

M.TECH DEGREE EXAMINATIONS: DECEMBER 2008

First Semester

APPAREL TECHNOLOGY & MANAGEMENT

P08FT102 Clothing Comfort

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (20 x 1 = 20 Marks)

1. The value of Clo is
A. $0.155^{\circ} \text{ C m}^2/\text{W}$ B. $0.258^{\circ} \text{ C m}^2/\text{W}$ C. $0.2^{\circ} \text{ C m}^2/\text{W}$ D. $155^{\circ} \text{ C m}^2/\text{W}$
2. The term convection refers to mode of
A. water vapour transfer B. moisture transfer C. heat transfer D. light transfer
3. The skin temperature of human is
A. 37° C B. 40° C C. 35° C D. 33° C
4. Relation between Clo and fabric thickness is given by
A. $\text{Clo} = 1.6 * \text{thickness in cm}$ B. $\text{Clo} = 2 * \text{thickness in cm}$
C. $\text{Clo} = 0.5 * \text{thickness in cm}$ D. $\text{Clo} = 5 * \text{thickness in cm}$
5. The term Hygral expansion refers to
A. tensile extension B. dimensional stability C. crease recovery D. creep
6. ASTM standard E-96 gives method for measuring
A. thermal conductivity B. air permeability
C. moisture vapour transport D. bending length
7. The term micro climate refers to
A. external environment B. Body-clothing environment
C. inner body temperature D. skin temperature
8. The term "sorption of fibres" refers to
A. exchange of heat and moisture with differing humidity
B. wicking of moisture
C. Release of heat
D. ambient humidity
9. 'PMV' stands for
A. primary mean value B. predicted mean vote index
C. predicted mean value D. predicted metabolic value

10. Thermolabo is an instrument for measuring
A. physical comfort B. sensorial comfort C. aesthetic comfort D. thermal comfort.
11. The term MIU refers to
A. coefficient of friction B. compressional energy
C. fabric thickness D. geometrical roughness.
12. 'SOFUTOSA' means
A. stiffness B. soft touch C. bulkiness D. scratchiness
13. "Absorptivity" is a term that gives
A. hot feeling
B. resistance to thermal comfort
C. moisture transmission rate
D. warm – cool feeling when fabric touches skin
14. MVTR means
A. mechanism of vapour transport B. moisture vapour transmission rate
C. material vapour testing rate D. mechanical variables in testing rate
15. Wicking in yarns takes place due to
A. capillary force B. suction force C. absorption D. gradient force
16. The recovery of a fabric with low Rc value will be
A. high B. low C. zero D. total
17. The sewability of a fabric is highly influenced by
A. stretchiness B. stiffness C. liveliness D. thickness
18. Thermal conductivity is high for
A. silk B. polyester C. wool D. cotton
19. THV for summer suiting is approximately
A. 1 B. 3.5 C. 7 D. 10
20. "Alambeta" measures
A. thermal comfort B. dimensional stability
C. wash fastness D. abrasion resistance

PART B (5 x 16 = 80 Marks)

21. (a) List out the physiological aspects concerned with garments. Give an account of the relationship between physiology and comfort. (16)

(OR)

21. (b) Explain the concept of thermal comfort with respect to thermo physiology and thermoregulation of human body. Give the models developed to explain the above theories. (16)
22. (a) Discuss the various mechanisms of heat and moisture loss and explain the phenomena of insulation in maintaining thermal comfort. (16)

(OR)

22. (b). Discuss the following briefly.
- (i) Heat and moisture transfer of fabrics (8)
 - (ii) Thermal interaction between body and clothing (8)
23. (a) State the role of air and moisture transport on comfort characteristics of fabrics. (4)
- Explain any one instrument to measure moisture vapour transport of fabrics. (12)

(OR)

- 23.(b) With neat diagram describe the principle and functioning of ALAMBETA thermal conductivity tester, give the output results from the tester with relevant units. (16)
- 24.(a) Explain the various fabric properties that influence the body and tactile sensations. (16)

(OR)

24. (b) Discuss briefly the analysis of results from ALAMBETA thermal conductivity tester for various basic structures of weft knitted fabrics. (16)
25. (a) Explain the various fabric properties that are measured using FAST. (16)

(OR)

25. (b) Discuss the following briefly.
- (i) Scope of research on clothing comfort. (8)
 - (ii) What is PHV and THV? Explain the tailorability zone with respect to PHV and THV. (8)
