

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name: Physics-II

Subject Code: 4SC02PHC1

Branch: B.Sc. (All)

Semester: 2

Date: 27/04/2018

Time: 10:30 To 01:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1 Attempt the following questions: (14)

- a) Define the term Anisotropy.
- b) Draw symbolically P-N-P and N-P-N transistors.
- c) Give examples for Isotopes and Isotones.
- d) Abbreviate LED and draw its symbol.
- e) Define Musical sound.
- f) Write Bragg's formula for X-ray diffraction..
- g) What is threshold intensity of sound?
- h) Give one point of difference between crystalline and non-crystalline solids.
- i) Define Unit cell.
- j) What are X-rays?
- k) Give an expression connecting Half Life Time ' τ ' and Decay Constant ' λ ' for a radioactive element.
- l) Define Bravais lattice.
- m) Define Doppler effect.
- n) State the working principle of a photodiode.

Attempt any four questions from Q-2 to Q-8

Q-2 Attempt all questions (14)

- a. Differentiate between Longitudinal waves and Transversal waves? **06**
- b. Discuss the properties of X-rays. **08**

Q-3 Attempt all questions (14)

- a. Explain how multi-colour LEDs works? **06**
- b. What is Bravais Lattice? Describe 14 Bravais lattices of 7 crystal systems with lattice parameters and diagrams. **08**

Q-4 Attempt all questions (14)

- a. State and explain the Laws of Radioactivity **06**
- b. Derive Newton's formula for velocity of sound in air applying Laplace's Correction to it. **08**



