Code: 15O-5201 **TEXTILE**

THIAGARAJAR POLYTECHNIC COLLEGE, SALEM

(Autonomous) **Reg. No.**

October/November 2018 Examinations

DIPLOMA IN TEXTILE TECHNOLOGY

Fibre Science and Technology

Year/Sem: II / III (ODD-II) Max. Marks : 75 Time : 3 hrs.

PART-A **(5 x 2 = 10 Marks)**

Note: (i) Answer any FIVE questions out of which question No.8 is compulsory.
(ii) All questions carry equal marks.

1 What is staple fibre?
2 What is monomer?
3 Write the chemical composition of raw cotton.
4 Mention the sequence of processes in jute fibre extraction.
5 Mention any four wool producing countries.
6 What is weighting of silk?
7 Mention the uses of polynosic rayon.
8 What is air jet texturising?

PART-B **(5 x 3 = 15 Marks)**

Note: (i) Answer any FIVE questions out of which question No. 16 is compulsory.
(ii) All questions carry equal marks.

9 What is flat and textured yarn?
10 What is orientation and crystallinity in fibre structure?
11 Draw the physical structure of cotton.
12 What do you understand about degumming of silk?
13 Write short notes on grading of wool.
14 Mention the uses of lyocell fibre.
15 Mention the uses of LDPE and HDPE.
16 Mention the uses of ramie and sisal fibre.

PART-C **(5 x 10 = 50 Marks)**

Note: (i) Answer all the questions choosing either sub-division (A) or sub-division (B) of each question.
(ii) All divisions carry equal marks.

17 A Explain the properties required for an ideal textile fibre. 10

(OR)

B Explain the classification of textile fibres with reference to origin and chemical nature. 10

18 A With a flowchart, explain the extraction of flax fibre from the plant. 10

(OR)

B Describe the physical and chemical properties of cotton fibre. 10

19 A With a line diagram, explain the life cycle of silk worm. 10

(OR)

B Explain the classification of wool with respect to sheep and fleece. 10

20 A Explain the production of viscose staple fibre with line diagram. 10

(OR)

B Describe the physical and chemical properties of polynosic rayon. 10

21 A Describe the physical and chemical properties of nylon 6 & nylon 66. 10

(OR)

B Describe the physical and chemical properties of acrylic fibre. 10

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DIPLOMA IN TEXTILE TECHNOLOGY

Yarn Manufacture-I

Year/Sem: II / III (ODD-II) Max. Marks : 75 Time : 3 hr.

PART-A **(5 x 2 = 10 Marks)**

Note: (i) Answer any FIVE questions out of which question No.8is compulsory.
(ii) All questions carry equal marks.

1 What is contamination and write its effect on quality.
2 Briefly explain the automatic waste evacuation system in blow room?
3 Write any two defects in blow room lap, give their causes and remedies.
4 What is the purpose of Grinding?
5 What are the factors assisting the fibres transfer from cylinder to doffer?
6 Explain the types of auto levelers in carding.
7 List the modern developments in licker-in and cylinder region.
8 Briefly explain the draft and its distribution in the draw frame.

PART-B **(5 x 3 = 15 Marks)**

Note: (i) Answer any FIVE questions out of which question No. 16 is compulsory.
(ii) All questions carry equal marks.

9 Write the properties of fibres to be considered for mixing. Name few varieties of cotton to spin 40s warp yarn.
10 Explain the principles of opening and cleaning.
11 Why the main cylinder is called as the heart of the card and write a short note on fibre arrangements in carded sliver?
12 Explain the merits and demerits of chute feed system.
13 Give the blow room line for fine grade cotton.
14 Explain the principles of doubling and drafting.
15 Briefly explain the sliver quality monitoring device.
16 Explain the principle of carding.

PART-C **(5 x 10 = 50 Marks)**

Note: (i) Answer all the questions choosing either sub-division (A) or sub-division (B) of each question.
(ii) All divisions carry equal marks.

