

B.TECH DEGREE EXAMINATIONS: APRIL/MAY 2014

(Regulation 2009)

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. The bulk storage and transport of fertilizer and agricultural products is increasingly undertaken using _____.
a) Knitted polypropylene b) Woven polypropylene
c) Spunlaid polypropylene d) Needle punched polypropylene
2. _____ fibre is widely used in air bag manufacturing.
a) Nylon 66 b) Nylon 6
c) Polypropylene d) Polyethylene
3. _____ fibre is having excellent resistance to hydrolytic degradation.
a) PP b) PBI
c) PPS d) PET
4. _____ process enhances the dust holding capacity in the filter fabric.
a) Singeing b) Heat setting
c) Raising d) Waxing
5. _____ are continuous sheets of impermeable plastic used in geotechnical application.
a) Geomembranes b) Geogrids
c) Geocomposites d) Geopipes
6. Commercially available vascular grafts are produced from _____ with either woven or knitted structures.
a) Nylon b) Cotton
c) Aramid d) Polyester
7. 1 Tog = _____
a) mK/10 Watts b) m²K/10 Watts
c) m³K/10 Watts d) m²K/10 Kilo Watts
8. The majority of ballistic fabrics are of a coarse loose _____ construction.
a) Twill-woven b) Plain-woven

- c) Satin-woven d) Basket-woven
9. The two most important factors governing the selection of fabrics for car seat covers are
a) Colour and Pilling tendency b) Stiffness and Bursting strength
c) Moisture absorption and Thermal insulation d) Resistance to light (UV radiation) and abrasion
10. Seat belts are multiple layer woven narrow fabrics in _____ construction.
a) plain b) crepe
c) basket d) twill

PART B (10 x 2 = 20 Marks)

11. Why polypropylene fibre is preferred in diaper inner layer?
12. Viscose rayon is most preferred in automotive and industrial equipment market. Justify with reasons.
13. What is hydrolytic degradation?
14. List the various property requirements of agro textiles.
15. What are the essential properties of geotextiles?
16. What are extra-corporeal devices?
17. List the physical requirements of military textile materials.
18. What is hyperthermia and hypothermia?
19. Mention the property requirements of tyre cord.
20. What is the function of fuel filter and carburetor filter in a car?

PART C (5 x 14 = 70 Marks)

21. a) (i) Classify technical textiles w.r.t fibre and fabric structure. (4)
(ii) Discuss briefly the fibres used in civil, agricultural, automotive and hygiene applications w.r.t properties and applications. (10)
- (OR)**
- b) (i) Discuss the scope of technical textiles in Asia, USA and Europe. (4)
(ii) Explain briefly the properties and applications of various forms of technical yarns and technical fabrics in technical textiles. (10)
22. a) Explain briefly the various applications of agro textiles along with properties. Also mention fibres and fabric structures used in each application.

(OR)

- b) (i) Discuss steady state conditions and blinding tendency during filtration-cleaning phases. (5)
- (ii) Explain briefly the various factors considered in the designing of filter fabric for solid-liquid filtration application. (9)

23. a) (i) Explain briefly the essential properties of geotextiles. (7)
- (ii) Explain briefly the engineering properties of geotextiles. (7)

(OR)

- b) Explain briefly the various applications of medical textiles along with properties. Also mention fibres and fabric structures used in each application.

24. a) (i) Explain briefly about the various thermal insulation materials used in protective textiles. (8)
- (ii) Write short notes on ballistic protective materials. (6)

(OR)

- b) (i) Explain briefly about the textile materials used for camouflage concealment and deception. (8)
- (ii) Write short notes on biological and chemical warfare protective textiles. (6)

25. a) Explain briefly the car seat, air bag, seat belt and carpets w.r.t functions, property requirements, fibre, fabric structure, manufacturing and finishing.

(OR)

- b) (i) Explain briefly the applications of textiles in aircraft and marine fields. (7)
- (ii) Explain briefly about the hoses w.r.t property requirements, construction, fibres and yarn used. (7)
