THE TEXTILE ASSOCIATION (INDIA)

ATA Part III Examination 2020

Paper: A3.C.2

Man Made Fibre Technology

Marks – 100

Date: 25.12. 2020 **Time 10.00 am to 1.00 pm**

Instructions:

1. Answer any six questions out of which **Question No 1** is compulsory.
2. Answer each next main question on a new page.
3. Figure to the right indicate full marks.
4. Illustrate your answers with sketches and flow chart wherever necessary.
5. Use of non- programmable electronic pocket calculator is permitted.
6. Mobile and any other communication devices are not allowed in examination hall.
7. Assume suitable data wherever necessary.

Q. 1 Answer the followings in **two or three** sentences and each question carry equal marks. (20)

i. What are the advantages of manmade fibers?
ii. What are the different fibre forming methods?
iii. What is fully drawn yarn?
iv. Why spin finish is applied on manmade fibres?
v. What is hollow fibre?
vi. What is the role of catalyst in fiber production?
vii. What is texturising?
viii. What are the advantages of blended yarns?
ix. What is hot crimp contraction of textured yarn?
x. What are the raw materials for nylon 66 fibre?

Q. 2 a What is molecular orientation in a fibre? Explain the effect of molecular orientation on the characteristics of fibre. (8)

b With a neat line diagram, explain the dry –jet wet spinning process (8)

Q. 3	a	Describe the melt spinning process for polyester filament yarn along with process parameters and line diagram of process	(8)
	b	Explain the physical characteristic of polyethylene terepthalate fibre	(8)
Q. 4	a	Describe the polymerisation and melt spinning of nylon 6 staple fibres	(8)
	b	Explain the tensile and thermal characteristics of nylon 6 and nylon 66 fibres	(8)
Q.5	a	Discuss the role of addition of comonomer in polyacrylonitrile fibres production.	(5)
	b	Describe the production of polypropylene filament yarn.	(6)
	c	Explain the characteristics of polypropylene fibre	(5)
Q.6	a	With a flow chart, explain the viscose spinning solution preparation process	(6)
	b	What is TENCEL fibre? and explain the production of it	(6)
	c	What are the advantages of TENCEL fibres as compared to viscose fibre	(4)
Q.7	a	What is false twist texturising process? And describe the simultaneous draw texturising process along with line diagram and process parameters	(6)
	b	What is the principle of loops formation in air jet texturising?	(4)
	c	What is the effect of overfeed to jet on the characteristics of air jet textured yarns	(6)
Q.8	a	Compare different methods of blended yarns production?	(8)
	b	With flow chart, explain the polyester/wool blended yarn production process	(8)

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