

# Department of Forest Products Technology

## PUU-28.4001 WOOD MODIFICATION

Examination date 9<sup>th</sup> March 2009

1. Explain briefly the following terms: (6 marks)

- i. Sorption
- ii. Movement
- iii. Anti-swelling/shrinkage efficiency
- iv. Acetylation
- v. Photo-degradation
- vi. Bound water

2. Define wood modification and describe how wood modification differs from wood preservation. (4 marks)

3. The table below shows the dimensions of samples of modified and unmodified wood, in the oven dry (OD) state and after water soaking until the specimens are completely saturated. Calculate the swelling coefficients and ASE value of the modified wood.

	OD dimensions before soaking			Dimensions after soaking		
	Longitudinal (mm)	Radial (mm)	Tangential (mm)	Longitudinal (mm)	Radial (mm)	Tangential (mm)
Unmodified	150	50	50	151	52	54
Modified	150,25	50,25	50,5	150,5	51,75	52

(6 marks)

4. Write brief descriptions of the following: (12 marks)

- a) The factors that influence the impregnation modification of wood
- b) Factors influencing the acetylation of wood
- c) Weathering of wood

5. How are the properties of wood affected by thermal modification (10 marks)

6. Write an essay on one of the following: (12 marks)

**Either**

- a) Manufacture and applications of furfurylated wood

**Or**

- b) Future prospects for modified wood

