

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF HEALTH TECHNOLOGY
DEPARTMENT OF DENTAL TECHNOLOGY

RAIN SEMESTER 2014/2015 EXAMINATIONS
DNT 304 DENTAL MATERIAL SCIENCE 1 3units

TIME ALLOWED: 3 HRS
DATE: 19/08/2015

INSTRUCTIONS: Attempt all questions section A and Two from section B
SECTION A

1. What role is benzoyl peroxide and hydroquinone playing in methylmethacrylate? 2mks
2. What is the role of flux and antflux in dental materials? 2mks
3. Identify two factors affecting abrasion efficiency. 2mks
4. What is the chemical difference between type I and type II gypsum product? 2mks
5. What is a colloid? Mention its application in dental material science. 2mks
6. What is a chemical modifier? Give examples. 2mks
7. The chemical names for water glass and French chalk are called.....andrespectively. 2mks
8. Sodium alizarin sulphonate is a component ofmaterial and functions as..... 2mks
9. Highlight the chemical stages of acrylic resin polymerization. 2mks
10. Give two ways through which gypsum product could be handled to obtain optimum result. 2mks
11. Give two principles each of abrasion and polishing materials 2mks
12. Give two applications of sticky wax in the dental laboratory. 2mks
13. Define wax and give the composition of inlay wax. 2mks
14. Mention two precautions to be taken while handling impressions in the laboratory. 2mks
15. Define plasticizer and give the name of the chemical agent used as such in acrylic resin. 2 mks
16. Define gypsum and state the composition of type IV plaster. 2mks
17. Define fusible alloy and give two examples. 2mks
18. Why is starch incorporated in type I gypsum product? 2mks
19. What are the dispensational changes that take place during the setting of gypsum products? 2mks
20. The organic tertiary amine used to induce autopolimerising resin is called..... What role does it play in the polymerization process? 2mks
21.is a chemical substance used as solvent for plaster? The instruments used in testing the initial and final setting time of plaster are.....and..... 2mks
22. Give the chemical formulae of Borax and hydrocal 2mks
23. Give two reasons why acrylic resins do not fulfill the properties of an ideal denture base material? 2mks
24. Define separating medium. What is the function of liquid tin foil in dental appliance construction? 2mks
25. Give the compositions of sticky wax. 2mks

SECTION B (Attempt only two questions from this section)

1. Certain factors affect the setting time and expansion of gypsum products. Explain these factors and state what happens when stone plaster is mixed with water? 10mks
2. Explain five substances used for preventing adhesion and cohesion between surfaces of materials in dental laboratory. 10mks
3. There are defects likely to associate with acrylic resin manipulations in the dental laboratory. List and explain these defects based on causes and possible remedies. 10mks
4. A successful dental appliance depends to a large extent on accurate impressions. Classify impression materials according to the domains of plastic, rigid and elastic. Write on one impression materials from each class based on compositions and manipulations. 10mks