



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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UNIVERSITY EXAMINATION

BUILDING CONSTRUCTION MATERIALS

ECV 2100

DIPLOMA IN CONSTRUCTION MANAGEMENT

DIPLOMA IN CIVIL ENGINEERING

DIPLOMA IN BUILDING TECHNICIAN

SECTION A [40 Marks]

1. Define timber (2marks)
2. State classes of materials used in construction giving two examples in each class (4marks)
3. Discuss the following constituents of good brick clay (4marks)
 - i. Silica
 - ii. Alumina
4. Outline four harmful ingredients in bricks (4marks)
5. Outline four key factors that influence the selection of wood and timber species for specific construction projects (4marks)
6. Distinguish between bitumen and tar (4marks)
7. State **three** uses of bituminous products in construction (3marks)

8. Give **four** reasons for using plastics in construction work (4marks)
9. Describe the following timber defects (4marks)
- Knots
- Shakes
10. Explain the term "ductility" as it relates to metals in construction. (2marks)
11. differentiate between ferrous and non-ferrous metals (4marks)
12. define 'standing timber' (1mark)

SECTION B [60 Marks]

13. Define the term seasoning of timber (2marks)
- a. Explain **two** methods of timber seasoning giving **two** merits and demerits of each method (6marks)
- b. Outline **four** advantages of timber as a construction material (4marks)
- c. Describe the following types of timber defects that can affect the structural integrity of wooden elements in buildings. (8marks)
- Warping
 - Fungi and insect attack
 - Defects due to natural forces
14. a) Define the following terms as applied to bituminous products (8marks)
- i. Cutback bitumen
 - ii. Asphalt
 - iii. Straight run bitumen
 - iv. Bituminous emulsion

b) With the aid of a labeled diagram describe the softening point test for bitumen (8marks)

c) State **four** properties of bitumen (4marks)

15. a) Explain any **three** methods of protecting ferrous metals from rusting (6marks)

b) Describe the following types of heat treatment in steel (4marks)

Annealing

Hardening

c) Discuss the following constituents of plastic (8marks)

Resin

Filler

Catalyst

d) State 2 methods of molding plastic products (2marks)

16. Outline the characteristics of a good brick making clay (5marks)

b) Explain the manufacturing process of bricks

(15marks)