



**UJIAN AKHIR SEMESTER**  
SEMESTER GENAP - TAHUN AKADEMIK 2019/2020

Mata Kuliah/SKS	:	Material Teknik Lanjut /2 SKS
Hari/Tanggal	:	Rabu, Juni 2020
Jam	:	
Ruang ujian	:	
Sifat ujian	:	Buku Terbuka / <del>Buku Tertutup</del>
CPL	:	CK1, CK3, CP2
Dosen penguji	:	Dody Ariawan

---

**Bobot**

1. a) In terms of bonding, explain why silicate materials have relatively low densities b) (20%)  
What is the distinction between glass transition temperature and melting temperature in ceramic? c) Cite one reason why ceramic materials are, in general, harder yet more brittle than metals?
2. Which of the following polyethylene thin films would have the better mechanical (20%)  
characteristics: (1) formed by blowing, or (2) formed by extrusion and then rolled? Why?
3. For a polymer-matrix fiber-reinforced composite, (a) List three functions of the matrix (20%)  
phase. (b) Compare the desired mechanical characteristics of matrix and fiber phases. (c)  
Cite two reasons why there must be a strong bond between fiber and matrix at their  
interface.
4. (a) Briefly describe sandwich panels. (b) What is the prime reason for fabricating these (20%)  
structural composites? (c) What are the functions of the faces and the core?
5. Briefly describe pultrusion, filament winding, and prepreg production fabrication (20%)  
processes; cite the advantages and disadvantages of each.

(15%)

(15%)

**(15%)**

**(15%)**