[Total No. of Printed Pages:1] **CODE NO:- Z-486**

FACULTY OF ENGINEERING & TECHNOLOGY

F.Y(All)Year Examination June– 2015

Engineering Physics

(Revised)

[Time: Two *Hours*] **[Max. Marks: 40]**

"Please check whether you have got the right question paper."

i) Q. No. 1 is compulsory.
ii) Solve two questions from the remaining questions
iii) Figure to the right indicate full marks.
iv) Use of foe programmable calculator is allowed.

Q.1 Attempt any five questions from the following 10

a) State Compton effect.
b) Electrons accelerated by a potential of 300v. enter the electric field at an angle of incidence 60°.and get retractedby an angle of 40° .find the p. d between the two regions.
c) State and explain Beth's law of electron retraction.
d) State the applications of CRO.
e) Define the term
   i) Specific Rotation
   ii) Dextro -rotatory substances &Laevo-rotatory substances
f) What is diffraction of light?
g) Define the term
   i) Nuclear fission
   ii) Nuclear fusion
h) Define the term
   i) Superconductivity
   ii) Critical magnetic field

Q.2 a) Explain the principle, working and theory of 'Aston's mass spectrograph. 08
b) Describe the J.J .Thomson's parabola method for the determination of specific charge of positive ion with neat labeled diagram. 07

Q.3 a) What is resolving power of grating? Obtain an expression for resolving power of grating. 06
b) Obtain an expression for the determination of refractive index of liquid. 05
c) A tube of sugar solution 20cm long is placed between crossed Nicols and illuminated with a light of wavelength 6×10^{-5} cm. If the optical rotation produced is 13° and specific rotation is 65°, determine the strength of solution. 04

Q.4 a) Explain Type-I and Type- II superconductor. 05
b) Explain liquid drop model of nucleus. 05
c) Explain the silent features of BCS theory. 05

Q.5 a) Write a short note on 'Bainbridge mass spectrograph'. 05
b) Write a short notes on Michelson's Interferometers 05
c) Write a short note on Betatron . 05