KUMARAGURU
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Register Number:……

M.TECH DEGREE EXAMINATIONS: JUNE 2017

(Regulation 2015)

Second Semester

TEXTILE TECHNOLOGY

P15TXT204: Clothing Comfort

COURSE OUTCOMES

CO1: Classify textile products according to end user requirements

CO2: List the ways of heat transmission of our body

CO3: Discuss the ways to improve moisture transmission characteristics

CO4: Selection of fibre type, yarn structure and fabric structure for sports applications

CO5: Differentiate between water repellent and waterproof fabrics

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Consider the following Assertion [A] and Reason [R] CO1 [K_2]

   [A] We feel uncomfortable in hot and humid climate.

   [R] In humid and hot climate body sweats more but sweat does not evaporate easily.

   a) [A] is right [R] is wrong
   b) [A] is wrong [R] is right
   c) [A] is right [R] is right
   d) [A] is wrong [R] is wrong

2. What is the unit for thermal resistance? CO1 [K_1]

   a) W/Hr
   b) Btu/Hr
   c) Clo
   d) mW/Hr

3. Which of the following instrument used to measure thermal transmission characteristics? CO2 [K_2]

   a) KES
   b) Alambeta
   c) Disc method
   d) Cup method

4. Match the following CO2 [K_3]

List I	List II
A. Core Body temperature	i. 33˚C
B. Microclimate	ii. Heat balance
C. Thermal comfort	iii. 37˚C
D. Skin temperature	iv. Area between skin and fabric

	A	B	C	D
a)	ii	i	iii	iv
b)	iii	i	ii	iv
c)	iii	iv	ii	i
d)	ii	iv	iii	i

5. Consider the following Assertion [A] and Reason [R] CO3 [K_2]

[A] The looser fabrics possess high insulation and high air permeability values, also give warmer feelings.

[R] Thermal conductivity, thermal resistance, thermal absorptivity and air permeability are affected from tightness factor significantly.

a) Both [A] & [R] are true and [R] is the correct reason for [A]
b) Both [A] & [R] are true and [R] is not the correct reason for [A]
c) Both [A] & [R] are false
d) [A] is true but [R] is false

6. Out of the following, which blended fabric, offers durability, ultra-softness, and excellent resilience? CO3 [K_2]

a) Cotton/Polyester/Rayon
b) Cotton/Polyester/Wool
c) Cotton/Polyester/Nylon
d) Cotton/Polyester/Silk

7. Consider the following statements & choose correct statements from amongst the alternatives CO4 [K_3]

1. Comfort is not influenced by the physiological reaction of the wearer
2. Comfort is not temperature regulation of the body.
3. Comfort is the absence of unpleasantness or discomfort.
4. Comfort is a state of pleasant psychological, physiological and physical harmony between a human being and the environment.

a) 1,4
b) 2,3
c) 3,4
d) 1,2

8. Which of the following mechanism is not involved in transmission of moisture vapour through textile materials? CO4 [K_2]

a) Adsorption
b) Absorption
c) Diffusion
d) Evaporation

9. Air permeability is **not** much important for fabric which is used as …… CO5 [K_2]

a) Tents
b) Sail cloths
c) Parachutes
d) Table covers

10. Choose the correct sequence of the factors affecting heat transfer from human body to environment. CO5 [K_3]

1.Wind speed 2.Micro climate 3.Core body temperature 4.Skin temperature

a) 2-3-4-1
b) 1-3-2-4
c) 3-4-2-1
d) 4-1-3-2

PART B (10 x 2 = 20 Marks)

11.	Define comfort.	CO1	[K_2]
12.	List out the factors influencing the selection of clothing for humans.	CO1	[K_2]
13.	Categorize thermal exchange takes place between body and environment.	CO2	[K_2]
14.	Enlist the parameters for expressing thermal characteristics.	CO2	[K_3]
15.	Compare wetting and wicking.	CO3	[K_3]
16.	List the advantages of hollow fibres over solid fibers.	CO3	[K_2]
17.	What are the effects of yarn structures on clothing comfort?	CO4	[K_3]
18.	What are profiled fibers?	CO4	[K_2]
19.	Give the techniques of producing micro fibres.	CO5	[K_2]
20.	Define WVP.	CO5	[K_2]

PART C (6 x 5 = 30 Marks)

21.	Summarize the factors affecting clothing selection.	CO1	[K_3]
22.	Describe three layer clothing system.	CO2	[K_3]
23.	Elaborate the basic functions of human skin.	CO3	[K_3]
24.	Summarize metabolic heat generation for various activities.	CO4	[K_3]
25.	Describe thermo-regulation of human body.	CO3	[K_3]
26.	Explain guarded hot plate method.	CO5	[K_4]

Answer any FOUR Questions

PART D (4 x 10 = 40 Marks)

27.	Explain physical and physiological factors that controlling the clothing comfort.	CO1	[K_3]
28.	What are the methods to measure thermal resistance of clothing? Illustrate with suitable example.	CO2	[K_4]
29.	Explain in detail the measurement of moisture vapour transmission properties of clothing.	CO3	[K_3]
30.	Explain in detail about FAST system is used for quality control and assurance of fabrics.	CO4	[K_4]
31.	Why we have to test flammability of cloth? Explain the steps involved in testing flammability.	CO5	[K_3]

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