



**Final Examination of Dental Biomaterials for Predental Students**

**Course Code:** TDEN 00:06

**Course Title:** Dental Biomaterials I

**Date:** 23-5-2016

**Time Allowed:** 3 hours

**Total Marks:** 36 marks

ملحوظة هامة: الامتحان ثمان ورقات

**I. Choose the correct answer ( 14 marks, 0.5 mark for each)**

- 1- The ability of sound teeth to absorb and emit light is called.....
  - a) Metamersim.
  - b) Fluorescence.
  - c) Opacity.
  - d) Translucency.
  
- 2- Dissolution of the material with mild mechanical action is called .....
  - a) Attrition.
  - b) Wear.
  - c) Erosion
  - d) Solubility.
  
- 3- ..... is the change in length per unit length of the material for 1°C change in the temperature.
  - a) Heat of fusion.
  - b) Specific heat.
  - c) Thermal diffusivity.
  - d) Coefficient of thermal expansion.
  
- 4- There is a direct relationship between thermal diffusivity and thermal conductivity. There is also direct relationship between thermal diffusivity and density.
  - a) The first statement is true; the second statement is false.
  - b) The first statement is false; the second statement is true.
  - c) The two statements are true.
  - d) The two statements are false.

- 5- The elastic modulus of a material is a measure of its:
- Hardness.
  - Toughness.
  - Stiffness.
  - Flexibility.
- 6- The ability of the material to withstand permanent deformation under TENSILE load is called
- Tensile strength.
  - Ductility.
  - Malleability.
  - Compressive strength.
- 7- The greatest stress to which a material can be subjected and RETURN to its original dimension when the load is released is the:
- Elastic limit of the material.
  - Ultimate strength.
  - Compressive strength of the material.
  - Yield stress.
- 8- Percentage of reduction in the cross section is a measure of:
- Ductility.
  - Resilience.
  - Stiffness.
  - Toughness.
- 9- The lower the contact angle between the adhesive and the adherent,
- The lower the wettability and the higher the bond strength.
  - The higher the wettability and the lower the bond strength.
  - The lower the wettability and the lower the bond strength.
  - The higher the wettability and the higher the bond strength.
- 10- Acid etching of enamel produces:
- Micromechanical bond to enamel
  - Macromechanical bond to enamel.
  - Chemical bond to enamel.
  - Chemo-mechanical bond to enamel
- 11- A Plasticizer:
- Reduce brittleness of the polymer.
  - Decrease glass transition temperature.
  - Decrease strength and hardness.
  - All of the above.
- 12- The polymerization reaction is associated with
- Residual monomer.
  - Polymerization shrinkage.
  - Heat release.
  - All of the above.

**13- Immediate and complete recovery is the property of:**

- a) Ideal elastic material.
- b) Ideal viscous material.
- c) Viscoelastic material.
- d) Anelastic material.

**14- To examine the hardness of rubbery materials, the best test will be:**

- a) Brinell hardness test
- b) Knoop hardness test
- c) Shore A hardness test
- d) All of the above

**15- Corrosion of eutectic alloys is .....**

- a) Stress corrosion.
- b) Crevice corrosion.
- c) Heterogeneous composition corrosion.
- d) Galvanic corrosion.

**16- Which of the following are examples of galvanism:-**

- a) A piece of aluminum foil from a packed potato becomes wedged between two teeth and contacts a gold restoration.
- b) A temporary plastic crown contacts a gold restoration.
- c) A temporary aluminum crown contacts composite restoration.
- d) Two low copper amalgam restorations.

**17- Which type of gold alloys has the lowest copper content?**

- a) Type I.
- b) Type II.
- c) Type III.
- d) Type IV.

**18- Addition of 1% beryllium in "cobalt- chromium alloy" is responsible for the following except: -**

- a) Lower the fusion range by about 100 °C
- b) Improve castability
- c) Refine grain structure.
- d) Improve corrosion resistance.

**19- Aluminum in base metal alloys:**

- a) Give solid solution with nickel that increases strength.
- b) Give solid solution with nickel that increases ductility.
- c) Give intermetallic compound with nickel that increases ductility.
- d) Form nickel aluminum compounds and produce precipitate hardening.