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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI- EXAMINATION - SUMMER 2016

Subject Code: 162903 Date: 09/05/2016 **Subject Name: Physical Testing** Time: 10:30 AM to 01:00 PM **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. **Q.1** Explain air flow principle through porous cotton plug. Establish relationship 14 between specific surface and fiber diameter. Explain working of an instrument based on the principle. How the results are related to maturity of cotton fiber? What are the effects of rate of loading and time to break the specimen on **Q.2 07** (a) strength test? Derive equation if necessary. **(b)** Write a short note on sampling for textile testing. 07 With diagram explain working and use of the instrument for testing varn count **(b)** 07 from the fabric sample. **Q.3** Briefly explain maturity test by caustic method. Also Define Maturity Ratio and (a) 07 Maturity Coefficient. **(b)** Write in short on fibre testing methods available on HVI. 07 OR Define hairiness index as given by Uster and Zweigle. Write in short on any **Q.3** 08 (a) one instrument to measure yarn hairiness. Define crimp rigidity. Also write on method to measure the same. How test **(b)** 06 results are used? **Q.4** What is meant by CRL, CRE, CRT and CRS? Write in detail on any one 14 instrument based on CRT for strength testing of yarn. OR **Q.4** Explain working of any one instrument for testing the Tearing Strength of **07** (a) fabric. With sketch explain working of fabric stiffness tester. What are different **07 (b)** parameters derived from the bending length? **Q.5** Define air permeability, air resistance and air porosity. Write briefly on any **07** (a) instrument used to measure air permeability. How cutting and weighing method can be used for evenness testing of varn? **(b) 07** Write a short note on analysis of periodic & random yarn faults. **Q.5** 07 (a) What are three basic forms of irregularity? What is the use of damped or inert **07 (b)** test? Also calculate final sliver CV% on a draw frame from following data. Doubling: 6 Sliver CV%: 2.38 Draw Frame CV%: 3.7
