# Unit 8 - HA-based Composites



## Week 7 Assignment

**The due date for submitting this assignment has passed.**
**As per our records you have not submitted this assignment.**

**Due on 2019-09-18, 23:59 IST.**

1) Elements generally incorporated in the biomaterial for their antibacterial properties are — *1 point*

- silver
- calcium
- strontium
- magnesium

No, the answer is incorrect.
Score: 0
Accepted Answers:
*silver*

2) Doping of Ag in HA-Ag composites can be evaluated qualitatively by — *1 point*

- Thermo-gravimetric analysis
- Vibrating sample magnetometer
- Infra-Red spectroscopy
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*Infra-Red spectroscopy*

3) The inhibitory effect of HA-Ag composites on bacteria is due to — *1 point*

- $Ca^{2+}$ ions
- $(PO_4)_3$ ions
- $Ag^{+}$ ions
- none of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*$Ag^{+}$ ions*

4) The advantage of ZnO in HA-ZnO in antimicrobial composites is — *1 point*

- ZnO is a semiconductor
- ZnO produces $H_2O_2$ in solution
- increases the strength of the composite
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*ZnO produces $H_2O_2$ in solution*

5) Bactericidal agents are the ones which — *1 point*

- kill the bacteria
- inhibit the bacterial growth
- mutate the bacteria
- none of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*kill the bacteria*

6) Bacterial colony on a biomaterial can potentially be formed from — *1 point*

- a single bacterium
- 10 bacteria
- 100 bacteria
- 1000 bacteria

No, the answer is incorrect.
Score: 0
Accepted Answers:
*a single bacterium*

7) Addition of CaTiO3 to HA enhances the following property(ies) — *1 point*

- electrical conductivity
- strength and toughness
- dielectric property
- all of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*all of the above*

8) Bacteriostatic agents are the ones which — *1 point*

- kill the bacteria
- inhibit the bacterial growth
- mutate the bacteria
- none of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*inhibit the bacterial growth*

9) Following is not related with antibacterial study; — *1 point*

- minimum inhibitory concentration (MIC)
- zone-inhibition assay (ZIA)
- enzyme-linked immunosorbant assay (ELISA)
- colony forming unit (CFU)

No, the answer is incorrect.
Score: 0
Accepted Answers:
*enzyme-linked immunosorbant assay (ELISA)*

10) $BaTiO_3$ is used as an additive to HA for bone replacement applications due to its — *1 point*

- Piezoelectric property
- strength property
- toughness property
- none of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*Piezoelectric property*

11) Electrical properties of HA-$BaTiO_3$ composites depend(s) on — *1 point*

- $BaTiO_3$ content
- Sintering technique
- Phase Connectivity
- all of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*all of the above*

12) Following factors affect the cell adhesion and growth on substrates — *1 point*

- Surface charge
- Conductivity
- Elastic stiffness
- all of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*all of the above*

13) Fracture toughness of HA can be increased by — *1 point*

- Metal additives
- Crack bridging
- Polymer additives
- all of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*all of the above*

14) The fracture toughness of cancellous bone is _____ cortical bone — *1 point*

- less than
- more than
- equal to
- none of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*less than*

15) For bone mineralization the most suitable Ca and P ratio in HA is — *1 point*

- 2.56
- 1.67
- 8.67
- 5.00

No, the answer is incorrect.
Score: 0
Accepted Answers:
*1.67*