

**TERTIARY AND VOCATIONAL EDUCATION COMMISSION**



**NVQ LEVEL 05 –SEMESTER I  
CONSTRUCTION TECHNOLOGY**



**CONSTRUCTION MATERIALS**

**F45C001M05**

**THREE HOURS**

**Answer any five (05) questions.**

**Question No. 01**

- i). Portland cement is manufactured in different forms to use under normal and specific site situations. State three (03) types of Portland cements and explain suitable places or conditions for their applications. (06 marks)
- ii). Describe the desirable properties of cement. (04 marks)
- iii). Briefly explain about sedimentary limestone and crystalline limestone (06 marks)
- iv). Quality of formwork is a key factor to maintain the quality of concrete and end products. What are your explanations for this statement? (04 marks)

**Question No. 02**

- i). Name five (5) defects that can be occurred in brick work. (02 marks)
- ii). Name special types of bricks (02 marks)
- iii). Briefly explain about over burnt bricks and under burnt bricks (04 Marks)
- iv). Briefly explain about the role of carbon in steel products (04 Marks)
- v). Why cast iron materials are easily broken (04 Marks)
- vi). Write down the advantages of cast iron (04 Marks)

**Question No. 03**

- i). What are the three factors to control natural seasoning of timber (03 marks)
- ii). Briefly explain about the sapwood in trees (03 marks)
- iii). What is “sealant” in construction? Explain the characteristics of sealants and give two (02) examples for sealants and their places of application. (04 marks)
- iv). Briefly explain about primer and undercoat of paint. (04 marks)
- v). Briefly explain the prestressed concrete and post stressed concrete in today’s construction industry. Give an example for prestressed concrete and list down its advantages (06 marks)

**Question No. 04**

You are appointed as a site engineer for a multi storied building construction project. Your job is to plan and execute quality basement concrete in the site.

- i) What are the considerable factors affecting on strength of concrete? (04 Marks)
- ii) What are the properties of fresh concrete and hardened concrete (04 marks)
- iii) Briefly explain about the workability of concrete (04 marks)
- iv) Why concrete compaction and curing is important (04 marks)
- v) Why rough fine aggregate is more suitable than very fine aggregate for concrete work (04 marks)

**Question No. 05**

- i). Natural stones are spread with vast varieties and used widely in various works in construction. Why you are not suggesting the following stones for the construction works. (06 marks)
- a) Glassy type stone like quartz
  - b) Stone covered with a mud layer
  - c) Weathered rock (stone)
- ii). Why well graded sand is very suitable for concrete or motor (04 marks)
- iii). Metals and metal alloys such as steel has become so important in construction and based on our experience, we know that there is hardly any construction can take place without them.
- a) Name four (04) properties of metals and briefly explain them. (06 marks)
  - b) What are the advantages of alloy steel rather than metal? (04 marks)

**Question No. 06**

Briefly explain the followings;

(05 x 4 = 20 marks)

- i). Hydration of cement
- ii). Properties of plastic
- iii). Geo textiles
- iv). Solvent (Thinner) and paint
- v). Soundness of cement