Seat No.:	Enrolment No

GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-1st / 2nd EXAMINATION (SPFU) – WINTER 2015

Subject Code: BSP001 Date:28/12/2015 **Subject Name: Engineering Physics** Time: 10:30am to 01:30pm **Total Marks: 70** Instructions: 1. Attempt any five questions. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 07 **Q.1** Describe characteristics of Sound in detail. What is range of ultrasonic sound? Discuss any method to produce ultrasound. 07 What is Gauss' law? Discuss an application of Gauss's law. 07 **Q.2** (a) What are the types of magnetic materials? Discuss any one in detail. **(b)** 07 What are characteristics of LASER? Describe in detail. **Q.3** 07 (a) Write down a short note on Nd:YAG laser with proper diagram. 07 State principle of Optical fiber. Describe construction of optical fiber with 0.4 07 (a) necessary diagram. What is superconductivity? Describe relation between superconductivity and **(b) 07** temperature in detail. **Q.5** State difference between type I and type II superconductor with proper 07 diagrams and necessary conditions. Discuss any one method to prepare nano-material. 07 **(b)** What is NDT? Discuss about applications of NDT. **07 Q.6** (a) What are applications of Nanomaterials? **(b)** 07 **Q.7** Define: Bohr Magneton. State properties of ferromagnetic materials. 07 (a) **(b)** List out applications of Superconductor. Describe anyone in detail. 07
