

Register Number: .....

**B.TECH DEGREE EXAMINATIONS: NOV/DEC 2012**

Seventh Semester

**TEXTILE TECHNOLOGY**

TTX119: Technical Textiles

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-  
PART A (10 x 1 = 10 Marks)**

1. Silk is specially used in \_\_\_\_\_ applications.
  - a) Geotextile
  - b) Suture
  - c) Ballistic
  - d) Filtration
2. ----- fibre is having excellent energy absorbing properties which are used in ropes, parachute fabrics and spinnaker sails.
  - a) Cotton
  - b) Wool
  - c) Nylon
  - d) Polyester
3. Diameter of Monofilament in hail protection fabric is \_\_\_\_\_.
  - a) 0.001mm
  - b) 4.5mm
  - c) 0.3 mm
  - d) 3.0mm
4. Brownian Motion is related to \_\_\_\_\_ principle of filtration.
  - a) Impaction
  - b) Diffusion
  - c) Sedimentation
  - d) Interception
5. Soil-fabric interface exhibits greater shearing resistance than the surrounding soil, then the soil-fabric coefficient of interaction ( $\alpha$ ) is
  - a) =1
  - b) <1
  - c) 0
  - d) >1
6. \_\_\_\_\_ fibre is having excellent antithrombogenic property.
  - a) PLA
  - b) Chitin
  - c) PTFE
  - d) Viscose
7. The ratio of fibre to air is the factor deciding the \_\_\_\_\_ property of the fabric.
  - a) Water repellency
  - b) Rain proof
  - c) Water permeable
  - d) Thermal insulation

8. Activated carbon has an extremely large surface area, in some cases, in excess of
- a) 500 m<sup>2</sup>/g
  - b) 1000 m<sup>2</sup>/g
  - c) 2000 m<sup>2</sup>/g
  - d) 100 m<sup>2</sup>/g
9. Limiting Oxygen Index (LOI) is related to \_\_\_\_\_ property.
- a) Water repellent
  - b) Flame retardancy
  - c) Water proof
  - d) Oil retardant
10. The hose reinforced with \_\_\_\_\_ fabric have high resistance to kinking.
- a) knitted
  - b) woven
  - c) braided
  - d) spiral

**PART B (10 x 2 = 20 Marks)**

- 11. List the various driving factors influencing the technical textiles market.
- 12. What is FIBC? Mention a fibre used in FIBC.
- 13. List the general property requirements of agro textiles.
- 14. How singeing process enhances the dust cake release property in the filter fabric?
- 15. What are the essential properties of the geotextile?
- 16. List the requirements of the ideal wound dressing.
- 17. What are the physical requirements of modern military combat clothing?
- 18. What are visual decoys?
- 19. List the functions of tyre cord in the tyre.
- 20. Mention the construction particulars of seat belt.

**PART C (14 x 5 = 70 Marks)**

21. a) Explain briefly about the high strength & high modulus organic fibres and high chemical & high combustion resistant organic fibres.
- (OR)**
- b) Explain briefly about the high performance inorganic fibres and Ultra fine and novelty fibres.
22. a) Explain briefly the various applications of agro textiles mentioning raw materials, property requirements, product specification & characteristics in each application.

**(OR)**

b) Explain briefly the various factors influencing in the selection of filter fabric.

23. a) (i) Explain briefly the essential properties of geotextiles. (10)  
(ii) List the functions of geotextiles. (4)

**(OR)**

b) Explain briefly the various fibres and fabric structures used in Implantable, Non-implantable, extracorporeal and health & hygiene applications.

24. a) (i) List the various criteria considered for designing the modern military combat clothing. (8)  
(ii) Write short notes on thermal insulation materials. (6)

**(OR)**

b) (i) Explain the various methods for producing water vapour permeable clothing. (9)  
(ii) Write short notes on Textile materials in Ballistic Clothing. (5)

25. a) (i) Explain briefly the various property requirements in transportation textiles. (7)  
(ii) Write short notes on fibres used in transportation textiles. (7)

**(OR)**

b) (i) List the Essential Property Requirements of Tyre Cord. (5)  
(ii) Explain briefly the Seat Belt and Air bag w.r.t raw material, property requirement, fabric structure and manufacturing technology. (9)

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