

# TXL775: Technical Textiles

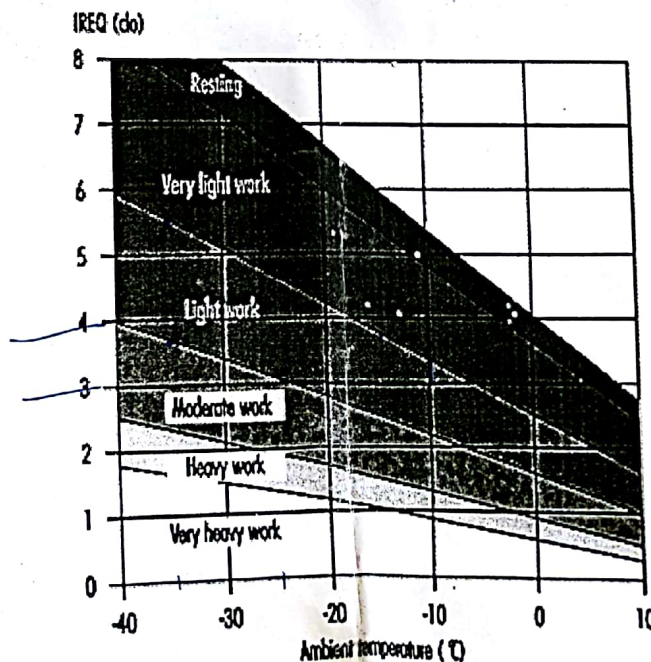
## Minor – I (Part-II)

Date: 07.02.2018

Time: 1 hr

Marks: 15

1. Describe very briefly four applications of technical textiles with specific characteristics requirement and type of textile structures. 4
2. Explain the heat balance of human body in case of a person sitting in a room of 20°C. [Assume all the necessary data and equations] 3
3. Calculate the UV index of a place that is situated 2.0 km above the sea level under partially clouded with 85% UV ray transmission condition [Assume all the necessary data]. 3
4. a) Define MET, Clo and Tog. Also discuss their interrelationships. 3 + 2 = 5  
b) With reference to the standard IREQ diagram (given below), suggest the total clothing combinations for a person doing light work at -35°C temperature and -10°C respectively (Refer the Table given in back side).



112  
35  
580  
2360  
4920  
85  
2460  
31360  
3382

Clothing ensemble	I <sup>cl</sup> (clo)
Briefs, short-sleeve shirt, fitted trousers, calf-length socks, shoes	0.5
Underpants, shirt, fitted, trousers, socks, shoes	0.6
Underpants, coverall, socks, shoes	0.7
Underpants, shirt, coverall, socks, shoes	0.8
Underpants, shirt, trousers, smock, socks, shoes	0.9
Briefs, undershirt, underpants, shirt, overalls, calf-length socks, shoes	1.0
Underpants, undershirt, shirt, trousers, jacket, vest, socks, shoes	1.1
Underpants, shirt, trousers, jacket, coverall, socks, shoes	1.3
Undershirt, underpants, insulated trousers, insulated jacket, socks, shoes	1.4
Briefs, T-shirt, shirt, fitted trousers, insulated coveralls, calf-length socks, shoes	1.5
Underpants, undershirt, shirt, trousers, jacket, overjacket, hat, gloves, socks, shoes	1.6
Underpants, undershirt, shirt, trousers, jacket, overjacket, overtrousers, socks, shoes	1.9
Underpants, undershirt, shirt, trousers, jacket, overjacket, overtrousers, socks, shoes, hat,	2.0
Undershirt, underpants, insulated trousers, insulated jacket, overtrousers, overjacket,	2.2
Undershirt, underpants, insulated trousers, insulated jacket, overtrousers, overjacket,	2.2
Undershirt, underpants, insulated trousers, insulated jacket, overtrousers, socks, shoes,	2.6
Undershirt, underpants, insulated trousers, insulated jacket, overtrousers and parka with	2.6-3.4
Arctic clothing systems	3-4.5
Sleeping bags	3-8