



Note: Attempt 5 questions

- Q1:
- What is the consequence when there is a big difference of TCE between the substrate and the printed wiring board PWB, ball grid array BGA, and chip scale package CSP packages?
  - Briefly explain the applications of the ceramic varistors (with the figure)
- Q2: Explain Dielectric Resonator
- Q3: Draw illustration for Electro-optic and magneto-optic effects of some ceramic materials
- Q4: State the advantage and disadvantage of medical grade alumina in surgical implants and compare with zirconia
- Q5: State the Advantages of A/W Glass Ceramics in biomedical applications
- Q6: Explain the generic term of calcium phosphate cement used for *in vivo* applications.

**GOOD LUCK**