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.

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 A^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 20 Ω 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) cancle
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.	