

Enrollment No: _____

Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name : Applied Physics

Subject Code : 2TE02APH1

Branch: Diploma (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.
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Q-1

Attempt the following questions:

(14)

- a) The SI unit of force is _____
 - 1) Joule
 - 2) Hertz
 - 3) metre
 - 4) metre-second
- b) If a wave has a time period of 20 ms, its frequency is _____
 - 1) 10 ms
 - 2) 20 ms
 - 3) 40 ms
 - 4) 5 m
- c) $1 \text{ \AA}^0 =$ _____ metre
 - 1) 10^{-10}
 - 2) 10^{-14}
 - 3) 10^{-16}
 - 4) 10^{-8}
- d) In an intrinsic semiconductor the number of free electrons are _____
 - 1) Less than holes
 - 2) Equal to holes
 - 3) Greater than holes
 - 4) zero
- e) The CGS unit of time is _____
 - 1) Minute
 - 2) Hour
 - 3) Second
 - 4) Gram
- f) In MKS system the M is meter , K is ___



- 1) kilometer
 - 2) kilogram
 - 3) kilo
 - 4) Kelvin
- g)** If two resistors of 20Ω are connected in series, its equivalent resistance is _____ Ohm
- 1) 40
 - 2) 10
 - 3) 5
 - 4) 0
- h)** A pentavalent impurity is added to the silicon atom to form _____ type of semiconductor.
- 1) Intrinsic
 - 2) P-type
 - 3) N-type semiconductor
 - 4) all
- i)** Unit of the fundamental quantity -temperature is _____ as per SI
1. Meter
 2. second
 3. kelvin
 4. mole
- j)** Give the unit of Radioactivity
- 1) Query
 - 2) kelvin
 - 3) Radian
 - 4) second
- k)** Charge of electron is _____
- 1) positive
 - 2) negative
 - 3) neutral
 - 4) zero
- l)** The least count of micrometer screw gauge is _____ cm .
- 1) 0.001
 - 2) 0.1
 - 3) 1
 - 4) 10
- m)** Light waves are _____
- 1) Longitudinal wave
 - 2) Transverse wave
 - 3) electromagnetic wave
 - 4) none
- n)** Same charges _____ each other
- 1) attracts
 - 2) repale
 - 3) cangle
 - 4) ignore



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

- Q-2** **Attempt all questions** **(14)**
A Give the name, units and symbols of the fundamental physical quantities according to S.I. system.
B Give the principle of vernier callipers. What is zero error, positive error and negative error?
- Q-3** **Attempt all questions** **(14)**
A Give the statement of Ohm's Law and give its limitations.
B Explain the V-I characteristics of P-N junction diode.
- Q-4** **Attempt all questions** **(14)**
A Draw and Explain conductor, Semiconductor and isolator with energy band gap.
B Explain the phenomenon of Nuclear Fission.
- Q-5** **Attempt all questions** **(14)**
A Explain the differences between longitudinal and transverse waves.
B Give the statement of Newton's laws for motion, force and momentum. Derive the formula $F= ma$.
- Q-6** **Attempt all questions** **(14)**
A Write and explain Kirchorf's Current Law and Kirchorf's Voltage Law.
B Derive the expression for series and parallel combination of resistances.
- Q-7** **Attempt all questions** **(14)**
A Give the relation between surface tension and surface energy.
B Explain Coulomb's Inverse square law and Derive the equation of force between two charges.
C Derive the expression for series and parallel combination of resistances.
- Q-8** **Attempt all questions** **(14)**
A Explain Simple harmonic motion.
B Discuss the uses of nano technology in the engineering field.







