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BT–4 / M–14

YARN MANUFACTURE – II

Paper – TT–202 Opt. (A)

Time allowed : 3 hours] *[Maximum marks : 100*

Note : ***Question No. 1*** *of* **Section–A** ***is compulsory.*** *Attempt* ***four (4)*** *questions taking* ***one*** *each from* **Section–B, C, D** *and* **E.**

Section–A (Multiple choice questions)

1. (a) Function of scouring is to remove $20\times1=20$
(i) protein (ii) grease (iii) starch

(b) Purpose of carding machine is
(i) to remove impurities and open neps
(ii) to parallelize the fibre
(iii) to impart twist

(c) Which one is trace of air jet spinning
(i) it is suitable for spinning finer yarn
(ii) it is suitable for spinning coarser yarn
(iii) it is suitable for spinning very short fibres.

(d) Which one is correct for worsted spinning system
(i) Combing is an essential process.
(ii) Combing may be eliminated
(iii) Gilling is an optional process

(e) Fineness of polyester fibre is expressed in
(i) Denier
(ii) Micron
(iii) Micronaire value

(f) Function of gills is
(i) opening of fibre
(ii) twisting of fibre
(iii) provide guidance to the fibres

(g) Periodic irregularity of the yarn arises because of
(i) length variation of fibres
(ii) defects in machinery parts responsible for movement of fibres
(iii) impurities present in the fibre.

(h) Capsules in TFO used in regulation of
(i) yarn tension
(ii) speed
(iii) degree of parallization of fibres

(i) Longer fibres requires
(i) more twist (ii) less twist (iii) same twist

(j) Purpose of combing is to
(i) remove short fibres
(ii) opening of neps
(iii) blending of fibres

(k) Purpose of twisting is to
(i) improve strength
(ii) draft the fibres
(iii) removal of hooks

(l) The autoleveler is used to
(i) remove short fibres
(ii) to reduce mass variation
(iii) to help in blending

(m) Twist setting is carried out
(i) to increase twist
(ii) to reduce snarling tendency by stress relaxaion
(iii) to reduce twist

(n) Evenness is better in
(i) Rotor yarn (ii) Ring yarn (iii) Jet spun yarn

(o) Worsted spinning is suitable for following micron values of wool

(i) 18–24μ (ii) 30–38μ (iii) 36–40μ

(p) Kemp. is defined as

(i) Shorter wool fibre

(ii) Jute fibre

(iii) Silk fibre

(q) What do you mean by stripping action ?

(r) What is the function of anti node balloon control ring ?

(s) What do you mean by drafting wave ?

(t) What is the function of worker and stripper roller ?

(u) What do you mean by wrapper fibre in an airjet yarn ?

Section–B

2. (a) Discuss the difference in properties of woollen and worsted yarn. Give examples of the end uses of woollen and worsted yarn. 10

(b) Draw a neat sketch of woollen card and discuss the function of important parts. 10

3. (a) Draw a neat sketch of Rubbing frame and explain the functions of important parts. 10

(b) Discuss the working of a gill box. What are the difference between chain gill box and screw gill box ? 10

Section–C

4. (a) Explain the reeling process with a neat sketch. 10

(b) Discuss with a neat sketch. The working of a T.F.O. How do you control the breakage at T.F.O. 10

5. (a) Draw flow chart of Jute spinning process. How does it differ from cotton spinning ? 10

(b) Describe a carding machien suitable for Jute spinning with the help of neat sketch. 10

Section–D

6. (a) What are the objectives of blending ? How do you measure homogeneity of blends ? What are the pre-requisites of obtaining homogenious blend ? 10

(b) Discuss the relative merits, demerits and scope of application of various blending process. 10

7. (a) Discuss the various factors needs to be considered while mixing two different categories of fibres. What are the possible reasons for blend variation in the yarn ? 10

(b) Discuss the tensile behaviour of a blended yarn spun from fibres of wide variations in elastic properties. 10

Section–E

8. Discuss how tensile properties of airjet spun yarn will be affected by

(i) increase in 1st nozzle pressure
(ii) 2nd nozzle pressure
(iii) main draft
(iv) spinning speed
(v) condenser width. 4×5=20

9. Explain why

(a) Strength of Rotor spun yarn is less than Ring spun yarn
(b) Rotor spun yarn is more even than equivalent ring spun yarn
(c) Airjet yarns are stiffer than equivalent ring yarn
(d) Abrasion resistance of rotor yarn is higher than ring yarn
(e) Airjet yarn not suitable for coarser yarn and for shorter cotton fibre. 4×5=20