



Technical University of Mombasa

Faculty of Engineering and Technology

DEPARTMENT OF MEDICAL ENGINEERING

DIPLOMA IN MEDICAL ENGINEERING
(DME JAN 2013/S-PT Y2 S1)

ECL 2201 DENTAL EQUIPMENT

SPECIAL/SUPPLEMENTARY EXAMINATIONS

SERIES: JUNE 2013
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

You should have the following for this examination

- Answer booklet

Question **ONE** is **COMPULSORY** and any other **TWO**
This paper consists of **3 PRINTED** pages

QUESTION ONE (COMPULSORY)

- (a) Explain the principle of operation of hydraulic mechanical dental chair. **(6 marks)**
- (b) Outline **THREE** possible causes and **ONE** remedy in each case for the following faults in a dental chair.
- (i) No fluid
 - (ii) Low pressure **(12 marks)**
- (c) (i) Draw a sectionetic diagram of a single water-line supply to a dental chair.
- (ii) Describe the functions of any **THREE** elements in (i). **(12 marks)**

QUESTION TWO

- (a) With the aid of a given diagram explain the vertical movement of an electro-hydraulic dental chair. **(14 marks)**
- (b) Explain the principle of operation of spray unit handpiece of a dental unit. **(6 marks)**

QUESTION THREE

- (a) (i) Draw a labeled tumbler filling water circuit for a dental unit.
- (ii) Outline the function of each component. **(12 marks)**
- (b) Differentiate between permanent and deciduous teeth. **(8 marks)**

QUESTION FOUR

- (a) Differentiate between an air cushion bearing and ball bearing turbine handpiece. **(8 marks)**
- (b) (i) State **FOUR** function of compressed air in dental units.
- (ii) Outline the weekly planned preventive maintenance performed by technician on the dental unit. **(12 mark)**

QUESTION FIVE

- (a) State **FOUR** advantages and disadvantages of an electro-hydraulic as compared to hydraulic mechanical dental chair. **(8 marks)**
- (b) (i) State any **THREE** causes of hydraulic dental systems compressor
- (ii) Outline the maintenance procedure for hydraulic system compressor in (i) **(12 marks)**