17 A Explain with a neat sketch the working principle of knife roller ginning machine. 10

(OR)

B Explain the working principles of unimix with neat sketch. 10

18 A Explain the principle and working of ERM Cleaner with a neat sketch. 10

(OR)

B Explain the function of the following in cotton blow room line. 10
(i) Electronic Metal Detectors (ii) Fire Eliminator (iii) Two way distributors

19 A With a neat sketch, indicate the following parts of the carding machine and write the constructional features of each part. 10
(i) Main cylinder (ii) Flats (iii) Back plate (iv) Licker-in

(OR)

B Write the metallic wires specifications for cotton process in licker-in and cylinder and also explain the card settings for long staple cotton. 10

Contd.....2

20 A List out any five salient features of modern high production card and also give the defects in card sliver and their causes and remedies. 10

(OR)

B Calculate the production in kg. of a card room per shift of 8 hours. 10

Hank of the lap	= 0.00131
Mechanical draft	= 90
Doffer speed	= 15 rpm
Doffer diameter	= 27"
Total waste extraction at card	= 5%
Number of cards in card room	= 10
Card room efficiency	= 80%

21 A Explain the construction and working of 3/3 pressure bar drafting system with neat sketch. 10

(OR)

B Calculate the production of a draw frame in kgs./shift of 8 hours with the following particulars. 10

No of deliveries	- 2
No of ends up	- 8
Efficiency	- 90%
Draft	- 8.6
Hank of card sliver	- 0.14
Front roller delivery speed	- 360 m/min.

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October/November 2018 Examinations

DIPLOMA IN TEXTILE TECHNOLOGY

Fabric Manufacture-I

Year/Sem: II / III (ODD-II) Max. Marks : 75 Time : 3 hr.

PART-A **(5 x 2 = 10 Marks)**

Note: (i) Answer any FIVE questions out of which question No.8 is compulsory.
(ii) All questions carry equal marks.

1 State the term Angle of cone and Angle of wind.
2 Mention any two salient features of computerized sectional warping machine.
3 Define Ne, Tex count.
4 List out any four size ingredients used in size mixing.
5 Mention the different types of sheds formed in shedding.
6 Define Eccentricity of Sley.
7 What are the types of warp protecting mechanisms?
8 State the importance of temples used in plain power loom.

PART-B **(5 x 3 = 15 Marks)**

Note: (i) Answer any FIVE questions out of which question No. 16 is compulsory.
(ii) All questions carry equal marks.

9 State the term splicing and what are the types of splicing?
10 Mention the defects in cone, their causes and remedies.
11 Mention the types of creels used in warping machine.
12 What are the factors affect the size pick up?
13 What are the controls available in a sizing machine?
14 Mention the merits and demerits of negative tappet shedding.
15 What is the necessity and object of auxiliary motions in a plain power loom?
16 What are the differences between loose reed and fast reed motions?

PART-C **(5 x 10 = 50 Marks)**

Note: (i) Answer all the questions choosing either sub-division (A) or sub-division (B) of each question.
(ii) All divisions carry equal marks.

17 A Explain the different types of Tensioning devices and yarn clearers used in Cone winding machine. 10

(OR)

B Describe the Schlafhorst Autoconer with a simple sketch and list out the salient features. 10

18 A Explain the passage of material through sectional warping machine with neat sketch. 10

(OR)

B Calculate the production of Cone winding machine in kg with the following particulars. 10

Drum RPM - 12000 rpm Time - 8 hr.
Efficiency - 90 % Diameter of drum - 3.0 inch
Count - 40s No. of cone winding units /machine - 60

19 A Explain the different types of size ingredients used and its functions in size mixing. 10

(OR)

B Explain with a neat sketch the multi cylinder sizing machine. 10

20 A With a neat sketch explain the passage of warp through a plain power loom. 10

(OR)

B Explain the working of cone over picking mechanism with a neat line diagram. 10

21 A What is the object of let-off? With a neat sketch explain the working of negative let-off motion. 10

(OR)

B With a neat sketch explain the working of side weft fork motion. 10

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