

**GOVERNMENT ARTS AND SCIENCE COLLEGE,
KOMARAPALAYAM- 638 183**

DEPARTMENT OF PHYSICS

SECOND INTERNAL EXAMINATION/OCTOBER-2023

Degree & Course: B.Sc-Physics Year/Semester: 3/5

Subject code: 21UPHE01

Time: 2hrs

Subject name: MATERIALSCIENCE

Max marks: 50

Part –A

I. Answer ALL the questions. (5X1=5 MARKS)

1. The physical properties of ceramics are similar to _____.
a) Bone b) Muscle c) Tissue d) none of these
2. Dental cement is _____.
a) PET b) PMMA c) PVC d) none of these
3. Uranium 238 can be converted as plutonium 239 by _____ bombardment.
a) Neutron b) Proton c) Electron d) none of the above
4. _____ material has the highest melting point of all oxides.
a) Aluminium oxide b) Platinum oxide c) Thorium oxide d) Plutonium oxide
5. In an optical fibre the refractive index of the core is _____.
a) Greater than the cladding b) Lesser than the cladding c) Equal to cladding
d) none of the above

PART-B

II. Answer any three questions. (3X5=15 Marks)

6. Define biomaterials and explain the need for biomaterials.
7. Discuss in detail about advantages and disadvantages of biomaterials.
8. Write a short note on cermets.
9. Write a short note on electrets.

PART-C

III. Answer any three questions. (3X10=30 Marks)

10. Explain in detail with examples and applications of a) ceramic and glass biomaterials b) polymeric biomaterials.
11. Write in detail about a) Biomaterial sources b) Advantages and disadvantages of biomaterials.
12. Discuss in detail about the properties and applications of a) metallic glasses b) super strong material.
13. Discuss about the properties and applications of a) Thermo electric material b) Fibre optic material.