

THE TEXTILE ASSOCIATION (INDIA)
A.T.A. PART III EXAMINATION-2020
PAPER A3C.1
ELEMENTS OF TECHNICAL TEXTILES

Date:24.12.2020

MARKS 100

Time:10.00 am to 1.00 pm

INSTRUCTIONS:

1. Attempt any six questions from each section out of which Q.1 is compulsory
2. Answer each next main question on new page.
3. Figure to the right indicate full marks.
4. Illustrate your answers with sketches and flow charts wherever necessary
5. Use of non-programmable electronic pocket calculator permissible.
6. Mobile and any other communicable devices are not allowed in the exam hall.
7. Assume suitable data wherever necessary.

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- Q.1.i) Define the term technical textiles. List their different segment. How do technical textiles differ from conventional textiles? (12)
- ii) Classify the following into various segments of technical textile. Justify your answer. (8)
- a. Bandages b. Filter fabric
b. Conveyor belt d. Parachute fabric
- Q.2. i) Define nonwoven fabrics. State the advantages of nonwoven fabrics (8)
- ii) With a neat and labeled diagram, explain the needle-punched nonwoven fabric manufacturing technique. (8)
- Q.3.i) 'Coating and lamination techniques help to convert a textile substrate into a functional technical textile' Illustrate this statement with two examples giving merits of the process. (8)
- ii) What are composites? What is the role of textiles in making of composites? Explain the different types of textile structures that can be used in making Composites. (8)
- Q.4 i) What are Geotextiles? Enumerate the various fibres used for the area of Geotextiles (8)
- ii) Geotextiles help to improve the service life of roads. Justify with examples. (8)
- Q.5 Write a short note on Any Two (16)
- i) Filtration textile ii) Defense textiles iii) Textiles in conveyor belts.
- Q.6 i) Define medical textiles. Classify them based on their application (8)
- ii) Explain the different fibres that are used in the area of medical textiles. (8)
- Q.7 i) Explain the various types Ballistic Protective textiles based on their functional requirements. Justify the fibres used for ballistic protective application. (8)
- ii) What are flame retardant textiles? Explain the importance of flame-retardant materials. Briefly describe the different techniques of making flame retardant textiles. (8)
- Q.8 i) Explain in detail the properties of textile materials used in Home textiles (8)
- ii) What is chaffer fabric? How is it used in the tyre cord industry? (8)