

22369

12425

03 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
- (2) Answer each next main Question on a new page.
- (3) Illustrate your answers with neat sketches wherever necessary.
- (4) Figures to the right indicate full marks.
- (5) Assume suitable data, if necessary.
- (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any FIVE of the following :** **10**
- a) Arrange the following count systems in indirect and direct system.
- i) Tex
- ii) Worsted
- iii) English system
- iv) Metric
- v) Denier
- vi) Wollen
- b) Define “metric yarn numbering system.”
- c) List the merits of “twist” and Define the term “T.P.I.”
- d) Define the “S” twist and “2” twist with relevant sketches.
- e) State the concept of evenness and unevenness with sketch. P.T.O.

- f) State the concept of C.R.E. with sketch.
- g) Define the following terms –
 - i) Elongation
 - ii) R.K.M.

2. Attempt any THREE of the following : **12**

- a) Calculate the resultant count (Ne), if three fold yarn having 40, 30, 20 Ne yarn count respectively.
- b) Describe the effect of twist on fabric property w.r.t. dyeing behaviour, visual appearance, abrasion property.
- c) State the concept of random and periodic variation in yarn with sketch.
- d)
 - i) Define the Hariness index.
 - ii) List the various methods to measure the yarn hariness.

3. Attempt any THREE of the following : **12**

- a) Determine the length of yarn in yards for following counts.
 - i) 40^S Ne
 - ii) 1 Ne
 - iii) 150" Ne
 - iv) 10^S Ne
- b) Describe the untwisting principle to measure the yarn twist from doubled yarn.
- c) Describe the method to measure the yarn unevenness by visual examination method.
- d) Define the following term –
 - i) limit irregularity
 - ii) Index of irregularity
- e) Discuss the various reasons for generation of yarn hariness in yarn.

- 4. Attempt any THREE of the following :** **12**
- a) Describe with sketch the method to calculate the yarn count from the fabric.
 - b) Describe the various causes of irregularity both on yarn and fabric.
 - c) Describe the microscopic method to measure the yarn hairiness with sketch.
 - d) Draw the schematic diagram of ballistic strength tester and describe the procedure to measure the C.S.P.
- 5. Attempt any TWO of the following :** **12**
- a) State the concept of spectrogram and discuss the analysis method to analyse the spectrogram.
 - b) Define the following terms with example.
 - i) Elastic recovery
 - ii) Initial young modulus
 - ii) Work factor
 - c) Describe the working principle of stelometer with its sketch.
- 6. Attempt any TWO of the following :** **12**
- a)
 - i) State the concept of time dependant effects and instantaneous effects of load on yarn.
 - ii) Distinguish between constant rate of loading and constant rate of traverse.
 - b) Describe the Hot air and Hot water method to measure the dimension stability of filament yarn.
 - c)
 - i) State the principle of strain gauge with schematic diagram.
 - ii) State the concept of crimp rigidity.
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