FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF HEALTH TECHNOLOGY
DEPARTMENT OF DENTAL TECHNOLOGY
2016/2017 HARMATTAN SEMESTER EXAMINATIONS

DNT 305 INTRODUCTION TO DENTAL MATERIALS (2 Unit) **Time Allowed: 2 ½ hrs** **Date: 14/06/2017**

Instruction: Attempt all questions in section A and two from section B.

1. One of the biological properties of dental material is.....
   (a). It should produce allergic reactions **(b).** It should be non toxic to the tissues. **(c).** It should not dissolve in saliva **(d).** Should be carcinogenic and mutagenic **(e).** It should have special magnetic properties
2. Dental material science could be defined as .....
3. What is fitness for purpose of a material?
4. Why does surface tension exist in liquids?
5. One of the purposes of testing dental materials include.....
   (a). To know the hardness (b). To know the impact strength (c). To know the mechanical properties (d). To know the fatigue strength (e). To know the compressive strength
6. Since most dental materials come in contact with the oral cavity and the body, there are two important questions to be asked. What are they?
7. What is the importance of "shelf life" as applied to dental materials?
8. The amount of heat given off or absorbed when products are formed from reactants is called.
   (a). exothermic reaction **(b).** Heat of reaction **(c).** Latent heat of fusion **(d).** Endothermic reaction **(e).** Heat of vaporization
9. .....is the force of attraction that exists between two similar substances.
   a. Adhesion **b.** Cohesion **c.** Capillarity **d.** Osmosis **e.** force of gravity
10. Give two functions of SON.
11. Rheology in dental material science means.....
12. .....is used for testing the impact strength of a material.
    a. knoop tester **b.** Rockwell tester **c.** Izod tester **d.** Vickers tester **e.** Moh's scale
13. What is viscosity?
14. The chemical property of a material is defined as.....
15. Dimensional change of a material is ..... **(a).** The resistance of the material to internal forces **(b).** Increase in size of a material **(c).** Decrease in size of a material **(d).** b and c **(e).** All of the above
16. The process of measuring the characteristics and behaviour of substances in other to specify their suitability in various areas of application is called.....
17. What is 'biocompatibility' in dental material science?
18. Mention two dental materials produced from gypsum.
19. ISO is.....**(a).** The World's largest developer and publisher of International Standards. **(b).** a and c only **(c).** A non-governmental organization that forms a bridge between the public and private sectors **(d).** Disseminate innovation **(e).** All of the above
20. Dental materials are specially compounded substances used in:
    (a). The fabrication of orthodontic appliances **(b).** The fabrication of prosthodontic appliances **(c).** The fabrication of dental appliances **(d).** The fabrication of maxillofacial appliances **(e).** The fabrication of conservative appliances

SECTION B (Attempt only TWO questions from this section)

1. Define stress and strain. With the aid of diagrams, explain the types of stress and strain you know in dental material science.
2. What are surface properties of materials? List and explain at least five surface properties of materials.
3. Discuss the importance of dental material science in dental technology practice.
4. Biocompatibility is an indispensable concept in dentistry. Explain this assertion.