

FACULTY OF ENGINEERING AND TECHNOLOGY

FE Examination - DEC - 2014

ENGINEERING PHYSICS (Rev)

[Time: TWO Hours]

[Max. Marks: 40]

“Please check whether you have got the right question paper.”

- i) Q. no 1 is compulsory
- ii) Solve any two questions from the remaining question.
- iii) Figures to the right indicate full marks.
- iv) Use of non-programmable calculator is allowed.

- Q 1 Attempt any five question from the following (10)
- A What is the function of velocity selector in Bainbridge mass spectrograph
- B Draw a neat diagram of CRT
- C What are x-rays diffraction
- D What is Compton's effect?
- E What are constructive and destructive interference pattern.
- F What are Fresnel's and fraunhofer's diffraction.
- G Define(i) critical magnetic field (ii)critical temperature
- H What is Isotope effect?
- Q 2 A Explain determination of a/m of positive rays by Thomson's parabolic method (06)
- B State and explain Bethe's law for electron refraction. (05)
- C A beam of x-ray having wavelength 0.842 \AA is incident on a crystal at a glancing angle of $8^\circ 35'$ when the first order reflection occurs. Calculate the glancing angle for third order reflection. (04)
- Q 3 A Explain the construction and working of Michelson's interferometer (06)
- B Explain the construction and working of laurentz's half shade polarimeter. (06)
- C Newton's rings are observed in the reflected light of wavelength 5900 \AA . The diameter of 10^{th} dark ring is 0.5 cm . Find the radius of curvature of the lens used. (03)
- Q 4 A State and explain Meissner effect (05)
- B Explain construction and working of G.M. counter. (05)
- C Explain with different stages 'Liquid drop model of a nucleus'. (05)
- Q 5 A Write a short note on 'Bragg's x-ray spectrometer. (05)
- B Write a short note on QWP & HWP (05)
- C Write a short note on type I and type II superconductor. (05)