



Daffodil International University

Department of Textile Engineering

Faculty of Engineering

Midterm Examination; Spring-2026

Course Code: 0722-221

Course Title: Materials and Manufacturing Engineering

Level & Term: L3T1

Section: F1, F2, F3

Name & Designation of the Course Teacher: Dr. Md. Abdul Gafur (MAG) and Professor

Time: 1.5 hours.

Total Marks: 25

Answer all the questions:

1	Analyze by finding i) ferrite and cementite, ii) ferrite and pearlite and iii) eutectoid ferrite, and also providing the microstructure for a 0.30%C steel temperature, just below eutectoid temperature. [CLO3, PO1, C4]	8	8
2	Examine the microstructure by estimating %C and tensile strength for steel (hypo-eutectoid steel) having 70% ferrite-pearlite microstructure in annealed condition at room temperature. The steel must be in annealed condition-why? [CLO3, PO1, C4]	8	7
3	Distinguish between Annealing and Normalizing. [CLO3, PO1, C4]	4	4
4	Analyze the microstructure that will be developed if cooling rate is slower than 140°C/S and faster than 35°C/S by defining critical cooling rate (CCR).[CLO3, PO1, C4]	5	1/0 19/20