team discussed about the pad foundation, raft foundation & pile foundation.
 - a) Name most suitable foundation type for this location and briefly explain why do you select this type of foundation (05 marks)
 - b) Name most suitable retaining wall for this project and briefly explain, why do you select this type of retaining wall (05 marks)
 ii)
 - a) State two types of pile foundations made in constructions (02 Marks)
 - b) Earth can be retained by itself. How to retain it (03 Marks)
 - c) What is the difference between hand mixing concrete and machine mixing concrete? (02 Marks)
 - d) Name three earth retaining structures (03 Marks)

4. i) a) What are the functions of partitions (03 Marks)
- b) Give advantageous of partition walls (02 Marks)
- c) What is the importance of cavity wall in constructions (02 Marks)
- d) What are the benefits of using Aluminum partition rather than timber partition (02 Marks)
- e) Why plywood and chipboard are not suitable for external work like toilet doors and outside doors, etc. (01 Mark)
- ii) Draw a sketch of Calicut tile collar roof and lean to roof (10 Marks)
5. i) It is planned to construct foundations in two different levels. Damp-proof courses may be either horizontal or vertical can generally be divided into three types
- (a) What are those three (03) types (03 Marks)
- (b) Differentiate the damp proof course (DPC) and damp proof membrane (DPM) (03 Marks)
- ii) As a Quantity Surveyor, you have to decide and advice about reduced level excavation
- a) How do you design an economical excavation in a site with huge slope (02 Marks)
- b) What are the three (03) methods of excavations that can be used for reduced level? (03 Marks)
- c) Which is the most suitable method to get high stability in reduced level excavation? (02 Marks)
- d) Which of the above three methods is most economical and explain your answer (02 Marks)
- e) How do you place foundation when the filled earth and original ground met at four (04) feet below the ground (03 Marks)
- f) What is the most suitable excavator machine used for economical excavation (Earth should be pushed for a shorter distance) (02 Marks)
6. Write short notes on five (05) of the followings; (05 x 4 = 20 Marks)
- i) Plinth beam
- ii) Admixtures
- iii) Soil compaction
- iv) Earth work support
- v) Cement rendering
- vi) Draw a closed couple roof and name the parts using roofing terminologies.